

**A dissertation submitted to the Department of Environmental Sciences and Policy of  
Central European University in part fulfilment of the  
Degree of Doctor of Philosophy**

**Re-cognising the role of commercial buildings in the production of a meaning and  
practice of energy saving: A radical interpretation of EU policies and four  
exemplars in Barcelona**

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**Budapest**

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# THE CENTRAL EUROPEAN UNIVERSITY

**ABSTRACT OF DISSERTATION** submitted by:

Sergi MOLES-GRUESO for the degree of Doctor of Philosophy and entitled

*Re-cognising the role of commercial buildings in the production of a meaning and practice of energy saving: A radical interpretation of EU policies and four exemplars in Barcelona.*

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This dissertation addresses the under-researched role of commercial buildings in co-producing the everyday meaning and practice of energy saving. Manifold governments and corporations represent their commercial buildings as concrete evidence of their engagement with socially accepted values of energy saving, which buildings are thus assumed to contribute to fostering public awareness and the replication of related practices. This would contribute to bridging the *gap* between the actual adoption of practices and the potential for this, the latter claims based on techno-economic grounds and the widespread acceptance of energy saving values. However, there is limited scholarly and policy reflection about these assumptions. Such appears to be the case with the EU “exemplary” requirements for commercial buildings.

My purpose is to contribute to “re-cognising” commercial buildings as co-producing the meaning and practice of energy saving, thereby contributing to bridging the epistemological gap between policies and everyday life. Tackling this requires a radical critique of the knowledge and interests underlying the marginal recognition of buildings as mediating the (re)production of practice.

In acknowledging critical reviews of energy saving conceptualisations and practices as decontextualising instruments which have a legitimating function and a depoliticising effect, this study was inspired by Lefebvre’s theory about the production of space. For Lefebvre, commercial buildings rely on positivist epistemologies to *represent* a practice and contribute to the illusion that an *appropriate* practice is being produced, ultimately legitimating the status quo. This illusion can be countered through an appraisal of the contradictions between the conceptual, material and social dimensions of practice through a radical critique of everyday (1991). Empirically supporting such a critique requires the use of interpretive methodologies that are able to assess practices as an act of reframing. These are rare in applied policy-making and research.

The research design involved four buildings in Barcelona that were selected for empirical analysis based on their energy saving credentials, as publicized by their respective commissioning organisations. Interpretation relied on a review of official narratives; observation; pre-arranged interviews with experts and officials (n= 62), and on-the-spot interviews with users and passers-by (n= 67).

My findings reveal a divide between official and everyday framings. The study of official representations shows the prevalence of a framing of innovation and singular

exemplars, whereby organisations are veiled from public scrutiny. Everyday meaning-making refers, instead, to the context of the organisation (its values, practices, and social relations) and of public replication. An appraisal of the contradictions in this context of practice counters the credibility of official claims and practices, providing a novel explanation for gaps in applied policy and research.

The policy, political, epistemological and methodological contributions of this research are intertwined as they empirically support the claim that producing a practice of energy saving requires acknowledging: a) the difference between “practice” and “reductionist representations”; b) the legitimating function of commercial buildings; c) the limits of positivist knowledge and post-structuralist critique; and, d) the potential for interpretive methodologies and orientations. Re-cognising buildings appears to be an operable mechanism for re-politicising official practice and for reframing the energy saving problem. I have reflected these contributions in a series of policy recommendations for EU policies that should foster the exploration of the potential of commercial buildings to re-contextualise energy saving practice.

**Keywords:** Commercial buildings, energy saving policy, EU Directives, interpretive policy assessment, Lefebvre’s radical critique of everyday, practice theory

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# Chapter 1. Introduction

This study addresses the under-researched role of commercial buildings in co-producing the everyday meaning and practice of energy saving. By commercial buildings I refer to sites of bureaucratic, exchange and public service activities, commonly commissioned and occupied by government agencies and corporations. This terminological choice aligns with recognised classifications of buildings in applied energy saving research, such as that used by the IPCC (Lucon et al. 2014), whereby “commercial” is considered to be mutually exclusive in relation to “residential” and “industrial buildings”. The use of “energy-saving practices” responds to the need to include a diversity of – often siloed – conceptual and practical strategies that involve the deployment of efficient, renewable, and smart technologies, as well as behaviour, lifestyle, and relational changes. Inspired by Lefebvre’s theory about the production of space (1991) and contemporary applied practice theory, I differentiate between “practices” and “practice”. The latter incorporates the conceptual, material and social dimensions of everyday meaning-making, understood as mediating the reproduction of practices. I study the inconsistencies between these dimensions of practice as appraised in everyday life to formulate a radical critique of energy saving practice by studying its “production”. Methodologically, I apply an interpretive mode of analysis that acknowledges the role of buildings in *re-framing* practice and mediating its reproduction (Yanow 2009; van Hulst and Yanow 2014) to study the dialectics between the *official representations* and the *everyday appraisal* of energy saving practice in and through four commercial buildings in Barcelona.

The motivation for this research originated in my personal and scholarly concern when working as an energy saving policy analyst about the inconsistency between the

official narratives and the practices of scientists, government agencies and corporations. Inconsistencies between policy exhortations for the public to save energy at home and the practices of governments in their buildings jeopardized in my understanding the credibility of energy saving messages. I found this preoccupation about the inconsistencies between policy and practice reflected in the work of Jackson (2006, 2009) and scholarly claims about the fundamental role of commercial buildings in shaping the values, practices and social relations of society (Dutton and Mann 1996). My motivation was further nurtured by the EU requirement for government leadership, and in particular for commercial buildings, to demonstrate an exemplary function (EU 2010, 2012). A most high-profile case involves the solar panels on the White House, which most presidents from Carter to Obama either had installed or removed, sending strong messages about the government's positioning on renewables (Parr 2009). Similar policies have been implemented by Barcelona City Council, which has deployed renewable and smart technologies on its buildings.

However, there is limited recognition and reflection in policy and research about the exemplary role of government buildings. The policy and research focus since the 1973 oil crisis (e.g. Levine, *et al.* 2007; IEA and OECD 2009) has addressed the relative consumption of energy in these buildings and the techno-economic potential for saving energy therein. Government procurement, demonstration, and leadership programs, respectively, rely on commercial buildings to reap economic benefits, to inform the public about techno-economic potential, and to foster the supply of technologies for energy saving (Borg et al. 2006; Harris et al. 2005; Höfele and Thomas 2011; Thomas et al. 2013). The role of commercial buildings in compelling the public to save energy has been restricted to

informing the latter about the economic benefits of adopting certain technologies, disregarding the complex mechanisms of meaning-making.

The EU requirement for commercial buildings to exert an “exemplary role” (EU 2010, 2012, 2018) constitutes a sign of novel policy interest in the consistency between what governments *do* and what they *require* of the public.<sup>1</sup> Consistency is hinted at as being necessary for the public to consider energy saving policies as credible and thus acting accordingly.<sup>2</sup> Conceptual limitations are supported by the absence of: a) a term that encompasses the buildings thus obligated – “commercial” in this research; b) a definition of “exemplary”; and c) implementation and assessment that addresses public appraisal. An exemplary function also justifies the adoption of voluntary labels and standards (such as LEED) devised within the building sector as a means of publicizing the energy saving of (mostly) commercial buildings, and fostering the public adoption of energy-saving practices (GBCE 2018; USGBC 2018). These instruments, like EU exemplary requirements, fail to explain how commercial buildings mediate the reproduction of energy saving values and practices. As I will show in Section 1.2, these conceptual limitations reflect insufficient recognition of everyday meaning-making due to the dominance of positivist epistemologies in the domain of energy saving (Wilson and Dowlatabadi 2007; Sovacool et al. 2014). The dominance of these epistemologies, along with a focus on residential buildings, results in the vilification of the public for its behavioural mismatch

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<sup>1</sup> The EU directives on the Energy Performance of Buildings (2010/31/EU) and on Energy Efficiency (2012/27/EU), jointly amended in Directive 2018/844, refer to “public bodies’ buildings” and those “frequently visited by the public”.

<sup>2</sup> The preliminary formulation of exemplary requirements in the SAVE Directive of 1993 refers to the need of governments to “also” abide by the same principles required of third-parties (Council of the European Communities 1993). The unclear rationale for the EU’s “exemplary” requirements commonly arises in precursory policy attempts aimed at fostering the social dimension of saving energy, as in the case of the German Energy Transition of 2010 (Gailing and Moss 2016).

with expert models, instead of leading to the questioning of expert knowledge (Lutzenhiser 2014), thereby constituting a political problem.

Having described the topic, scope and motivation for this research, in the remainder of this introductory chapter I show how the related policy problem is entangled with epistemological, political and methodological problems and hence requires a radical critique that re-appraises everyday meaning-making. Engaging with such a radical critique furthers the relevance of this dissertation. I also outline the purpose of the research and research questions, and summarize the research design.

## **1.1. Scientific and policy relevance**

For four decades, energy saving policies have failed to exploit proclaimed technological and economic potential, resulting in a “gap” between the *expected* – according to expert knowledge and socially-accepted values – and *actual* adoption of practices, i.e. the “energy efficiency gap” and the “value-action gap” (Jaffe and Stavins 1994; Blake 1999; Sovacool et al. 2014). The official narratives framed in positivist epistemologies continue to blame the public for its irrational behaviour, instead of engaging with social-constructivist approaches and qualitative methodologies (Lutzenhiser 2014; Moezzi and Janda 2014; Wilhite and Norgard 2004; Wilson and Dowlatabadi 2007). Technologically reductionist framings of energy saving practice legitimate organisations and expert knowledge, alienating the public from saving energy (Janda and Topouzi 2014; Lutzenhiser 2014).

The same argument has been applied to the EU reliance on conceptualisations of building efficiency and performance (EU 2010, 2012) which serve to legitimate its institutions whilst failing to achieve significant savings and furthermore de-politicising energy saving practice (Talus 2013; Kanellakis et al. 2013). This argument provides a

plausible explanation for the unclear recognition of everyday epistemologies in the EU formulation of exemplary requirements for commercial buildings, recently reproduced in the amending Directive 2018/844, adding to the timeliness of this research. Amidst concerns about the dominance of scientific and expert knowledge, and about citizen alienation in the making and assessment of energy saving and environmental policies in the EU (Talus 2013; Torfing 2006; Jordan 2005; Habermas 2012) re-appraising everyday meaning potentially constitutes a window of opportunity. Thus, the policy problem that motivates this research is a contemporary one, the epistemological and political roots of which must be addressed.

The epistemological and political problems that are presented have been approached from the constructivist grounds of applied practice theory. According to practice theorists, energy use is embedded in the socio-material context of practice, which needs to be transformed to make significant energy savings (Shove and Walker 2010, 2014; Wilhite 2013). Cultural reviewers of practice also proclaim that buildings are fundamental in shaping the values and social relations of society (Dutton and Mann 1996). However, social-constructivist theory has been marginalized due to its insufficient empirical grounds and its incompatibility with dominant positivist epistemologies, which inform short-sighted and reductionist policies (Wilson and Dowlatabadi 2007). In particular, practice approaches that proclaim the need to transform social relations have been considered inoperable (Stern 2000). So far, the role of meaning-making in mediating the reproduction of practice remains under-theorized (Warde 2011, 11; Wilhite 2014, 2010; Guy and Moore 2005a, 2005b; Dutton and Mann 1996). These problems reflect the need for empirical contributions from qualitative research (Sovacool *et al.* 2015, Stern 2017), for pragmatic



and pluralist research (Guy and Moore 2005b), and for studying the discursive dimension of commercial buildings (Lutzenhiser 2014).

This research espouses contemporary interest in consistent narratives that compel the public to save energy (Bushell et al. 2017; Shove and Walker 2014) and explains the need to re-appraise the message conveyed by non-narrative practices. Novel recognition of the meaning and social relations co-produced by commercial buildings is reflected in the work of Janda and Topouzi. These authors have found that “hero stories” that contribute to legitimating those who commission and are involved in building design dominate official narratives, bringing about the need for “learning” and “caring stories” with greater potential for compelling the public to save energy (2014). However, the former piece of research – like many others – has a focus on the official narratives of organisations and experts and fails to acknowledge the ontological potential of buildings. Even scholarly recognition from critical geographers and psycho-geographers of the post-political function of elite practices tends to marginalize the voices of those who make meaning when scrutinizing the mechanisms of legitimation and alienation (see e.g. Swyngedouw 2011; Healy 2014). This focus on the official narrative has been attributed to the dominance of post-structuralist epistemologies and methodologies amongst critical scholars (Guy and Moore 2005a; Farmer and Guy 2005; Dutton and Mann 2006; Lefebvre 1991).

As I will show in Chapter 3, the marginal recognition from sectoral policy, practice and research grounds of everyday meaning-making resonates with Lefebvre’s understanding of commercial buildings as *monuments* which, relying on the marginalization of everyday meaning-making, conceal the contradictions of official practices, legitimating the social order (1991, 59-60, 144). Accordingly, research that addresses the policy, political and epistemological problems underlying the

marginalization of meaning need to re-engage the public in research, policy making and assessment. An empirical potential arises from contemporary interest in fostering consistency between narratives and practices. It has been empirically demonstrated that scientists' motivation and living according to what they preach fundamentally affects how much credibility the public awards climate change narratives and, accordingly, how much they ultimately engage with action at the individual level (Attari et al. 2016). Similarly, empirical theory serves to ground claims that coherence between government practices and policy narratives are needed for the credibility of policy exhortations (Jackson 2006, 2009). There is thus a potential for re-appraising everyday meaning-making and fostering a critique through the analysis of contradictions. The latter are appraised, in the spatial theory of Lefebvre, through everyday epistemologies (1991).

The present status of the related science, as described above, shows the need for an interpretive critique that relies on the everyday meaning-making of the public. However, interpretive methodologies are rare in policy assessment (Yanow 2009, 2014) and especially in the energy domain (Shove and Walker 2010; Wilson and Dowlatabadi 2007; Lutzenhiser 2014; Sovacool et al. 2015; Stern 2017). Such is the case of reports on the implementation of EU exemplary requirements (Czako 2013; Schüle et al. 2013; European Court of Auditors 2014). The application of interpretive analysis in this research is therefore relevant as it potentially contributes to re-directing policy and research towards the ultimate goal of engaging the public in energy saving policy and practice. In potentially contributes to: a) re-politicising policies, practices, thereby questioning the social relations underlying energy consumption, unveiling the legitimating function of buildings, and making practice theory operable; and c) countering the reductionist epistemologies and methodologies underlying the problem. Although my original motivation was to re-

appraise buildings as policy mechanisms for compelling the public to save energy, there is a need to reveal and address the deep-rooted causes that have the effect of countering the recognition of everyday epistemologies. Addressing the contradictions in the practice of energy saving as represented in commercial buildings therefore requires a radical critique of everyday.

## **1.2. Purpose and research questions**

Responding to the limited attention that is paid in energy saving policy and research to the role of commercial buildings in co-producing the meaning and practice of energy saving, the purpose of this dissertation is the following: To “re-cognise” the role of commercial buildings in co-producing the meaning and practice of energy saving. Inspired by Lefebvre’s critique of everyday, addressing this goal requires answering the following main research question:

*How do official representations of commercial buildings relate to the everyday meaning of energy saving and the (re)production of its practice?*

Answering this question implies the study of what contradictions occur amongst official representations of energy saving in commercial buildings, and between these and everyday meaning-making. This study of contradictions enables the creation of a social critique and contributes to understanding the policy and epistemological gap between expert and everyday knowledge. I study these contradictions through three empirical questions which incorporate an analytical approach which equalizes buildings and policy narratives as framing practices (Yanow 2009; van Hulst and Yanow 2014):

1. *How do official narratives frame energy-saving practices in commercial buildings?*
2. *How do commercial buildings frame energy-saving practices?*
3. *How does the public make meaning of energy saving practice through their experience with commercial buildings?*

### **1.3. Overview of research design**

The study focuses on four commercial buildings located in Barcelona, represented by commissioning organisations as exemplars demonstrating energy saving values and practices. I selected the City of Barcelona due to its being celebrated for its sustainability and smart city policies, as well as for the co-occurrence of organisations as self-proclaimed leaders of saving energy in their buildings. The choice of a single city responds to the need to reduce the effect of the research context in comparative research (Schmidt 2008). The case studies comprised the following buildings: *Fabrica del Sol*, *Media ICT*, the *Endesa Catalan HQs*, and the *Efficient Block*. Together, these buildings are considered appropriate in the study of three issues that resonate with the EU formulation of exemplary buildings (Section 1.1): a) government and corporate ownership, b) diverse degrees of public access, and c) official recognition of a desire to compel the public to save energy. The conceptualisations and practices of the former include support for the principles of “self-sufficiency”, “renewable”, “smart” and “efficiency”. Regarding their commercial use, it should be noted that the *Efficient Block* came about through an energy renovation project involving commercial buildings (government and corporate) and residential buildings (owned mostly by families). Use of the remaining buildings is predominantly commercial. All the former have an administrative use, although *Fabrica del Sol* serves as the

sustainability museum of the Council, while the *Endesa* building also hosts a company “energy museum”.

The research design is intended to foster the development and recognition of interpretive, pluralistic methodologies and epistemologies regarding the topic of energy. Hence, it was fundamental to contrast the official representations – produced by organisations and experts – with the everyday production of meaning. The former were addressed through the study of policies, public communications and interviews with organisation representatives and experts involved in the building design and management. Addressing the latter involved interviews with public users and passers-by. Interviews with external experts, and observation were also part of the study.

The study incorporates the study of local, national and EU policies, to constitute a multiscale research design that combines the depth of case study research with the generalizability necessary in a piece of research designed to inform policy-making, especially from an unorthodox epistemological standpoint. Additionally, to minimize exposure to critique the research relies on a transparent reflective process and triangulation of sources. These features are important in high quality research and for making a scholarly and policy impact on the domains of energy saving and policy assessment that is dominated by quantitative methods and ill-disposed to interpretive and pluralistic contributions.

## **1.4. Dissertation Structure**

Including the current *Introduction*, in which I have outlined the scope, main concepts, problem and methodological approach that guide this research, nine chapters constitute this dissertation.

Chapter 2 expounds the theoretical debates relevant to explaining both how the public makes meaning of commercial buildings, and how applied research addresses or disregards meaning-making. The chapter also justifies the theoretical framework of this dissertation, based on Lefebvre's production of space (1991), which I explain in Chapter 3.

Chapter 4 explains the application of interpretive policy analysis, presents the methodological steps that guided access to the sources of evidence and their interpretation, as well as a set of reflections about the role of the researcher.

Chapters 5 through 7 constitute the analytical core of this dissertation. Chapter 5 analyses how energy saving policies frame energy-saving practices in commercial buildings, with a focus on EU exemplary requirements, their implementation by the Spanish and Catalan governments, and the policies of the Barcelona City Council. Chapters 6 and 7 focus on the building cases. Expert narratives and direct observation of the buildings inform the study of official representations in Chapter 6. Examining public appraisal of the buildings is the object of Chapter 7.

Chapters 8 and 9 wrap up this dissertation with an overview of its contributions to the scholarly knowledge. The overarching argument of this dissertation is that energy saving policies and assessment methods need to engage everyday meaning-making: therein lies an unexplored potential for positive social transformation.

## Chapter 2. Review of theoretical and disciplinary approaches

This chapter demonstrates the much-needed engagement with everyday meaning-making in current energy saving research, as well as the potential for addressing commercial buildings in attempts to understand and transform current practice. The insufficient focus of applied research concerning meaning as mediating the reproduction of practice parallels that the insufficient policy reflection about the exemplary role of commercial buildings, presented in Section 1.1. This is problematic because scientific knowledge plays a fundamental role in shaping environmental and energy policies in the EU, and in the depoliticisation of these domains which underlies the alienation of the public (Talus 2013; Torfing 2006; Jordan 2005; Habermas 2012). Hence, such a review of the theoretical approaches to everyday meaning making contributes to understanding official framings, as studied through Questions 1 and 2. It also serves to increase understanding of how applied research engages with the everyday production of meaning, addressed in Question 3, and its role in mediating practice. This involves exploring disciplinary approaches that have the potential to transform the dominant knowledge and the social relations co-produced by official representations of buildings, as addressed in my main research question. Aligned with the research purpose, this chapter contributes to revealing the epistemological roots of the problem and to unsettling them with the support of existing theory, and defining the theoretical grounds for the radical but pragmatic critique that I develop in later chapters.

In the ten sections of this chapter I first introduce the reductionist techno-economic framing (Section 2.1) which I find dominates theorizations about energy consumption that address separately residential and government buildings. These are respectively reviewed

in sections 2.2 and 2.3. Second, I explore the political, epistemological and disciplinary roots of technologically-reductionist practices (Section 2.4) and formalist architecture (Section 2.5), which have in common the marginalization of everyday meaning-making. Third, I discuss the potential for re-appraising meaning to expose and destabilize post-political conceptions and tactics in the crux of the chapter (Section 2.6). This potential is then explored through a review of theories of practice (Section 2.7), learning (Section 2.8), and on the acceptance of renewable infrastructures and of social corporate responsibility practices (Section 2.9). This review serves the purpose of gathering a toolset of empirically-grounded approaches for transforming the official framing of energy-saving practices. Finally, in Section 2.10, I summarize the chapter by reflecting on the transformative potential of recognising the political function of buildings, and incorporating the public through interpretive methods.

## **2.1. The dominance of an economic framing**

Energy saving or conservation policies have their origin in the oil crisis of the 1970s and have gained additional relevance due to the increasing recognition of fossil energy consumption's contribution to climate change (Geller et al. 2006). Energy efficiency is one such approach to saving energy which claims the possibility of “cost-effectively” reducing consumption through improved technologies whilst maintaining or improving the services thereby generated (Stephenson et al. 2010; Lopes et al. 2012). A great deal of policy attention is paid to buildings based on the assumption that their energy consumption contributes to one-third of the greenhouse gas emissions, and that 29% of this consumption could be economically offset through the deployment of technologies (Stern 2006; Levine et al. 2007; IEA 2011). As a result of this techno-economic framing, most policies confront the “energy efficiency gap” between the *potential* and *actual* adoption of energy efficient



technologies (Jaffe and Stavins 1994; Moezzi and Janda 2014), understood as a “large-scale underinvestment in more energy-efficient technologies” (Janda and Moezzi 2014). Energy efficiency conceptualisations have failed to make the predicted savings, whilst overall savings have been offset by growth and an increase in demand for services (Wilhite and Norgard 2004; Wilhite 2013, 133; Guy and Shove 2000).<sup>3</sup>

Nevertheless, “efficiency” has become an “unequivocal good” (Lutzenhiser 2014), thereby relegating the concepts of “energy saving”, “conservation” and “reduction” that encompass values, needs, uses and social relations (Wilhite and Norgard 2004). It fosters a reductionist “framing” of the energy saving problem that has also engulfed social researchers (Lutzenhiser 2014, 1993; Wallenborn and Wilhite 2014). This reductionist framing is problematic because substantive achievements require not only new technologies but also changes in the cultural meanings and practices of interpretive actors (Geels 2004, 2010). Increasing recognition of the limitations of energy efficiency are reflected in the question posed by the ECEEE – the die-hard energy European efficiency organisation – “Is efficient sufficient?” under the assumption that “we also need to look beyond efficiency improvements towards how we can reduce absolute energy consumption” (ECEEE 2018b). This recognition of the insufficiency of efficiency does not come with a call to question its dominance as a guiding principle.

As a result of the dominance of a techno-economic jargon it has been argued that “sustainable architecture” has been reduced to “energy efficiency” which, together with other empty concepts about progress and innovation, fosters optimism about technological

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<sup>3</sup> “[T]he policy and research at the centre of the discourse on energy sustainability suffer from a self-deception, which revolves around the equation of ‘efficiency’ with ‘reduction’....In this case, the deception supports the language of efficiency and the untenable contention that technological efficiency alone will offset continued growth in energy services to the extent that deep reductions in energy use are possible” (Wilhite and Norgard 2004).

and quantifying knowledge whilst marginalizing the political dimensions of change (Guy and Moore 2005a, 5). This de-politicising effect is achieved by the capacity of “empty signifiers” to mean “everything and nothing”, hence obscuring contradictions, and fostering public acceptance and social hegemony (Tregidga et al. 2018). Accordingly, the quantitative data that assesses progress towards attaining these conceptual goods serves to present results in positive ways, obscuring absolute savings, overall contributing to the legitimisation of expert knowledge and commissioning organisations (Lutzenhiser 1992; 2014; Moezzi and Janda 2014; Janda and Topouzi 2015).

The legitimisation of organisations is then furthered by greater policy and research attention being paid on energy efficiency grounds to residential buildings than to commercial ones, diverting attention from presumably rational organisations (Lutzenhiser 2014). The political function of efficiency is greater in consideration of ethnographic claims about energy efficiency as a normative precept that subjectifies the citizen as consumer, blamed for its failure to abide by economic prescriptions (Wilhite and Norgard 2004; Wilhite 2010; Wallenborn and Wilhite 2014; Lutzenhiser 2014; Moezzi and Janda 2014). In the following two sections, I discuss the siloed approaches to residential and commercial buildings that is guided by the dominance of the energy efficiency framing.

## **2.2. Residential building models**

The dominant model of residential energy consumption explains energy-saving practices as informed and conscious choices. It pays fundamental attention to the provision of information, whilst disregarding the formation of routines and values in a socially-constructed and culturally-mediated context (Lutzenhiser 1992, 2014; Wilson and Dowlatabadi 2007; Wilhite and Shove 1998; Wilhite 2013). This focus on economic

information has not been replaced, even though it has been empirically demonstrated that, by substituting environmental values, economic motivation can result in greater consumption (Moezzi and Lutzenhiser 2010; Slocum 2004). There has been some initial recognition that “substantial behavioural changes are unlikely to result from policies and campaigns that continue to present behavioural change as a consequence of increased awareness” (Barr and Gilg 2007). However, the potential for understanding the complexity of behaviour through social-psychological research is countered by the former being engulfed in the dominant framing. This type of research adds explanatory capacity to the dominant model of energy efficiency, thereby legitimating it and expanding its borders to include the non-technological dimension of behaviour (Lutzenhiser 2014; Moezzi and Janda 2014).

Behavioural economics, technology adoption and socio-psychological models tend to account for context through the effects of “bounded rationality”, “heuristic decision-making”, “situated knowledge” and “experience” (Huijts et al. 2012; Litvine and Wüstenhagen 2011). Processes of social norm “reinforcement”, “activation” and “internalization” account for the effects of “visible” practices conducted by similar others (Aarts and Dijksterhuis 2003; Tiefenbeck et al. 2013; Oikonomou et al. 2009; Huijts et al. 2012; Litvine and Wüstenhagen 2011; Bergstrom et al. 1986). Similar others also contribute to “modelling roles”, “block leaders”, and the formation of a “critical mass” (Abrahamse and Steg 2013; Wiser 2007), becoming sources of tailored information and contributing to the normalization of certain practices. However, these theories fail to account for changing social relations and for the role model of experts and elites in shaping context, norms and routines (Lutzenhiser 1992; Wilson and Dowlatabadi 2007). The limited attention paid to the “context” in social-psychological explanations results in an

unclear relation between “values” and “behaviours”, where the context is referred to ad hoc, lacking the generalization of theory (Blake 1999; Kollmuss and Agyeman 2002; Stern 2000; Upham et al. 2009).

The limited attention that is paid to the context in these models is problematic because it “decontextualises” and “disembodies” the transference of knowledge and practice (Shove 1998), reducing the possibilities for “making meaning” and for practices to reproduce (Wallenborn and Wilhite 2014). Such limited attention to the context has been attributed to the dominance of positivist epistemologies, to the limitations of experimental and semi-experimental research, and the empirical theoretical foundations of these (Wilson and Dowlatabadi 2007). The problem is magnified in the case of energy because its “invisibility” limits the perceptual ground for shaking up “tacit knowledge in daily routines” (Wilhite 2010; see also Shove 2003). This invisibility is furthered by efficient products and buildings which are intended to resemble in appearance and use their conventional counterparts (Shove 2003; Wallenborn and Wilhite 2014; Shove and Chappels 2001; Lutzenhiser 2014; Shove and Warde 2002), making questionable the very existence of efficiency as practice:

If it were possible for something to be doubly invisible, that something would be energy efficiency – the invisible, unnotable, generally imprecisely estimable phenomenon that did not occur. (Lutzenhiser 2014)

Efforts to make energy efficiency visible have been made through labelling, billing, metering and certification that promote a “routine shaking” (Wilhite 2010) and “re-materializing” effect (Burgess and Nye 2008). However, these efforts do not overcome the flaws inherent in reducing energy saving to quantitative, mostly economic, magnitudes.

The proven long-term effect of these programs is unclear or marginal in the reviewed literature (Darby 2008; Novikova et al. 2011; Allcott 2011; Toke 2011; Strengers 2011). This shows the need to attend to the subjective dimension: the context through which the public makes meaning. Instead, residential policies continue to rely on narrative normative calls to transform behaviours (Jackson 2005, 2006; 2009 Barr and Gilg 2007; Burgess et al. 1998), disregarding the need to transform the context, despite the limited success of the dominant model.

The next section shows how the marginalization of “context” in the research and policies of residential energy-saving practices is reflected in government building policies.

### **2.3. Government building policies**

There are claims from an energy efficiency standpoint that government buildings have been underrated in energy saving policies, and that the latter should play a greater role in the widespread adoption of energy-saving technologies (McGrory et al. 2006). Government buildings are referred to as “serving as example”, “having a multiplier effect”, “demonstrating the cost-effectiveness of technologies”, and “raising awareness and leveraging a market for energy efficient technologies” (Ürge-Vorsatz and Koeppel 2007; Owens and Driffill 2008; Höfele and Thomas 2011; IEA 2011; Wuppertal Institute 2014). These roles are then echoed in some policies.<sup>4</sup> These programs are also included in miscellaneous categories such as “cross-cutting” (Levine et al. 2007) and “catalysing measures...to facilitate a market breakthrough” (Lund 2007). Supporting arguments tend to primarily address the potential cost effective savings of government buildings and

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<sup>4</sup> Aligning with these scholarly approaches, the European Union directives regulating the “leading” and the “exemplary role” of governments refer to cost-effectively saving energy in government buildings (European Commission 2011), assuming this has a “multiplier effect” (EU 2010, 2012).

include a market rationale: “using targeted government purchasing power to lead the market”, referred to as “public sector leadership” (Harris et al. 2005)<sup>5</sup> and “market leadership by example” (McGrory et al. 2006). An informative economic rationale explains the “early adoption” of energy-saving technologies as informing the public about the possibility of saving energy in a cost-economic way (Jaffe and Stavins 1994). The rationale of these programs is therefore reduced to the potential for making direct savings by adopting efficient technologies, market transformation and rational decision making. The subjective role of buildings in shaping the context of meaning making is either vaguely stated or marginalized. For instance, it is referred to *en passant* as “creating an example that spurs others to act” (Harris et al. 2005). This sort of claims lack an empirical basis, and appear instead – based on common sense – as only tacitly recognising everyday epistemologies, hence lending support to the positivist framework.

Going beyond considerations of cost-effectiveness, the Wuppertal Institute's (2014) categorisation of energy saving programs in Government buildings (Table 1) acknowledges the transformative potential of “innovation” in leading by example, procurement and demonstration programs (references include “(ultra) low-energy buildings” and “very energy-efficient technologies”). There is explicit recognition of market transformation through demand – by leading by example and procurement programs – and improving expert and sectoral decision makers’ knowledge and familiarity with innovative technologies through demonstration programs. The attention paid to the need to integrate energy-saving practices through “leading by example” programs is only tacit in calls such as: “[the need] to only build (ultra) low-energy buildings”. However,

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<sup>5</sup> Harris estimates as 40% the potential the European Union’s city councils to cost-effectively save energy through fostering energy efficiency in buildings and street lighting.

references to the context of practice where meaning is made and practice replicated are vague or non-existent. The contextual aspects of consistency, communication or replicability are not explained.

Table 1. Types of policy programs in government buildings.

<b>Lead by example</b>	<b>Procurement</b>	<b>Research development and demonstration</b>
“Lead by example” programmes in the public sector... “deeply” retrofit existing buildings to very low energy consumption levels and <i>to only build</i> (ultra) low-energy buildings	Public procurement requiring very energy-efficient building technologies	(definition not detailed in the source)
1) Reducing energy bills for public budgets 2) Introducing, accelerating and/or expanding the market for energy-efficient buildings or technologies, through: Raising awareness and investor confidence; Demonstrating cost-effectiveness; Directly providing a market; Economies of scale		1) Accelerate the market introduction of innovative concepts 2) Reduce the incremental costs of energy-efficient solutions

Source: modified from Wuppertal Institute (2014).

In the following section I demonstrate that the technological optimist framing of practice, along with quantitative conceptualisations (Section 2.1), contribute to emptying energy saving practice of meaning, and have a legitimating function.

## 2.4. Practices reduced to technologies

Power relations need to be accounted for in any sensible attempt to save energy at a societal level (Moss et al. 2016). However, assuming the rationality of organisations is problematic because it legitimates them, as argued in Section 2.1. Moreover, it disregards complex social motivations. “Bounded rationality” describes the economic interest of organisations in seeking “legitimacy” and “credibility” by leading the adoption of environmental protection- and saving energy measures (Geels 2010; Porter 1998). Accordingly, it is in

the interest of organisations to seek institutional legitimacy. This accounts, as defined by Suchman, for the fitness between individual actions and the accepted values of society:

Legitimacy is a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions. (1995, 574)

Endeavouring to attain legitimacy is found to underlie the leading role of “utility companies, government agencies, business firms, and non-profit advocacy groups in the process of producing energy efficiency as an output” (Lutzenhiser 2014). The former continue to seek legitimacy in a failed techno-economic framing, hindering the development of alternatives, regardless of their alienating effect on citizens (ibid). As a result, citizen alienation is furthered at global, EU, and local scales through the reiteration of populist narratives about the sufficiency of technological practices of organisations (“elites”). These are perceived as better equipped to take action, thereby de-politicising the environmental problem and reducing it to technological one, whilst generating the illusion that sufficient action is being taken to amend current environmental problems (Healy 2014; Swyngedouw 2010, 2011; Talus 2013; Baccarne et al. 2014).

The ecological problem ... does not invite a transformation of the existing socio-ecological order but calls on the elites to undertake action such that nothing really has to change, so that life can basically go on as before. (Swyngedouw 2010)

Making a contribution to legitimating governments are counted “‘dramatic’ aspirational targets and visions about the role of voluntary action” which contribute to “hero stories”



that send “moralistic” messages that deny the potential of citizens as “creators of improved energy use” (Moezzi and Janda 2014).<sup>6</sup>

The desire to build legitimacy is found to underlie the leading role of governments (Talus 2013; Swyngedouw 2011; March and Ribera-Fumaz 2016), and can be necessary for creating credibility for their policies (Jackson 2009, 98). However, the legitimating rationale that underlies the “high-flying targets” defined in EU strategies<sup>7</sup> have been criticized for lacking scientific grounds (Kanellakis et al. 2013) and responding instead to a legitimacy shortage of EU institutions. These would then self-represent as championing the production of energy saving practice whilst not questioning consumption and production levels – something that energy efficiency conceptualisations permits (Talus 2013). At a local level, “entrepreneurial city” – wherein economic development and interests are placed before citizen needs – has been termed to reflect on the interest of city councils in exhibiting their sustainability values and practices for the purpose of attracting international investors (Harvey 1989, 2005; Jessop 1997). According to these critiques, the “smart city” constitutes an “instrumentalist”, “reductionist” and “technologically determinist” mechanism of elite legitimation and social control (Anttiroiko et al. 2014). It conceals obscure agendas and interests (Haarstad 2017), the underachievement of projects, the need for regulation, and the fundamental need for social and institutional changes to

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<sup>6</sup> These authors cite “hero stories” as first being used in Janda and Topouzi “Closing the loop: using hero stories and learning stories to remake energy policy”. *In*: Proceedings of ECEEE Summer Study. Presqu’île de Giens, France: European Council for an Energy-Efficient Economy; 2013. The term was further elaborated by the same authors and published in a peer-reviewed journal as Janda and Topouzi, 2015.

<sup>7</sup> The EU Energy 2020 A strategy for competitive, sustainable and secure energy – COM(2010) 639 final – sets the target of a 20% increase in energy efficiency and renewable energy generation by 2020 – commonly referred as the 20-20-20 targets – to justify the exemplary role of commercial buildings in EU directives (2010 and 2012).

create substantial socio-environmental benefits (Baccarne et al. 2014; March and Ribera-Fumaz 2016).

Having reviewed the existence of critical claims about the legitimating rationale and pervasive alienating effects of technologically reductionist practices of energy saving, in the following section I show how commercial buildings serve a similar function.

## 2.5. Buildings reduced to their form

According to some cultural scholars of architecture, there is a need to shift from studying what official narratives *say* – assuming their discursive effects –, to study their *doings* (Guy and Moore 2005b, 233), thus assuming that their narratives can be misleading.<sup>8</sup> Dutton and Mann grant a fundamental role to buildings as *signifiers* in the everyday formation of knowledge and practice:

Much of what we know of institutions, the distribution of power, social relations, cultural values, and everyday life is mediated by the built environment... To make architecture is to map the world in some way, to intervene, to signify: it is a political act. (1996, 1)

However, according to these scholars a series of epistemological, disciplinary and practical reasons underlie a formalist conception and practice of commercial buildings, emptying them of meaning, particularly regarding the positivist-dominated topic of energy saving.

As a result of the post-modern hegemony of “text”, “context is textualized” disregarding and hence concealing the subjective and social dimension of meaning. To this

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<sup>8</sup> Paraphrasing Latour (1987), Guy and Moore claim that: “to understand how sustainable technologies are produced and reproduced in the world ...don’t study what the practitioners of green architecture say, study what they do!” (2006, 233).

has contributed the focus of post-structuralist discourse analysts in text (Dutton and Mann 1996, 19, 190, 196; see also Hart 2001, 3037). Even discourse analysts inspired by Laclau and Mouffe (1985) – such as Tregidga and colleagues (2018), who focus on the official narratives as source of evidence – acknowledge that “linguistic and non-linguistic practices ... structure both thought and action”. The explicit recognition on the analytical grounds of Foucauldian discourse that “buildings”, in the same way as “texts” and “institutions”, are “discursive practices” (symbolic carriers, mechanisms of knowledge formation and power) (Bacchi and Bonham 2014) has not been found in research applied to the topic of this dissertation. Instead, ongoing conceptual debates amongst these scholars about the domain of the “discursive” and the “extra-discursive” (Barad 2007; Bacchi and Bonham 2014; see also (Moss et al. 2016) appear to weigh down their capacity to go beyond the study of official narratives to the study of buildings.

This focus on the text is also common amongst critical anthropologists – traditionally interested in the study of material and social sources of evidence (Hart 2001, 3037). A “cognitivist paradigm” dominates social and cultural research, limiting the recognition of the “subjective” dimension of actions (Ingold 1999, ix); what others refer to as the “materiality of artefacts” and “things” (Verbeek 2005, 2).<sup>9</sup> In the field of energy saving, reviewers like Janda and Topouzi (2014) bring new interpretive insight to a discipline dominated by quantitative methods, but continue to rely on the official narratives as the core source of evidence, although tacitly acknowledging the everyday meaning of practices for building users and non-users. It appears that a re-appraisal of the everyday meaning of buildings faces the obstacle of reductionist conceptualisations and positivist

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<sup>9</sup> “We have managed to expunge artifacts of their materiality both in our thinking about them and in our design of them. Now that we have survived to the death of God and the death of the subject, we seem to be faced with the death of the thing” (Verbeek 2005, 2).

knowledge, whose discursive challenges (e.g. the baits of empty signifiers) drain critical review from pragmatic engagement.

The dominance of formalism, the same as techno-economic conceptualisations of energy saving (Section 2.1.), potentially draws attention from the complexity of everyday meaning-making as a process based on appraisal of visual and economic information. Treating buildings as obsolescent products reduces the work of the architect to “dress[ing] up the exterior as an object for desirable consumption...framing architecture as the practice of visual gymnastics” (Ward 1996, 49). This dominance of design over practical considerations is enabled by technological development, but especially by faith in new technologies, which are fed by positivist assumptions about their “transparency” (Dutton and Mann 1996, 38; Guy and Moore 2005a, 5; Wallenborn and Wilhite 2014).

On the contrary, passive technologies, materials that provide insulation and cooling, as well as vernacular designs and improvements to the urban landscape are often omitted in favour of internationally recognised designs and materials maladjusted to the local conditions (Wilhite 2009, 2010; Moezzi and Janda 2014). Even though these aestheticist designs require greater support from active systems to create comfort – and hence energy supply – than their vernacular counterparts, they receive positive recognition from certification instruments (Wilhite 2010). This is possible because efficiency and sustainability certificates rely on ad hoc simulations that confuse *calculated efficiency* with *actual savings* (Moezzi and Janda 2014; Wilhite 2010; Guy and Moore 2005a; Janda and von Meier 2005).<sup>10</sup> Certificates tend to reflect the areas in which technical analysis is

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<sup>10</sup> Such is the case of the EU Energy Performance Certificates for buildings, promoted in commercial buildings as part of their exemplary function, as well as voluntary standards like LEED and BREEAM.

capable, ignoring the fundamental factors of ownership, use, operation and local conditions (Farmer and Guy 2005) that constitute the context in which meaning is produced every day.

What is important, then, is to consider the multiple possibilities for meaning, the alternative constructions of culture and nature in each case we explore, rather than to limit meaning to narrow calculations concerning efficiency. (Guy and Moore 2005b, 223)

The relevance of the problem extends to producing the risk that energy saving and sustainable practice become identified with the unsustainable practices of organisations (Tregidga et al. 2018; Spence 2007) represented in commercial buildings. Countering the rational economic principles of energy efficiency, the (energy-related) operating costs of these buildings becomes marginalized by the legitimating function of international designs and innovation. However, the official narratives continue to rely on “hero stories” enabled by empty conceptualisations and quantitative models to conceal such failures, jeopardizing the development of socially transformative stories of “learning” and “caring” (Janda and Topouzi 2015).

The claims presented throughout this section, although plausible, lack the empirical basis of incorporating the public appraisal of buildings. In the following sections I discuss the opportunity for the re-appraisal of the everyday meaning of buildings as a part of a re-politicisation process.

## **2.6. Leveraging legitimacy to re-politicise energy saving**

Social-constructivist and interpretivist insights have the potential of explaining how the practices of organisations are interpreted by the public to “sediment into particular

discourses, i.e. ways of talking and thinking about issues” (Geels 2010; borrowing from Hajer 1997). However, these disciplinary approaches fit only with difficulty the quantitative methodologies and positivist epistemologies that inform short-term policy goals (Wilson and Dowlatabadi 2007; Wilhite and Shove 1998). Bridging the divide between technical and social knowledge requires alternative scholarly insights (Shove 1998) for reframing the problem: “If we see technical change as an irredeemably social process the notion of non technical barriers is as instantly irrelevant as that of pure technical potential” (Shove 1998). This requires questioning the social and knowledge dominance underlying energy consumption:

[P]olicies that are designed to deliver similar services but with less energy are anything but ‘neutral’...they play an important part in reproducing the status quo and in sustaining and legitimizing contemporary material arrangements and practices. (Shove and Walker 2014)<sup>11</sup>

These social-constructivist critiques tend to be however stigmatized as “radical”, making unlikely the adoption of critical theory in a domain like energy saving (Middlemiss et al. 2018). According to Lefebvre, a seminal theorist of practice theory, “radical” needs to be understood as seeking the political and epistemological roots of the problem (1991).

Underlying the limited commitment of organisations to enacting and communicating their sustainable practices is the “shifting” and diverse meaning attached to these practices (Geels 2010). Moreover, organisations may avoid leading the adoption of practices to avoid being perceived as “greenwashing” (Lyon and Maxwell 2011), and

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<sup>11</sup> Shove and Walker add: “Whilst there is some scope for technological innovation and increased efficiency, it is clear that if climate change policy is to make a difference on the scale and at the rate required, it will have to engage more overtly, and more explicitly, with the bundles and constellations of practice on which energy demand depends” (2014).

prefer not to be in the spotlight to reduce the risk that unexpected negative information could have to their public image (Greenberg 2014). Accordingly, there is a need for increased deliberation about the priorities and goals of sustainability (Geels 2010). Deliberation has been also widely defended as a much-needed way to improve the legitimacy and democratic grounds of both EU policies, and of environmental and energy policies (Habermas 2012; Torfing 2006; Jordan 2005). Claims for more deliberation also confront the social order, since the deliberation necessary to re-engage the public requires less hierarchical relations. In addition to these socio-political considerations, there are also arguments that relate deliberation to increased adoption of energy-saving practices. There are empirically supported claims about the learning that can occur within participation processes (Bull et al. 2008). The “social potential of energy efficiency” has been proposed, following the premise that “[c]itizen participation might help reconfigure the ‘knowing’ and ‘caring’ elements of behaviour and technology change, overall supporting a more sympathetic view of people that better meets people where they are” (Moezzi and Janda 2014).

However, the potential for deliberation has limitations. First, there is the risk that the “social potential” of deliberation becomes a new frontier of energy efficiency, whose exploration contributes to further legitimating the dominant model. Second, a focus on participation detracts attention from understanding how people get involved in saving energy in their everyday lives. As Shove and Walker argue:

Instead of figuring out how to involve more or different stakeholders in an externalized process of design, the more substantial challenge is to understand how consumers, users and practitioners are, in any event, actively involved in making and reproducing the systems and arrangements in question. (2010)

Third, elites have a drive for legitimation – fulfilled through empty-of-meaning concepts, practices and commercial buildings – which prevails over the public interest in terms of meaningful, credible and engaging practices. Finally, deliberation and participation will continue to be constrained in their capacity to re-politicise energy saving practice as far as empty conceptualisations “close down” the sustainability debate, precluding the agenda from engaging in pluralist debate (Stirling 2007; see also Mouffe 1999).

To foster the potential for social critique and deliberation, scholarly research needs to overcome the dominance of positivist epistemologies and the limitations of textual critique which are replete with the *bait*s of empty conceptualisations (Sections 2.1 and 2.5). Following Oels exhortation:

Instead of assuming that what a programme is doing or supposed to do is known, one must study the visibilities, technologies, knowledges and identities forged by such a programme ...that is not part of its official rationality. (2005)

This requires engaging those targeted by policies and practices of energy saving. As claimed by Guy and Moore, “the challenge of sustainability is more a matter of local interpretation than of the setting of objective or universal goals” (2005a, 1). Recognising the local meaning co-produced by practices as a social good provides an opportunity for organisations to improve their public image, overcoming the problematic nature of engaging with changing sustainability conceptualisations. It implies re-politicising practice, contributing to more inclusive policy-making and deliberation processes.

In the following sections I extract from social and cultural research a toolset of theories and applied empirical explanations of everyday meaning-making processes, and identify the gaps in the literature.



## 2.7. Reproducing practice through repeated exposure

Acknowledging that “practices make up a part of any social theory with sufficient explanatory structure to grasp complex and coordinated activities, such as science, politics, and economics” (Bohman 1997), I study the capacity of practice theories to inform my research. Practice theory is a “heterogeneous” set of theories that study “embodied, materially mediated arrays, and shared practical understanding” (Schatzki 2001, 2) and “shared meanings” (Shove and Pantzar 2005; Shove 2007, 65; Araujo et al. 2010). In its strict sense, “practice” differs from material arrangements, actions and narratives, which can be referred as practices: “Material arrangements ubiquitously prefigure practices – that is, the continued happening of the doings and sayings that compose specific practice” (Schatzki 2011, 10). According to practice theorists, energy use is embedded in the socio-material context of practice, which needs to be transformed to make significant energy savings (Shove 2010; Shove and Walker 2010, 2014; Wilhite 2013).

[E]nergy supply and demand are realized through artefacts and infrastructures that constitute and that are in turn woven into bundles and complexes of social practice. (Shove and Walker 2014)

Accordingly, these authors defend the use of “practice” as different from “energy practices”, which they understand as behaviouralist and absent of the social dimension of practice (an example being Stephenson et al. 2013). However, some cultural scholars of practice freely use “energy practices” and “practices” to refer to actions, material arrangements and narratives (e.g. Wilhite 2013; Wallenborn and Wilhite 2014). Fundamentally, both social and cultural theorists of practice understand “meaning” to be produced *only* in a socio-material context of practice:

[M]aterial arrangements including fuels and configurations of matter and energy only have meaning within, and in relation to, the practices in which they are enfolded and through which they are reproduced. (Shove and Walker 2014)

An action is meaningful once it is inscribed into a practice. (Wallenborn and Wilhite 2014)

In re-appraising the context as mediating the production of meaning and practice, the turn towards practice explicitly addresses the theoretical limitations of reducing practices to economic decisions (Hargreaves 2011; Wilhite 2010), as problematized in Section 2.1.

However, epistemological contradictions occur within practice theory (Bohman 1997), which has a diverse interest in use, symbolic consumption and perception, and furthermore has a limited empirical basis regarding the production of meaning. Some practice theorists focus on user practices to highlight that “tacit knowledge” and the “naturalization” of practice occurs through repetition (Wilk 2009, 150), disregarding non-user engagement. Others study the socially-constructed symbolism of consumption (Shove 1998; Warde 2005) but do not explain how their symbolic value is created, making necessary greater interpretive insight (Warde 2016, 100–101; Hargreaves 2011). Interest in the practices of elites and experts (Shove and Walker 2010; Shove 2003; Janda and Parag 2013; Wilhite 2013) risks further legitimating their narratives and socially dominating roles. Ultimately, these insights have not yet produced an accepted policy model for fostering energy saving amongst citizens (Geels 2010; Stern 2000; Middlemiss et al. 2018; Strengers et al. 2015).

Cultural approaches to practice recognise as mediating the reproduction of practice “the agency possessed by things, routines and context [which] has been referred to,

variously, as practical knowledge, practical consciousness, tacit knowledge and embedded knowledge” (Wilhite 2013, 134). The engagement of non-user publics with meaning-making is recognised by cultural reviewers interested in “the agency of the subjective meaningfulness of action” (Warde 2011, 11; see also Wilhite 2014). Authors like Wallenborn and Wilhite acknowledge the repetition of “immediate exposure to *practices*” as mediating the reproduction of practices through common sense methods of everyday appraisal, including direct and culturally facilitated experience (2014). However, these scholars also recognise that “the agency in things has been undertheorized in all of the research domains which are ostensibly concerned with understanding or influencing home practices” (Wilhite 2010; see also Shove and Pantzar 2005; Ingold 1999, Verbeek 2005). The role of meaning in mediating the reproduction of practice appears to be insufficiently addressed. Potential arises for overcoming the focus on the repetition of exposure to practice, whether through use or other experiential engagement; a claim which I also find common to the works of Wilk (2009) and Wallenborn and Wilhite (2014).

To overcome the limitations of practice theory it is necessary to “push interpretive social science in a more empirically fruitful direction” (Bohman 1997), making it operable. Expectations exist about the work of cultural reviewers in relation to their capacity to inform empirical research regarding how “buildings and tools” co-produce meaning (Lutzenhiser 1992; see also Randles and Mander 2009). However, there is a general lack of thorough ethnographic reviews of official representations in and about commercial buildings through case studies:

The detailed ethnographies required to understand the routine performance of frameworks, narratives, vocabularies, and particular utterances in organisational settings, have never been done in the field of energy efficiency. (Lutzenhiser 2014)

Most ethnographic research about commercial buildings focuses on building users (e.g. Hargreaves 2011; Janda and von Meier 2006). Others, similar to discourse analysts (Section 2.1), rely on the narratives of managers and engineers (e.g. Staddon et al. 2016; Galvin and Terry 2016; Dumitru et al. 2016; Whittle et al. 2015). It appears that in avoiding the dominance of the visual, cognitive, quantitative and textual in dominant disciplinary approaches to saving energy and representing buildings (Wallenborn and Wilhite 2014; Dutton and Mann 1996; Guy and Moore 2005a), practice research has left unattended perception by non-users. Thus, there is potential for incorporating the everyday appraisal of practice by citizens as non-user publics, thereby addressing the under-theorization of meaning-making as mediating the reproduction of practice.

Supporting the argument presented in Section 2.6, there is the potential and need for empirical research to re-appraise meaning, enabling a social critique that pushes organisations to transform their practice, based on their sensitivity to public opinion (Geels 2010); namely, to shame and praise them for the meaning and practice co-produced by their buildings. This argument corresponds with the demand of Janda and Topouzi to frame commercial buildings in “caring” and “learning stories” (2015). This would potentially contribute to countering the current reliance of organisations on – empty-of-meaning – conceptualisations, practices and buildings (Sections 2.3-2.5), fostering a positive social function of buildings, and making operable the social-transformative demands of practice theorists. This implies overcoming the focus of practice theory on the repetition of exposure to practices. Potential arises in recognising the problematic nature of contradictory messages (Shove and Walker 2014).

In the following section I present social learning claims about the potential of government buildings to contribute to the consistency and credibility of the policy message.

## 2.8. Learning from consistent practice

According to social learning theory, citizens tends to reject contradictory information (Resnick and Chi 1988; Marshall 1995; Upham et al. 2009). A fundamental obstacle to ensuring the credibility of energy saving messages is the multitude of media messages that promote a higher level of consumption and certain lifestyles (Burgess et al. 1998; Wilhite 2013, 69; Jackson 2009, 11). A reliance of governments on a “top-down” “exhortation model” would then generate “public alienation and resistance to environmental communications” and leave unattended the newly recognised potential for their practices to foster transformation in the practices of the public (Burgess et al. 1998).

Building on social learning and social practice theory, Jackson claims that government leadership constitutes “the main means” of transforming “subjective areas of decision-making” to foster more sustainable models of consumption (2006, 40, 54). The effectiveness of the “policy mix” depends upon its procedural “coherence” and ultimate “credibility” (Rogge et al. 2017). Based on the empirical findings of Bandura (1973, 1977) and the work of Murray (2010) on social learning theory, Jackson claims that “[w]e do not learn purely by imitation”, thereby acknowledging that governments may be “role model[s]” that enable “learning” (2005, 110–11, 113). This role model position could be confused with the explanation of Jaffe and Stavins about the role of government programs in providing information to economic decision makers (1994). It could be also understood as an appeal to repeated exposure as proposed by some practice theorists (Section 2.7). However, Jackson’s assertion has more explanatory capacity, since he also acknowledges the possibility of governments acting as “anti-role models” that generate public rejection (2005, 110–11, 113). The credibility of governments is then shaped by the consistency of their practice:

Simplistic exhortations for people to resist consumerism are destined to failure. Particularly when the messages flowing from government are so painfully inconsistent. People readily identify this in contradiction and perceive it as hypocrisy. (2009, 11)

Further disturbing the ground for the study of the policy role of commercial buildings, Jackson relates “practice” to “discourse” to propose that “pro-environmental behavioural change needs to occur by raising specific behaviours from the level of ‘practical consciousness’ to ‘discursive consciousness’...tackling entrenched routine and habitual behaviours” (2005, 116-117). Social learning, and hence the reproduction of practice, occurs not only through repeated interaction, but through interaction with a consistent practice:

Government behaviour plays a strong functional and symbolic role in social learning processes. Unsustainable public sector behaviour can undermine pro-environmental information and awareness campaigns. But conversely, robust and successful environmental management and procurement programmes send a strong signal to businesses and consumers and demonstrate that the Government is serious about pro-environmental change. (2005, 132)

Although Jackson grants fundamental relevance to the anti-role model produced through inconsistent practice, his explanation leaves unclear what consistent practice is. He is explicit about the relevance of coherence between narratives and practices, and implies – as in the above quote – the need for *integrating* energy-saving practices across different domains of practice, and across different government agencies.

As opposed to the dominant approach to government buildings (Section 2.3), the theoretical claims of Jackson, based on learning and practice theory, grant fundamental relevance to the “consistency” of the government message. This enables a critical review of singular exemplars of demonstration, or isolated procurement programs – like those discussed in Section 2.3 – which, being *coherent* with the narratives of governments are not intended to be *integral* part of their practice.<sup>12</sup> Supporting these arguments, in the following section I describe the empirical engagement with everyday meaning-making in the domains of corporate responsibility and renewable energy acceptance as potentially contributing to increasing the consistency of practice of organisations.

## 2.9. Pluralist engagement in flanking disciplines

This section describes empirical evidence from two disciplinary approaches to the energy saving practice of organisations, where – as opposed to the case of energy saving in commercial buildings – significant attention is paid to the public appraisal and acceptance of organisations and programs.

The recent deployment of renewable energy infrastructure,<sup>13</sup> including wind farms and solar parks has faced different degrees of public opposition, making “[p]ublic acceptance...crucial for successful implementation of [these] technologies in society” (van Rijnsoever et al. 2015). Countering the trend with buildings, where most research is either theoretical or based on expert reviews, the relevance of public acceptance has resulted in the empirical engagement of the everyday public: “Most research contributions to the success of RET [renewable energy technology] and related infrastructures focus on the

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<sup>12</sup> A similar understanding seems hinted in the Wuppertal definitions (2014) but, as discussed in Section 2.3, lacks a scholarly reflection that explains how government buildings mediate the reproduction of practices.

<sup>13</sup> Renewable energy deployment is conceptualised as contributing to the energy saving goals of building performance and energy efficiency in EU Directives (2010, 2012).

public, while research on the political elite as decision-maker or stakeholder is less widespread” (Dermont et al. 2017). Similarly, corporate social responsibility scholars focus on how public perception is misled by the practices of organisations represented as socially and environmentally beneficial. The former scholars are concerned that the function of “green buildings”<sup>14</sup> is “reaping legitimacy benefits from gaining symbolic performance” (Bowen 2015, 113), echoing Suchman’s (1995) definition of legitimacy (Section 2.4). As a result, “green buildings...often amount to greenwash” (Burnett 2005, 977). This is common in “high profile commercial or institutional clients and legislated standards in larger typologies [of buildings]” (Chan 2008, 12).<sup>15</sup> Understanding how legitimacy is earned through the representation of energy saving values and practices in commercial buildings is therefore important for corporations concerned about public perception. This provides, as in the case of renewable energy acceptance studies, rich empirical grounds for corporate responsibility studies like those of Bowen and Aragon-Correa (2014), Lyon and Maxwell (2011) and Parguel et al. (2011).

A combination of social and social-psychological theories of behaviour has increased understanding about the social context in the acceptance of renewable energy infrastructure, granting relevance to the public perception of “fairness” (Gross 2007), and to the production of “trust” relations (Walker et al. 2010; Devine-Wright and Devine-Wright 2009). Relying on empirical evidence and social representation theory (Moscovici 1976), a review of studies of renewable infrastructure acceptance explains the relevance of

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<sup>14</sup> I use the term “green buildings” to honour the preferences of these scholars when referring to those (often commercial) buildings that integrate pro-environmental practices. By using this term throughout this section I also acknowledge the disciplinary distance between corporate social responsibility and energy saving studies. However, I recognise, along with with Guy and Moore (2005a), that green credentials are largely reduced to claims about energy efficiency.

<sup>15</sup> These “larger typologies of buildings” widely account for most commercial buildings that represent organizations, and do not exclude large-scale residential developments, which may also be of symbolic value to developers.



the *contradictions* between “doings” and “sayings”, providing grounds for organisations and experts to seek consistent “representations” (Batel et al. 2016; Devine-Wright et al. 2017).<sup>16</sup> Since the ultimate goals are trust, engagement, and acceptance (Devine-Wright et al. 2010; Greenberg 2014), these studies address as a source of evidence everyday meaning making more than the official representation. The production of “trust” can be countered by the “invisibility” of organisations – common in the energy supply industry – which appears as a deterrent to public acceptance, and is problematic because it can be intentional in relation to moderating the potential impact of the image of the organisation regarding salient incidents (Greenberg 2014). This explanation aligns with that of Geels (2010) (presented in Section 2.6) about organisations avoiding engaging with and communicating their practices when concerned that such meaning is not consensual and changing. Social research on renewable infrastructure acceptance recognises everyday epistemologies and the voice of the public in appraising practices of energy saving in the context of the practices of the organisation and its social capital.

Scholars of corporate responsibility also appeal to social theory and empirical evidence in their study of the context of practice, and to help differentiate “legitimate practices” from “greenwashing”. Their critique addresses the fitness between green buildings and accepted social values *as* represented in organisational narratives about buildings.<sup>17</sup> This is important because corporations are concerned about the public and

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<sup>16</sup> “Critically engaging with relevant knowledge producers — policymakers, academic researchers, NGOs, and so forth — to transform re-presentations of individuals as either passive dupes and/or totally rational beings, into representations of individuals as, in their continuous relation with the Other, both influenced and constrained by the contexts in which they live, and as aware, conscious, and active political actors, ... In turn, this will contribute to the creation of more active forms of citizenship that can demand better regulations and policymaking” (Batel et al. 2016).

<sup>17</sup> Greenwashing occurs when “the so-called ‘green building’ has symbolic and material environmental components regardless of whether the building is actually beneficial for the environment” (Bowen and Aragon-Correa 2014)

activists recognising “the gap between what firms say and do”, which is often enabled by the “scepticism” fed by vocal organisational narratives (Bowen and Aragon-Correa 2014). Greenwashing also refers to the “selective disclosure of positive information about a company’s environmental or social performance, without full disclosure of negative information” about analogous practices and practices pertaining to different domains of activity (Lyon and Maxwell 2011)<sup>18</sup>. As introduced in Section 2.8, I refer to these contradictions occurring throughout practices as limited *integration*.<sup>19</sup> A risk of corporate responsibility critiques is that they may deter organisations from conducting legitimate social responsibility and communicating it for fear of attracting the attention of activists (Lyon and Maxwell 2011; Bowen and Aragon-Correa 2014), adding to contempt about shifting understandings (Geels 2010), and the risk of salient incidents (Greenberg 2014).<sup>20</sup> One way to armour organisational narratives is through recognised expert assessment of certification (Bowen and Aragon-Correa 2014; Parguel et al. 2011). Other symbolic components enter into play, such as engaging famous architects (Bowen and Aragon-Correa 2014) or adopting internationally accepted designs – as reviewed in section 2.5. Acknowledging the relevance of the context of practice (its consistency), and giving a name to its contradictions (“greenwashing”) enables scholarly and social critique, providing an invitation for organisations to re-engage with *legitimate* corporate social responsibility.<sup>21</sup>

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<sup>18</sup> Lyon and Maxwell clarify: “Note that greenwash is not the same as having a poor record of environmental performance... Note also that greenwash is not the same as simply failing to report negative information; greenwash involves the additional step of selectively choosing to report positive information” (2011).

<sup>19</sup> As examples, Lyon and Maxwell cite: a) Royal Caribbean claims about wastewater treatment in their cruise ships that did not disclose that only a few of their ships meet this description, and b) BP’s clean fuel initiatives that ignore the impact of extractive activities.

<sup>20</sup> The “thorough activist control” of greenwashing that Lyon and Maxwell claim for firms producing consumer goods has not been found to address the symbolic function of commercial buildings.

<sup>21</sup> The interest of corporate responsibility scholars in “greenwash” recognises the profusion of a legitimating function which – as in the case of “hero stories” about commercial buildings, building credentials and

Accounting for the meaning of practices and narratives in both disciplinary fields hereby reviewed addresses the issue of the “consistency” needed for government legitimacy and credibility (Section 2.8) and highlights the relevance of both *coherence* between narrative and practice and the *integration* of sustainable practices within buildings and other areas of the activity of organisations. As with Jackson’s research on social learning and practice theory, the disciplinary approaches presented in this section bridge social research in topics dominated by expert knowledge of engineering, economics and marketing with the public appraisal of organisational practices. This shows that when specific interests concur, everyday meaning-making is engaged, countering the dominance of reductionist conceptualisations.

By granting a fundamental role to the practices of organisations as co-producing everyday meaning, social research about both corporate responsibility and renewable infrastructure acceptance create an opportunity to ground the endeavour of organisations to legitimacy on their integral engagement (material and social) with saving energy.

## 2.10. Chapter summary

This chapter has covered a lot of ground, but the following findings are the most crucial. Foremost, as exposed in Section 2.1, there is a predominance of positivist knowledge and methodologies that frame energy saving practice as the economic adoption of technologies. By way of a critical review, in Sections 2.2 and 2.3 I have sought to reveal the disciplinary separation between research on residential and government buildings. The role of the latter in the production of meaning appears to be reduced to providing information about the techno-economic potential for saving energy (Jaffe and Stavins 1994), and is thus aligned

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reductionist conceptualisations (Janda and Topouzi 2014) – serves to selectively disclose information (see also Guy and Moore 2005).

with findings from Section 2.1. However, I find common a tacit recognition of everyday epistemologies in the conceptualisations of the socially transformative role of commercial buildings (Borg et al. 2006; Harris et al. 2005; Wuppertal Institute 2014; Thomas et al. 2013). Failure to recognise these non-economic, non-market effects risks further legitimating the dominant positivist framework. The tacit nature of this recognition would be explained by the dominance of techno-economic knowledge and the insufficient theoretical grounds to explain meaning making (Wilhite 2010; Shove and Pantzar 2005; Ingold 1999, Verbeek 2005).

As reviewed in Sections 2.4 and 2.5, the marginalization of meaning in applied research appears related to the dominance of positivist epistemologies, techno-optimistic narratives and formalist architecture. These serve to legitimate the dominant framing, technological practices and their proponents by hailing successes and hiding underachievement, de-politicising the energy saving discourse and contributing to the alienation of the public (Lutzenhiser 2014; Moezzi and Janda 2014; Janda and Topouzi 2015).

The potential for engaging organisations in attempts to compel the public to save energy and furthermore for the re-politicisation of the energy saving debate is discussed in Section 2.6 and developed throughout Sections 2.7 and 2.9. These sections show that the pursuit of legitimacy motivates organisations to enact energy-saving practices. However, these may not bring about the necessary recognition, whilst creating risks associated with changing social priorities and the emergence of negative information when companies are in the spotlight (Geels 2010; Greenberg 2014; Lyon and Maxwell 2011; Bowen and Aragon-Correa 2014). Throughout these sections I have also built the case that there is potential for practice and ethnographic research to empirically engage with the meaning

made by non-user publics through their experience of buildings. This expands claims by Lutzenhiser (2014) Geels (2010), Guy and Moore (2005b), about the need of a pluralist engagement of the public but which do not specify the nature of the public. The limited research on this topic can be explained by understanding that ethnographic research, particularly as regards the energy saving topic, reacts to positivist dominance by relying on post-structuralist explanations of official narratives (Dutton and Mann 1996), and hence overlooks the visual dimension of practice in favour of a focus on use. This appears to be the case of practice theorists like Wallenborn and Wilhite (2014) reviewed in Section 2.7.

Taking into account the findings of pluralist research conducted within the fields of social learning, corporate responsibility and renewable energy infrastructure acceptance (Sections 2.8 and 2.9), I identify the potential for consistent practices to add credibility to the message of organisations, to increase acceptance of their practices, and to improve their public image. Accordingly, I understand that *consistency* implies recognising the need for both *coherence* between narratives and practices and the *integration* of practices throughout the activities of the organisation to create credible messages. Since these concepts appear either implicitly or unclearly differentiated throughout the literature that has been reviewed (Jackson 2005, 2006, 2009; Bowen and Aragon-Correa 2014; Lyon and Maxwell 2011; Parguel et al. 2011; Gross 2007; Devine-Wright et al. 2010; Greenberg 2014), they need further theoretical development and empirical grounding. Particularly problematic issues include references to *innovation* which I find common in government building policies (Section 2.3), because these appear to contrast with the *integration* that is proposed and the eventual *replication* of practices pursued by energy saving policies. In addition to aspects of material integration of practices, aspects of social integration also require further clarification.

Expanding the tacitly recognised role of buildings in co-producing meaning and practice of energy saving, the work of Janda and Topouzi (2015) could serve to foster a radical critique, as well as to push organisations to produce a consistent practice and, ultimately, a consistent message. The findings of these authors are based on a textual review, but tacitly acknowledge the consistency of practice when recommending that organisations shift their narratives from “hero stories” to “learning” and “caring stories” (2015) when shaping their relationship with the public. There appears to be a potential for incorporating the consistency of practice as part of a *caring* and *learning framings* where organisations become accountable for the extent they integrate practice and therefore contribute to the credibility of the energy saving message. This approach would thus involve transforming the practices of organisations, as well as their relations with the public, which may then be enabled to engage in critique based on an appraisal of contradictions and the extent that buildings contribute to the public good. Hence, the former produces a fundamental transformation of social relations necessary to attain significant energy savings – as defended by practice theorists (e.g. Shove 2010, Shove and Walker 2014). It also provides an opportunity to re-politicise energy saving practice – defended by critical reviewers of energy saving and EU policy-making (Section 2.6). Relying analytically on the types of stories proposed by Janda and Topouzi (2015) provides a new opportunity for critique, but also for organisations to shift away from seeking legitimacy through empty-of-meaning conceptualisations, practices, and buildings, and to build social capital through demonstrating the consistency and socially transformative potential of their practices; i.e. their meaning. As shown throughout this chapter, this requires privileging the interpretive study of public appraisal over official representations.

The goal of the following chapter is to formulate a theoretical framework that addresses the role of consistent – and contradictory – practices in the processes of meaning-making and of practice (re)production.

## Chapter 3. Re-cognising the epistemological and political roots of the problem

In this chapter I develop a theoretical framework inspired by Lefebvre's work on "The Production of Space" (1991).<sup>22</sup> This serves a) to increase understanding that official representations of and about commercial buildings are de-contextualised, b) to re-cognise the everyday production of meaning and practice and, ultimately, c) to critique official representations for their marginalization of the context of meaning-making and practice. It thus contributes to the *study of the* relations between official framings and everyday meaning-making, constitutive of my main research question. I have chosen to engage the production of space because it addresses the roots of how and why meaning is marginalized in contemporary policies, practices, and research; and for granting a fundamental role to commercial buildings in the (re)production of social order. Lefebvre's production of space constitutes a radical critique in the Marxian sense: it seeks to reveal the epistemological and political *roots* of the marginalization of everyday meaning. As shown in Chapter 2, addressing these roots could potentially turn on its head energy saving research and policy-making to address their limitations and political flaws.

Potential arises from Lefebvre's theory of the production of space because it upends political economic approaches by incorporating *Space* as the medium, not just the outcome, of governance processes (Soja 1996, 77). A legitimate question for Lefebvre is "Do the spaces formed by practico-social activity, whether landscapes, monuments or buildings, have meaning?" (1991, 131). This resonates with my interest in the attention being paid to

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<sup>22</sup> The original edition of "The Production of Space" (in French) dates from 1974. It was first translated into English in 1991. This is the most often cited edition in the English literature. For reasons of brevity, I refer to it as "Lefebvre 1991".



commercial buildings as mechanisms mediating the production of meaning that could potentially compel the public to save energy. The relevance of applying this theory to a study partly motivated by the unclear rationale of EU policies is furthered by its capacity to explain political economic processes that involve a decline in accountability in the EU (Elden 2004).

The ontology and epistemology of Lefebvre, which I present in Section 3.1, constitute a critique of established knowledge that potentially addresses the epistemological barriers to acknowledging *meaning-making* as mediating the reproduction of practice, problematized in Chapter 2. The former appeals to the contradictions that occur between official representations of practice – where meaning-making is marginalized –, and everyday epistemologies – which appeal to the unicity of material, social and conceptual dimensions of practice. These contradictions ground Lefebvre’s political critique, as I describe in Section 3.2. Aligned with social practice theories, as described in Section 2.7, Lefebvre understands that the production of a practice requires changes that go beyond the technological and conceptual domains and encompass social transformation. The marginalization of meaning serves for elites to mask the enactment of a consistent practice, reaping legitimacy for the established order, and hence diverting attention from the need for social transformation.

The explanation of these epistemological and political roots creates the ground for explaining in Section 3.3 the special attention that Lefebvre pays to the representations enacted in commercial buildings (i.e. “monuments”) as countering the production of an “appropriate” practice. This conceptualisation addresses scholarly concerns about the legitimating function and public-alienating effect of energy-saving practices in commercial buildings, as expounded in Chapter 2. It also resonates with my interest in re-cognising the

role of buildings in reproducing practices that goes beyond the provision of textual and quantitative information. Section 3.4 closes the chapter with my reflections on the conceptual, political and analytical implications of the theoretical framework that is proposed for the purpose of potentially encompassing siloed critiques and improving interpretive research in relation to theorizing how meaning-making occurs, and mediates the reproduction of practice.

### **3.1. The unicity of practice**

A fundamental epistemological problem for Lefebvre is the separation between “object” and “subject”, originating in Cartesian theory: “philosophy stopped dead when it came face to face with the ‘subject’ and the ‘object’ and their relationship” (1991, 96). This epistemological separation is perpetuated by epistemological debates between idealists who “fetishize” text and empiricists who “oversubstantiate” the object (Soja 1996, 63; see also Lefebvre 1991, 27-30). These positions and their unsolved debates contribute to “[t]he illusion of a transparent, ‘pure’ and neutral space — which, though philosophical in origin, has permeated Western culture — [and] is being dispelled only very slowly” (Lefebvre 1991, 292; see also Dutton and Mann 1996, 38; Guy and Moore 2005a, 5, in Section 2.5). This claim is relevant in the scope of this research because, as shown in Chapter 2, most approaches to commercial buildings rely on post-structuralist text analysis and positivist quantification, granting prevalence to official representations, and – as shown in section 2.7 – reducing the role of the public to “user”.

Contesting these epistemological positions, the ontological entity for Lefebvre is “social practice”, or simply “practice”. Lefebvre is particularly interested in re-appraising

the lived and social dimension of spatial practices, which he considers to have been marginalized by the dominance of the conceptual knowledge of experts.

Like all social practice, spatial practice is lived directly before it is conceptualised; but the speculative primacy of the conceived over the lived causes practice to disappear. (1991, 35)

Practice is produced in the dialectics between three ontological “moments”: the “material” (“Spatial practices”), the “mental” (“Representations of Space”) and the “social” (“Representational spaces”); each of which belong *simultaneously* to the epistemological realms of the “perceived”, “conceived” and “lived” (1991 33-38; Soja 1996, 65). Meaning is produced through everyday lived experience, thus it is through a “critique of everyday” that the radical philosopher can appraise the consistency of practice in its dialectical production, and through its contradictions formulate a political critique (Lefebvre 1991, 333). The dialectic interaction between the ontological and epistemological modes implies that meaning, as produced in everyday life, accounts for the material, conceptual and social dimensions of practice. Heuristically, I describe the ontology and epistemology of Lefebvre with two large triangles in Figure 1, wherein meaning and practice are produced through the dialectical relation between “moments” (the small triangles) in both modes of production.

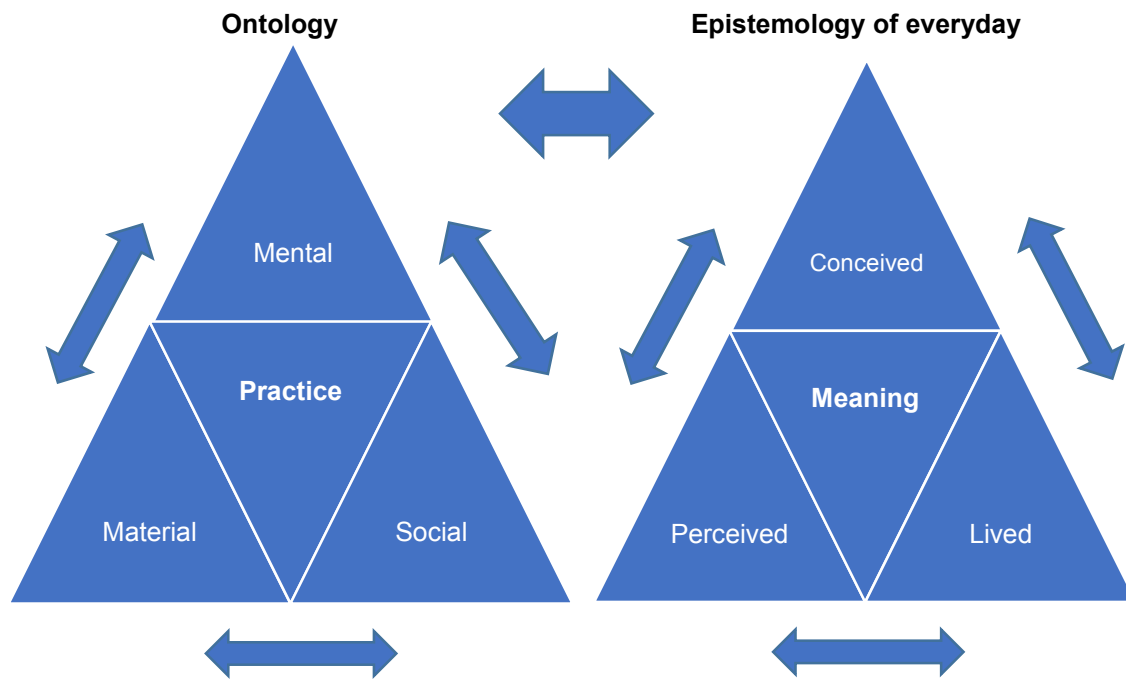


Figure 1. The epistemological and ontological (re)production of practice. Inspired by Lefebvre (1991).

Since meaning-making occurs through living interaction with practice, in its material, conceptual and social unicity it resonates with the claims of some practice theorists about meaning occurring only in a context of practice (Shove and Walker 2014; Wallenborn and Wilhite 2014), as described in Section 2.7. Lefebvre goes a step beyond this by incorporating “the context” in practice, and to its ontological, epistemological and political modes of production, thereby enabling a critique of its contradictions. Regardless of these contradictions, there are logical mechanisms that explain the everyday appraisal of inconsistent practice as “coherent” – i.e. what I term as “consistent”, to differentiate from “coherence” between narrative and practices in Section 2.9:

[T]he lived, conceived and perceived realms should be interconnected, so that the 'subject', the individual member of a given social group, may move from one to another without confusion – so much is a logical necessity. Whether they constitute a coherent whole is another matter. (1991, 40)

Thus, through this logical mechanism the everyday meaning-making of practice relates to the ontological unicity of practice in its mental, material and social domains. A conceptualisation of practice inspired by Lefebvre's production of space contributes to structuring what practice theories refer to as the context of practice. Lived experience needs to be recognised as a mechanism of meaning making, currently dominated by perceptual and conceptual meaning-making, and ultimately concealing the contradictions of practice. These contradictions underlie the political function of practice, which I describe as the political mode of production of elites.

### **3.2. The political function of representations**

According to Lefebvre, socio-political systems need to produce their "own", characteristic practice "to be real". This practice needs to be consistent throughout its spatial dimensions:

[E]very society produces a space, its own space.... Any 'social existence' aspiring or claiming to be 'real', but failing to produce its own space, would be a strange entity, ...and sooner or later disappear altogether, thereby immediately losing its identity, its denomination and its feeble degree of reality. This suggests a possible criterion for distinguishing between ideology and practice ... and for discerning ... what they reveal versus what they conceal). (1991, 53)

As a result, the duality between ontological and epistemological modes of production as introduced at the end of Section 3.1 is incomplete as it fails to address the political utilization of space. Acknowledging that everything has a third dimension in Lefebvre's theory, as claimed by Soja (1996, 61), I decided to explicitly incorporate the mode of production that for Lefebvre is a socio-political system (Figure 2). This grants the central role that commercial buildings play as "monuments" in Lefebvre's work – which I review

in Section 3.3. It also serves to resolve fundamental terminological confusion originated in Lefebvre's establishment and denial of dual relations between: a) material and "spatial practices"; b) mental and "representations of space"; and c) social and "representational spaces". Differentiating the two groups of terms permits distinct reference to a third mode of production involving the political utilization of spatial practices by elites through expert knowledge and the forces of state and capital. For Lefebvre this elite mode of production overrides the ontological space. Explicit distinction between the three modes of production, is important because in the literature I have reviewed, no explicit nor graphic account of these three modes of production was identified. Moreover most reviewers have simplified the use of terminology, opting for the terms belonging to one of the modes of production or using the terms belonging to different modes indistinctly.

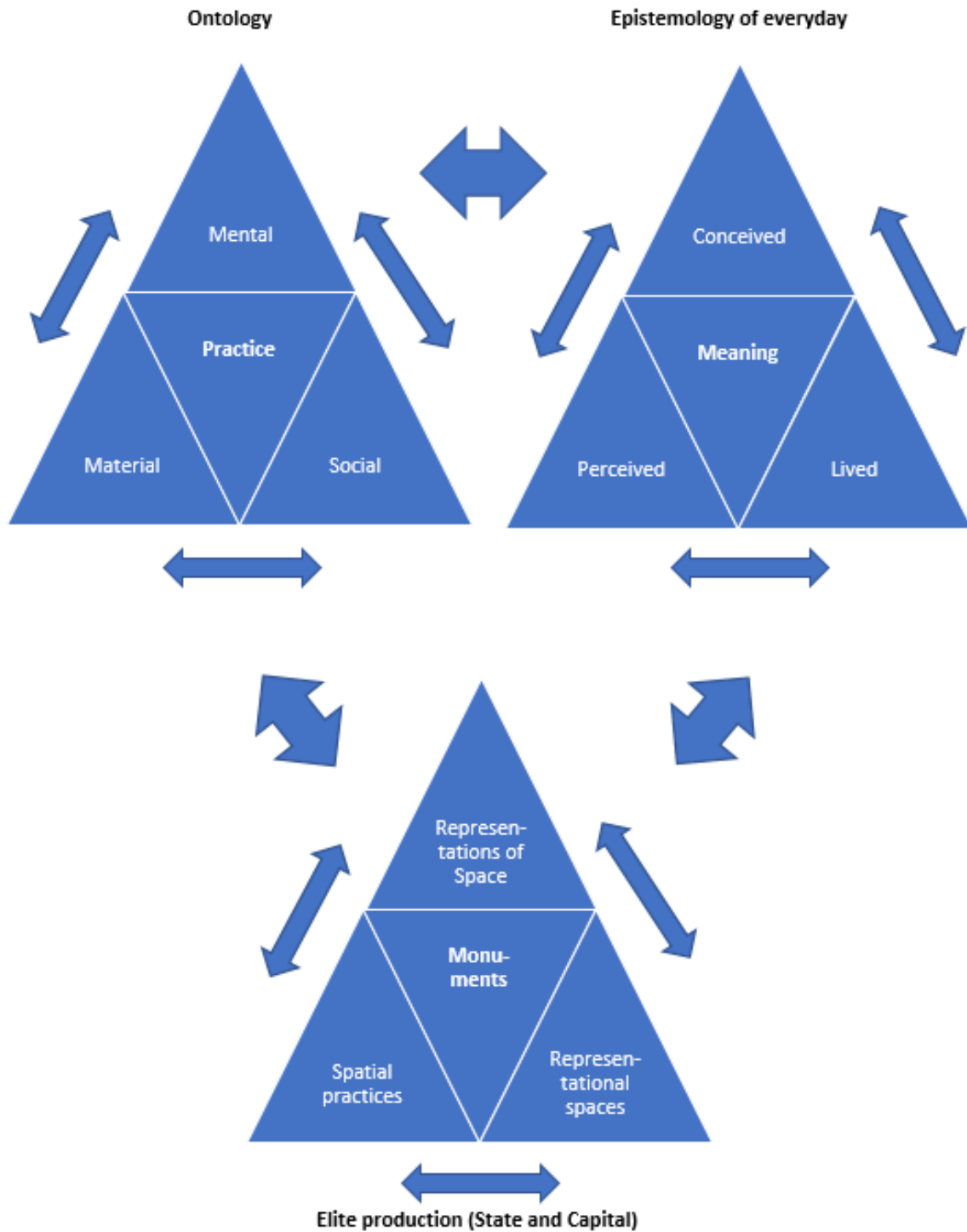


Figure 2. Incorporation of the elite production of practice into Lefebvre's triadic dialectics. Inspired by Lefebvre (1991).

The dialectics between these three modes of production of practice serve to explain how and why (spatial) practices are devoid of everyday meaning. Responding to the need for a socio-political system to produce an “appropriate” practice to be able to exist, it is in

the interest of governments, corporations and other organisations to foster an “illusory coherence” (1991, 59, 393) and conceal the “contradictions” of a society, which are a manifestation of the social domination in place (Lefebvre 1991, 333, 367). Concealing contradictions hinders the production of meaning because the everyday dimensions of meaning-making are assimilated to elite representations: namely, a) the *mental* to conceptual representations of space – i.e., the knowledge of experts b) the *social* to representational spaces of participation, representation and institution; and c) the *material* to spatial practices of technology, planning and architecture.

a) Conceptual (representations of space)

As shown in Section 3.1, for Lefebvre conceptual knowledge of contemporary positivist epistemologies is the primary mechanism for marginalizing everyday meaning. The quantitative knowledges of science, technology, politics and economy “reduce the dialectical to the logical”, granting a “logical coherence” to the production of practice (1991, 367), and “disguising domination” (1978/2003, 84-85). This rational knowledge marginalizes what Wallenborn and Wilhite refer to as the “tacit knowledge” that is produced through everyday experience (2014), or meaning.

[T]he speculative primacy of the conceived over the lived causes practice to disappear along with life, and so does very little justice to the 'unconscious' level of lived experience per se. (Lefebvre 1991, 35)

As in the case of policy instruments intended to compel the public to save energy, meaning is reduced to quantitative, economic information applied to inform rational decision making (Section 2.2). Together with quantification, the prevalence of textual and verbal representations (Lefebvre 1991, 39) further hinders perception and living experience, and



limits the possibilities for critique. In agreement with the cultural reviews of architecture presented in Section 2.5, Lefebvre attacked post-structuralist critique for its reliance on the conceptual and textual, and for leaving unaddressed the political function of spatial practice (1991, 4).<sup>23</sup>

b) Social participation, representation and institution (representational space)

For Lefebvre, social relations are *represented* through processes of “participation”, “representation” and “institution” that result in the alienation of citizens (Lefebvre [1978] 2003, 99). The socially transformative capacity of these processes is deceptive because they depart from a conceptual consensus based on the knowledge of experts; i.e., a “banal consensus” (1991, 6):

...a reductionistic [sic] return to an absolute - or supposedly absolute – knowledge... can only be conceived of as separate from both ideology and non-knowledge (i.e. from lived experience). Although any separation of that kind is in fact impossible, to evoke one poses no threat to - and indeed tends to reinforce - a banal ‘consensus’.

After all, who is going to take issue with the True? (1991, 6)

For Lefebvre, these social processes contribute to an illusory democratization, but not to transforming social relations because the debate is foreclosed by the consensus that surrounds expert knowledge. This resonates with critical reviews of environmental governance and of the EU presented in Section 2.6 that claim that deliberation is closed

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<sup>23</sup> “Foucault never explains what space it is that he is referring to, nor how it bridges the gap between the theoretical (epistemological) realm and the practical one, between mental and social, between the space of the philosophers and the space of people who deal with material things” (Lefebvre 1991, 4).

out by the dominance of an expert jargon rich in conceptualisations that are empty of meaning and which define the political agenda.

c) Technologies, planning and architecture (spatial practices)

Spatial practices are reduced to the perceptual domain through the conceptual knowledge of experts:

...architects and city-planners offered – as an ideology in action – an empty space ... a neutral medium ... incoherence under the banner of coherence ... within an appearance of logic. (1991, 308-9)

Grounded by dominant epistemological assumptions about the transparency of the object (Sections 3.1), expert knowledge serves the purpose of conferring coherence to space, obscuring its political utilization under a cloak of claims about rational purpose and aesthetic form:

The dominant discourse on space – describing what is seen by eyes ... – robs reality of meaning by dressing it in an ideological garb that does not appear as such, but instead gives the impression of being non-ideological (or else 'beyond ideology'). These vestments, to be more specific, are those of aesthetics and aestheticism, of rationality and rationalism. (1991, 317)

In Section 3.3 I further reflect on Lefebvre's warnings about the political use of aestheticism – which I have previously referred to as formalist architecture (Section 2.5) 3.

Thus, positivist, rational assumptions reduce practice to its perceived epistemological dimension, which can be then reduced to quantifiable dimensions: “Things and products that are measured, that is to say reduced to the common measure of money,

do not speak the truth about themselves” (Lefebvre 1991, 80). This is problematic because it conceals the social domain of practice and, overall, contradictions in practice. However, techno-optimist accounts of progress succeed in representing the occurrence of positive social transformation in an illusory way:

...so long as the only improvements to occur are technical improvements of detail ... must the project of ‘changing life’ remain no more than a political rallying-cry to be taken up or abandoned according to the mood of the moment.  
(1991, 59-60)

With this critique, Lefebvre invites us to mistrust technological-reductionism. Aligning with critiques discussed in Chapter 2, the problem with energy efficiency and other technological practices is their disregard of the social transformation necessary for substantially saving energy – and furthermore, the creation of the illusion that such change is occurring (Shove 2010; Lutzenhiser 2014; Shove and Walker 2014).

Lefebvre’s critique serves to explain how and reductionist accounts of energy saving values, practices and commercial buildings as responding to political interests, and contribute to reproducing dominant practice. His theory helps understand calls for increasing *coherence* between official narratives to build *credibility* for the energy saving values, practices and claims of organisations, and to incorporate social and material integration of practice (Sections 2.8 and 2.9) to what I have termed as practical *consistency*. Accordingly, everyday meaning-making and reproduction of practice is countered by the prevalence and political utilization of expert conceptualisations, material practices, and social mechanisms of representation that, as discussed in Chapter 2, are common in energy saving policy and practice. The former constitute an illusory representation of a consistent

practice, contributing to the legitimation of the knowledge of experts and organisations. In the following section I show how commercial buildings play a fundamental role in producing an illusory consistency of practice.

### **3.3. Commercial buildings as monuments**

Commercial buildings are fundamental to understanding the reproduction of the established order through the Lefebvrian elite mode of production. They represent the triumph of elites, and hence of the social order in mastering quantitative knowledge and technology through “geometric” and “phallic” designs (Lefebvre [1978] 2003, 84-85); they are “visibly” and “centrally” located in cities to represent and furthermore legitimate social domination by governments and corporations ([1978] 2003, 88; 1991, 143-144, 220). They constitute “monuments” which “mask the will to power and the arbitrariness of power beneath signs and surfaces which claim to express collective will and collective thought” (1991, 144). Thus, they conceal contradictions and contribute to legitimating organisations along Suchman’s (1995, 574) understanding of the term: for abiding by accepted values. To ensure that the values thus represented as non-ideological and hence indisputable, monuments rely on the “vestments... of aesthetics and aestheticism, of rationality and rationalism” (Lefebvre 1991, 317). The latter aligns with concerns about the prevalence of high-rise designs and glazed facades over vernacular designs and the practices that would make visible the energy saving (Winter 2016; Wilhite 2010; Pich-Aguilera 2012). Through these de-politicising mechanisms, such monuments enact the “illusion of transparency” to become “indisputable normative precept[s]” (Lefebvre 1991, 59-60), normalizing the social order in the “unconscious level of lived experience” (1991, 35). Similar to the greenwashing practices reviewed in Section 2.9, commercial buildings are “intended to be read”, since practice is “enacted” in them (Lefebvre 1991, 222, 224). The legitimating

function of commercial buildings is therefore a de-politicising one. Enacting socially accepted values of energy saving appears to organisations as a desirable means of avoiding public scrutiny, since – as argued in Section 3.1 – dominant contemporary epistemologies are better equipped to address text than practices.

In Section 3.2 I have showed how the Lefebvrian elite mode produces an “illusory coherence” throughout its conceptual, social and material domains. However, monuments are the masterpiece in the production of an *illusory consistency*:

Monumental space offered each member of a society an image of that membership, an image of his or her social visage. It thus constituted a collective mirror more faithful than any personal one....The monument thus effected a 'consensus', and this in the strongest sense of the term, rendering it practical and concrete. (1991, 220)

Monuments produce the illusion that certain practices are *integral* part of the practice being produced by elites. This also resonates with some critiques that greenwashing narratives misleadingly create this illusion (see Lyon and Maxwell 2011 in Section 2.9). The intent – as explained by Lefebvre – is not to produce a consistent representation of the organisation, but of the practice of the society, and hence of the success of the social order in relation to abiding by certain values. There is a need to study the difference between buildings that respond to “use” and monuments, which respond to a political “function” (1991, 100):

Buildings are to monuments as everyday life is to festival, products to works, lived experience to the merely perceived, concrete to stone, and so on. (1991, 223)

There is therefore the potential to study commercial buildings according to their *coherence* in practice, as well as to the *integration* of the practices being represented – within the domain of the organisation and that of overall society. The study of organisational reliance on singular exemplars of demonstration fostered by government policies (Section 2.3) brings about an opportunity to study how monuments produce the *illusion of coherence* – between the narrative, material and social domains of practice – but also of *integration* – in organisational and societal practice – and overall, of the deployment of a *consistent* practice. The Production of Space brings about a potential to recognise buildings as political, and to criticize them according to the illusions they produce in everyday meaning-making. This requires, aligning with findings in Chapter 2, a pluralist study of the contradictions between the practices of energy saving and the (context of) practice as experienced by the public user and non-user, both through “passive (senses) and active (labour) engagement” (1991, 405).

### **3.4. Conceptual and analytical implications**

In this chapter I have argued that Lefebvre’s Production of Space constitutes – aligning with Soja (1996) and Schmid (2008) – a critique that is potentially able to turn on its head the prevalent approach to commercial buildings and to understand them as a means, not just an end, to energy saving policy-making and governance.

Foremost, Lefebvre’s epistemology, which I present in Section 3.1, counters the dominant positivist knowledge and post-structuralist critique problematized in Chapter 2. It recognises the context of practice to which some practice theorists appeal as the site of meaning-making and practice reproduction (Section 2.7) and explicates it as structured in its social, material and mental dimensions. In doing this, Lefebvre inspires a theoretical

framework which adds to the interest of practice theory in the *repetition* of experience (Wallenborn and Wilhite 2014), interest in social learning about *coherence* between narratives and practices (Jackson 2009), which Lefebvre extends to the social domain of practice. Incorporating this domain potentially enables us to re-cognise the legitimating function of energy-saving practices (Geels 2010) and the relevance of the social relations of the organisation (Devine-Wright et al. 2010; Greenberg 2014; Gross 2007) in the appraisal of official practices of energy saving. Accordingly, the public appraisal of contradictions in everyday practice may explain public alienation from saving energy as a response to the lack of credibility inherent in contradictory messages (Jackson 2009).

Lefebvre's political critique, discussed in Section 3.2, reunites the approach of reviewers of energy saving conceptualisations, narratives, and technological practices as deployed in commercial buildings reviewed in Chapter 2. The latter operate as *representations* that marginalize everyday meaning-making, creating an *illusion of coherence*, and countering critique. The political function of representations consists of reproducing the established order by producing the illusion that practice is consistent, specific to the politico-economic regime, and hence appraised as "real" (1991, 53) and "appropriate" (1991, 59). Changing this situation requires a critique of everyday that re-appraises practices in context through lived experience and recognises their political function, requiring "study [of] the contradictions" in and within material, social and mental representations (Lefebvre, 1991, 333).

To recognise space, to recognise what 'takes place' there and what it is used for, is to resume the dialectic; analysis will reveal the contradictions of space. (1976, 17)

This approach can potentially inspire scholarly and civil critique, as well as policies appropriate for compelling the public to save energy and re-contextualise practices in pursuit of *appropriating* a practice of energy saving; one that is appraised in everyday life as consistent, credible and potentially reproducible by the public. Hence, it resonates with appeals for organisations to produce a practice of *caring* and that promotes *learning* amongst the public, as proposed by Janda and Topouzi (2015). Furthermore, it potentially permits to expand the understanding of caring stories by incorporating consideration to the extent of coherence and integration of practice within the organisation. The application of my research is recognition of the need to assess the dominance of technological practices, the extent to which practices are decontextualised, as well as the situated interests of organisations in fostering their social positioning and public image.

Inspired by Lefebvre's interest in commercial buildings as *monuments*, in Section 3.3 I understand their role in representing energy-saving practices, values and social relations as a *coherent* and hence appropriate practice of energy saving. In my interpretation, monuments also represent energy-saving practices as an *integral* part of the practice of commissioning organisations, similar to some greenwashing narratives, as argued by Lyon and Maxwell (2006), hence contributing to an *illusory consistency*. The extent to which integration occurs, and especially its relevance for everyday meaning-makers, needs to be studied, particularly in the light of the prevalent interest in singular, innovative exemplars in government policies (Section 2.3). This is important regarding the legitimating function of energy-saving practices (Swyngedouw 2010, 2011) and, particularly, commercial buildings. These represent organisations as *heroes*, thereby alienating the public and disregarding the socially transformative potential of *caring* and *learning* representations – which are restricted to narratives in the work of Janda and



Topouzi (2015) – and could benefit from incorporating attention to the consistency of practice. Such could also be the case of EU directives that require an exemplary function, as problematized in Chapter 1, and which fail to refer to the context of the regulated buildings.

There is potential for studying the *consistency* of practice represented in commercial buildings along the dimensions of coherence and integration, as appraised in everyday life. Conceptually, this involves differentiating energy-saving practices as representations – which can be deployed in monuments – from practices that are consistently constitutive of an appropriate practice. A radical critique inspired by Lefebvre’s work requires the study of everyday meaning-making through “passive (senses) and active (labour) engagement” (1991, 405), potentially overcoming the current critical focus on official narratives, whereby the public is marginally engaged, and mostly as users – see Sections 2.5 and 2.6. Sustained with empirical evidence, this theoretical approach to the *production of practice* provides an opportunity to foster the application of practice theory, thereby acknowledging the need for social transformation to promote substantial energy saving (Section 2.7). This is important, because the “potential” for saving energy through the application of practice theories is significant, but the “feasibility” is wanting (Stern 2017). Feasibility may be fostered through increased scholarly and civil recognition of the political function and the epistemological value of commercial buildings, and by making organisations accountable for the extent that their practice fosters the production of a meaning and a practice of energy saving.

# Chapter 4. Methodology for studying official and everyday framings

In this chapter, I outline the analytical and methodological approach used in this dissertation. I first defend the choice of interpretive mode of policy analysis as suitable for filling the empirical gap and responding to the disciplinary, epistemological and political issues presented in Chapter 2 and put forward in Chapter 3. Second, I expound my reflections on the methodological choice. Third, I justify the choice of four commercial buildings in Barcelona as case studies, and explain their distinctive features. Fourth, I recount the process of accessing evidence sources, as well as the techniques that were used: document review, direct observation, and interviews, both with public experts and laymen. This occupies Sections 4.4 through 4.7. Fifth, I explain how I processed and interpreted the sources of evidence. Finally, I reflect on how the combination of techniques and sources of evidence responds to the problematique addressed in this research.

## 4.1. Interpretive (policy) analysis

The choice of analytical framework was informed by the need to overcome the gap left by positivist epistemologies – those focused on the quantifiable – and post-structuralist critiques – those focused on text. These ground the assumption that commercial buildings are “transparent”, hence disarming the possibility of critique and hindering the possibility of using buildings as a means of positive social transformation (Lefebvre 1991, 292, 59-60; Guy and Moore 2005a, 5). To address the dual purpose of this research – informing policy and critique – it is necessary to re-appraise how meaning is co-produced through everyday experience with buildings. In engaging with a constructivist epistemology, what is of interest are not authoritative claims – for instance, how much energy is being saved,

or how an organisation cares about the environment – but how the appraisal of practices shapes local knowledge and practice. This approach involves a “critique of positivist epistemology and ontology, in which positivist claims concerning both the objective nature of reality and the ability of science to discern that reality are rejected” (Fox 2008, 660).

This research constitutes an effort to combine two approaches often separated in the production of scholarly knowledge: “an interpretive stance aiming for understanding” and a “pragmatist stance aiming for constructive knowledge that is appreciated for being useful in action” (Goldkuhl 2012). Bridging these approaches requires pluralist engagement with a diversity of actors and understandings of sustainability and energy saving, making it necessary to foster a pluralist engagement of the public in the production of knowledge and of the practice of saving energy in buildings (Guy and Moore 2005b). Re-appraising how different publics interpret buildings appears to be a fundamental means of critiquing organisations and thereby making them accountable for how their buildings shape meaning and practice, overcoming the risks of illusory representations that speak about consistent practice as argued by Lefebvre (1991). Thereby, it contributes to counter the reproduction of the social practice in which current practices are embedded (Shove 2010; Shove and Walker 2010, 2014; Wilhite 2013).

Interpretive modes of policy assessment (IPA) (Yanow 2007, 2009, 2013b, 2013a; Wagenaar 2011; van Hulst and Yanow 2014) acknowledge commercial buildings as “artefacts”, or what I term “representations” which “frame” a policy problem.<sup>24</sup> For

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<sup>24</sup> Countering the expectations associated with the name, interpretive policy assessment is not restricted to the study of policy. As van Hulst and Yanow (2016) acknowledge: “the distinctions between government action and actions of others have become more and more interrelated...the ‘playing field’ has become increasingly crowded with framers and situations to frame”.

interpretive researchers, “physical artifacts are a form of deed: a nonverbal enactment of underlying values, beliefs, and feelings, which they represent” (Yanow 2013b, 46). Together with the study of different “naming”, the study of framing in official representations and the narratives of the public exposed to these representations permits the study of how an understanding of the problem – as fostered by official representations – “migrates” (van Hulst and Yanow 2014).

Adding to the pertinence of applying IPA to this research, the former scholars recognise that “meaning-oriented approaches are characteristic of space studies” (Yanow 2013b, 43). For these scholars, meaning is context-dependent (Yanow 2013a, 2013b, 2007; van Hulst and Yanow 2014), meaning that research oriented by this approach is able to address the context of practice – an idea fundamental to Lefebvre and practice theorists – and to critique the divide between official representations and everyday meaning-making. Further aligned with the need to re-appraise and to re-cognise everyday epistemologies in this dissertation, IPA scholars are concerned about “what is meaningful to people in the situation under study in ways that accurately reflect human knowing processes” (Yanow 2013b, 43). This counters positivistic policy assessment tools that seek generalization through quantification, and mostly depart from survey research when engaging the public, hence failing to incorporate the complex dimension of meaning-making and the migration of frames (Yanow 2007; van Hulst and Yanow 2014).

Increasing the attention paid to meaning-making in policy-making and assessment is necessary in attempts to compel the public to act differently: “interpretation is important not only for its own sake but...for the fact that interpretive schemas typically lead to action along those lines” (Yanow 2013b, 60), hence supporting the policy-informing purpose of this research. Similarly, “[f]raming...does two kinds of work: It organizes prior knowledge

(including that derived from experience) and values held, and it guides emergent action” (van Hulst and Yanow 2014). Aligned with the theoretical framework that is proposed herein, any attempt at re-framing a problem that compels the public to take action needs to be coherent:

[W]hen it comes to acting in practice, plausibility suffices; accuracy is hardly aimed for (if it can ever be achieved). A story, in other words, is ‘good’ when it not only creates a coherent, graspable account but also ‘holds disparate elements together long enough to energize and guide action’. (van Hulst and Yanow 2014)<sup>25</sup>

This call for coherence refers thus not only to narratives, but also to representations that are intended to last, like commercial buildings, as being necessary for changing the energy consumption practices of the public.

Finally, the adequacy of this analytical framework relates to novel interest in the “framing” of energy-saving practices, such as has been called for by social practice theorists such as Shove and Walker (2014). For these scholars, reframing the energy saving problem is deemed necessary for the transformation of practice, both in terms of making significant savings and questioning the social relations that underlie consumption processes. An interpretive engagement with framing potentially incorporates the dialectical dimension that underlies the production of practice that Lefebvre addresses in his theory of the production of space (1991). As claimed by van Hulst and Yanow:

[F]ocusing more on framing than on frames draws attention to dynamic processes...

[This] leads us to see the ongoing work framing entails and the struggles that can

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<sup>25</sup> The partial quote is from Weick (1995, 61). Weick, K. (1995). *Sensemaking in organizations*. Thousand Oaks, CA: Sage.

take place over developing and defending certain ways of framing an issue... What we are talking about here is not just a politics of who gets what, when, and how, but also a politics of who people are or perceive themselves to be. (2014)

Framing therefore implies re-politicising (non-textual) practices as regards their capacity to convey a message, and the meaning made of them.

This use of “framing” also resonates with the interest of critical discourse analysts in policies as “problematizing activities” (Bacchi 2009, 2), which also acknowledges buildings and other non-textual practices as “sites of knowledge formation and operation” (Bacchi and Bonham 2014). However, the interpretive approach hereby proposed sidesteps the theoretical debates that hinder the capacity of discourse analysis to engage with the study of materials and actions as “discursive” and which rely on scholarly assumptions.<sup>26</sup> Instead, IPA privileges the everyday formation of knowledge, granting voice to public making meaning, and countering the dominance of scholarly knowledge. It involves an act of “intervening to improve a situation—the aim of assisted reframing—which requires making implicit, tacitly known frames explicit” (van Hulst and Yanow 2014).

The interpretive mode of policy assessment that is proposed facilitates the operationalization of the study of the relationship between official representations and the everyday production of meaning as a means of understanding the (re)production of energy saving practice. This operationalization is summarized in Table 2. Incorporating “framing” into the empirical questions engages the context of practice where meaning is produced, and the study of how framings migrate from official representations to everyday narratives. It also enables study of the contradictions between different official representations

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<sup>26</sup> See more about these debates, for instance, in Fairelough 2005; Bacchi and Bonham 2014, Bacchi 2009; Bacchi 2015; Liggett 2003; Laclau and Mouffe 1985.

(narratives, buildings), and between these and public narratives with regard to how they include or marginalize – the framing of – energy-saving practices and buildings in the context of practice. This provides an operational approach that can be used to study how official framings conceal the context of practice, and how everyday meaning-making appeals to it. The questions referred to in the table also incorporate reference to the empirical cases, methods, and sources of evidence explained in Sections 4.3 - 4.7.

Table 2. Analytical framework, research questions, methods, and sources of evidence.

Analytical approach	Research question	Methods and sources of evidence
<ul style="list-style-type: none"> <li>• Policy-makers and commissioning organisations</li> <li>• Experts involved in production of buildings and reproducing official narratives</li> </ul>	<p><i>How do official representations of commercial buildings relate to the everyday meaning-making of energy saving and the (re)production of its practice?</i></p>	<p><i>Policy analysis and case studies (four primarily commercial buildings in Barcelona)</i></p>
<ul style="list-style-type: none"> <li>• The public (laymen and experts) making meaning of “energy saving practice” through everyday experience</li> <li>• Commercial buildings, as well as narratives, contribute to framing a problem</li> <li>• (Re)production of practices mediated by framing and meaning-making requires consistency in practice</li> <li>• Studying framings permits study of the relevance granted to context of practice by different actors, and their contradictions</li> </ul>	<ol style="list-style-type: none"> <li>1. <i>How do EU, National and City policies in Barcelona frame energy-saving practices in commercial buildings?</i></li> <li>2. <i>How do the official narratives and practices commissioning organisations frame energy-saving practices in four commercial buildings in Barcelona?</i></li> <li>3. <i>How does the public make meaning of energy saving practice through their everyday experience with four commercial buildings in Barcelona?</i></li> </ol>	<ul style="list-style-type: none"> <li>• <i>Document access and review of official policies and communications (RQs 1 &amp; 2)</i></li> <li>• <i>Observation outside and inside buildings (RQs 2 &amp; 3)</i></li> <li>• <i>Narrative interviews (RQs 2 &amp; 3)</i></li> </ul>

## 4.2. Implications of the analytical approach and methodological reflections

Interpretive methods may be questioned from a positivist standpoint on the grounds of their systemacity and generalizability. It is important to address this issue to ensure the trustworthiness of the present research and its utility regarding informing improved energy saving policies.

Regarding systemacity, Yanow claims that what interpretive research lacks is “rigor”, not systemacity, because it relies on a “flexible” and “iterative meaning-making process”, which constitutes one of its strengths (2013b, 46; 2007).

[T]he constant tacking back and forth in ongoing comparison between the nonverbal data of objects and acts observed and ‘read’ and members’ explicit pronouncements, whether in formal or informal speech (including interviews) or in writing, points to one of the strengths of interpretive research. (Yanow 2013b, 46)

What Yanow acknowledges as problematic is the limited methodological reflectivity of some scholars, which is tacit but missing in reporting about their findings. The former situation contributes “to the sense that interpretive analysis more generally, and the analysis of physical artifacts specifically, are not systematic” (2013b, 43). However,

The systematic character of space analysis lies in sustained inquiry over time, which produces myriad ‘observations’...; in the careful choice of sites to observe, individuals to talk to, and documents to read; and in the procedural systemacity brought about through the various categories for generating and analysing data. (Yanow 2013a, 382)



This systemacity was pursued in the selection of the different case studies, sources of evidence and participant actors reflected in this chapter, and throughout the process of their interpretation. Systemacity also requires abiding by reflective and transparent research and reporting principles. “[M]aking those reflections ‘public’ and transparent in research reports enables others to assess the adequacy of the interpretations and analyses” (Yanow 2007).<sup>27</sup>

Reflection and transparency, then, support the “trustworthiness” of findings in interpretive research (Golafshani 2003) while positivist research seeks validity and credibility (Robson 2002). To enhance transparency I reflected on the steps taken to gain access to sources of evidence and the analytical process along with reflections on the research in a research diary and analytical memos, as described in Section 4.8, and made explicit in the analytical chapters. Finally, adding to the trustworthiness of this research, interpretation based on participant observation, interviews, and document reviews allows for “triangulation”. This involves a “validity procedure where researchers look for convergence among multiple and different sources of information to form themes or categories in a study” (Creswell and Miller 2000), which, in interpretive research, contributes to “trustworthiness” (Golafshani 2003). Accepting my position as a subjective actor and part of the public permits comparison with the narratives of the public; i.e. a form of double-hermeneutics which contributes to the trustworthiness of this research.

The other research criterion, generalizability, is deemed particularly necessary in research that is intended to inform policy (Sánchez-Jankowski 2002), like this dissertation.

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<sup>27</sup> Yanow suggests that researcher reflection needs to address not only what is observed and said, but also what the self and others obscure (2007): “...to maintain awareness of how their own lived experiences shape and filter what they attend to in the research project, what they observe and to what they might be ‘blinded,’ what questions they ask (and don’t), what they are told - and what might be being kept from them, who talks to them and who doesn’t, and so forth”.

However, it should be noted that interpretive research tends to deviate from this preoccupation, precisely because it aims to counter the limitations of positivist research (whether quantitative or qualitative) that relies on the systematic comparison of different sources of evidence to establish correlation and causation. Responding to critiques about the limited generalizability of interpretive research, Punch argues that generalizability is most problematic in quantitative research where establishing causation comes at the cost of in-depth understanding (2005, 243). Without deep understanding the link between correlation and attribution made from positivist standpoints is questionable (Vine 2008). Instead, qualitative research supplies deep understanding by engaging the subjective perspectives of multiple actors (Punch 2005, 243). Such deep understanding is deemed particularly necessary in exploratory research (Ragin 2000, 204) and for understanding how citizens engage with energy saving practice (Lopes et al. 2012).

Such a recognition of generalizability may seem to contradict the interpretive framework that is employed herein. I acknowledge that caution must be applied, and an appropriate understanding of the context-dependence of findings must be generated. As argued by Yanow:

As meanings (in whatever context) are situation-specific, a meaning-focused policy analysis (or, more broadly, a meaning-focused social science) is highly contextualised, rather than aiming for generalizations that might be applicable, in a context-free manner, to all situations. (2007)

However, even using this narrow recognition of generalizability it is agreed as generalizable that things are meaningful, and that meaning is made in a certain context (Yanow 2007, 2013b) hence allowing a critique of official representations that disregard

the context, as problematized in this research. Moreover, some authors such as Sánchez-Jankowski make the case that generalization is as much a part of interpretive research as it is of everyday meaning making, thereby allowing it to inform policy-making:

[G]eneralization is both necessary and inevitable in interpretive research. Without it interpretivism is art and while art is a laudable activity, it is inadequate as a basis for policy action and for claims about what the wider social world is like. Indeed generalization is commonplace in interpretive research and denials of its possibility arise from ... the anti-positivist revolution and the consequent abandonment of hermeneutics for the linguistic turn and text-centred approaches. (2002, 138)

Accordingly, re-cognising the generalizability of findings in interpretive research is a principle aligned with pieces of research such as the present one that are intended to overcome the limitations of textual critique. Such a recognition of generalizability must be done with caution, taking into account the context-dependence of meaning-making. To the generalizability of my findings will contribute: a) deep understanding enabled through the engagement of a multitude of perspectives, and b) comparison of my interpretations with situated theoretical claims.

The methodological and analytical approach of this research potentially constitutes a reflective, transparent and systematic process that is conducive to creating trustworthy and generalizable findings. It should thus contribute to a much needed epistemological and methodological breakthrough related to recognising everyday meaning-making in the positivist-dominated domain of energy saving policy and research.

### 4.3. Case studies

Four buildings in Barcelona were comparatively studied as cases studies. Case studies are often used to address the need for empirical support in social theorization (Yin 2003), and are considered necessary for social theory to “effectively” transform common and policy understanding:

[A] scientific discipline without a large number of thoroughly executed case studies is a discipline without systematic production of exemplars, and that a discipline without exemplars is an ineffective one. Social science may be strengthened by the execution of more good case studies. (Flyvbjerg 2006)

Such is the case, as shown in Chapter 2, of the under-theorization of meaning-making as mediating the (re)production of energy saving practice.

Case studies foster an understanding of the relations between different parts of the whole (Ragin 2000, 90), hence supporting explanatory research, guided by “how” questions (Yin 2009, 8-9). Hence they are directly applicable to interpretive research that answers “*what* artifacts mean but also *how* they mean” (Yanow 2013b, 42) by combining diverse ethnographic sources of evidence. By permitting the combination of multiple sources of evidence (Yin 2003, 18; Ragin 2000, 90), case studies facilitate the iterative interpretation of the three inquiry processes that are at hand to access “artefactual data”: participant observation, conversational interviewing, and document review, hence furthering trustworthiness (Yanow 2013b, 46-47; 2007). Moreover, case studies can benefit from the guidance contained in theoretical claims (Yin 2009, 18) such as the social critiques of energy saving conceptualisations and practices presented in Chapter 2, and the Lefebvrian theory that has inspired the theoretical framework for this study.

Regarding the number and location of case studies, it is agreed that “a context-specific comparative analysis of similarity and difference” is fundamental in interpretive research (Yanow 2013b, 57-58), hence requiring at least two cases in a similar location. A small number of qualitative cases is considered to provide the depth and empirical grounds necessary for exploratory research (Ragin 2000; Yin 2009). Moreover, this increases possibilities for comparison and “triangulation”, thereby increasing “validity” (Ragin 2000, 90), or what interpretive-qualitative researchers prefer to refer to as “trustworthiness” (Golafshani 2003, Yanow 2013b). “Comparison” is particularly recommended to provide “compelling” findings, especially whenever the borders between case and context are unclear and (Yin 2009, 53), such as in the case of socially-constructed realities (Ragin and Becker 1992) addressed in this dissertation.

### 4.3.1. Selection process

The case selection was informed by aspects of ownership, use, and public access to reflect the criteria of EU requirements for commercial buildings to exert an “exemplary function” (EU 2010, 2012, 2018). My core criterion was including office buildings whose owners make claims about related energy saving values and policies. One possibility was to conduct a comparative study between the council buildings of Barcelona (Spain) and Brighton and Hove (UK), and to include corporate buildings from both cities. The interest in Brighton originated from recently introduced “exemplary council” policies that reflected on the need for the council to “walk the talk” in the official website of the Council.<sup>28</sup> Also, incorporating NGO buildings would have accorded with an understanding about the potential contribution of these organisations to creating a consistent environmental

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<sup>28</sup> Other non-government cases in the south of England would have included churches and NGOs such as Greenpeace who claim that their buildings are consistent with the values and practices that they promote.

message (Jackson 2009). However, Brighton and Hove City Council did not agree to facilitate access to the information required to initiate a case study, and none of the major social and environmental NGOs in Spain were interested in discussing their energy-saving practices.<sup>29</sup> Accordingly, I redirected my interest towards the Council of Barcelona and the corporations willing to participate in my study.

The city of Barcelona was included in the research design from the beginning because of the sustainability discourse of both the City Council and the Regional Government of Catalonia, which stands out amongst other government actors in Spain. Moreover, energy saving conceptualisations, and especially a smart city program have served to build the city's identity. Being originally from the neighbouring area, conducting research in the city was an opportunity for me to use my experiential knowledge, to reduce research costs, and to boost the opportunity for follow-up research after finalizing my PhD. Four buildings in the city sparked my interest. One was *Fabrica del Sol*, a self-sufficiency museum that reflects the Council's interest in renewable technologies. Then there were also the headquarters of three utility companies: a) Gas Natural Fenosa, a gas and electricity provider – which had, in all appearances, superbly handled a case of sick building syndrome in their national headquarters in Barcelona, situated in a skyscraper, b) Aguas de Barcelona, a water company that owns and occupies the most emblematic skyscraper in the city – recently granted a BREAM Certificate in Use, and c) Endesa, the major electric

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<sup>29</sup> In 2014 I filed and followed up a request for information from the Brighton and Hove City Council. Although according to their helpdesk my request was “being handled”, I got no further response. During the month of July 2014, I contacted Spanish NGOs with a budget of above €10m, and the majority of environmental ones listed in a database (Fundación Eroski 2014) to ask about the energy management policies that applied to their premises. I received responses from almost 30 organizations which showed little interest in or ignorance about the matter, and which at best excused the organisations by claiming either: a) that saving energy was outside their scope of work, b) that their obligation towards donors did not allow them to spend time on such minutia, or, as in the case of one green energy cooperative c) that they had rented their premises.

utility in Spain which had recently constructed and moved to a new regional headquarters – whose energy efficiency credentials were publicized as part of a national strategy.

However, both Gas Natural Fenosa and Aguas de Barcelona (see the buildings in Figure 3) refused to facilitate access to any information about their buildings after initial communication with their public relations departments, to which I was invariably diverted during my first official inquiries. In the case of Endesa, after conducting interviews with educational officials I was invited to meet a public relations representative who expressed the openness of the company to sharing contacts and information. Following that day I received no further replies to my attempts to contact company representatives. These refusals to respond to questions about *apparently exemplary* buildings were puzzling at the beginning, but later on contributed to supporting my findings about the interest of organisations in diverting public scrutiny from their buildings and, in particular, from the sustainability practices deployed in them. This can be explained by the multiple interpretations to which they are exposed (Geels 2010; Bowen and Aragon-Correa 2014; Lyon and Maxwell 2011; Greenberg 2014). At this stage it was important to understand that these buildings are important representations of the related organisations, and that they understood scholarly scrutiny of their practices as a potential threat.



Figure 3. The Agbar Tower (left) and the Marenostrum Tower (right).  
Torre Glòries (formerly Agbar Tower) Jean Nouvel and Fermín Vázquez (2004) (Photo by DAVID ILIFF.  
License: CC-BY-SA 3.0); Torre Marenostrum (foreground) (Gas Natural Fenosa) Enric Miralles, &  
Benedetta Tagliabue (2003) (Photo © Ralf Roletschek)

### 4.3.2. Final selection

Concerned that refusals to participate could occur during my research engagement with buildings in disparate locations, jeopardizing my research and increasing costs, I opted for the pragmatic option of studying buildings only in Barcelona. This decision was also grounded on the understanding that the choice of a single city is advantageous for



exploratory research, since the choice of several cases in one single location — in this case, Barcelona — establishes a common context, increasing comparability (Schmidt 2008; Yanow 2013b). My final choice of cases retained the *Endesa* building (Figure 4), about which I already had insider information. Then I included *Fabrica del Sol* (Figure 5), following recommendations concerning it being an educational site that represents the Council’s message to the public. *Fabrica del Sol* had an apparently “demonstrative” character (see Section 2.3), as opposed to *Endesa*, framed in company narratives as the common practice of the organisation regarding its buildings.

Throughout the fieldwork, I added two additional buildings as I realized their relevance in the city context, and different interviewees recommended them not only for their energy saving capacity but also for their capacity to represent the practice of their organisations. I chose *Media-ICT* (Figure 6), being an office building constructed by a public company and the flagship of the Barcelona Smart City program, occupied by public and private organisations. I then chose the *Efficient Block* (Figure 7) project, promoted by the Catalan Government in collaboration with multiple actors, which consisted of the energy efficiency renovation of a block in the city centre that included residential buildings and four commercial buildings (three government ones and a private hotel). Even though these commercial buildings were eventually not included in the project, I found this case interesting for expanding on the engagement of the public in their role as residents.



Figure 4. The *Endesa* building, as publicized in the press.  
Photo: Europapress 25/05/2012.



Figure 5. *Fabrica del Sol*.  
Photo: Energia12, 18/06/2013.

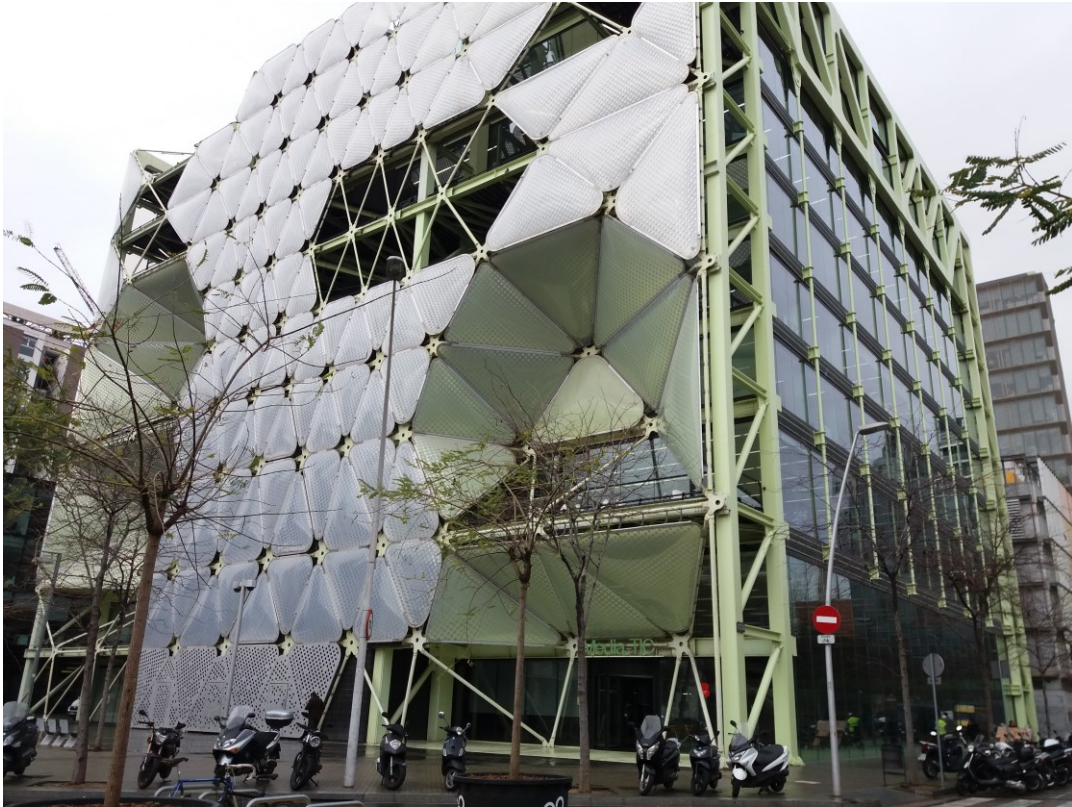


Figure 6. The *Media-ICT* building.



Figure 7. Interior yard of the *Efficient Block*.

Ultimately, the selected four cases included: a) three commercial buildings commissioned by government actors and corporations, and b) the mix of residential and commercial buildings in the *Efficient Block* –backed by the Catalan Government. With the exception of the residential buildings in the *Efficient Block*, all buildings were open to the public, with *Media-ICT* hosting training and consultation work for citizen-entrepreneurs, and *Fabrica del Sol* and *Endesa* hosting museum and educational activities. The four buildings represented a wide array of energy-saving practices referred to in official narratives as efficient, renewable and smart. The cases also appeared to involve different degrees of consistency between the buildings and the organisational narratives, as well as with other of the organisations’ buildings – which I refer to as *coherence* and *integration*, respectively. Their location and main characteristics are summarized in Figure 8 and Figure 9.

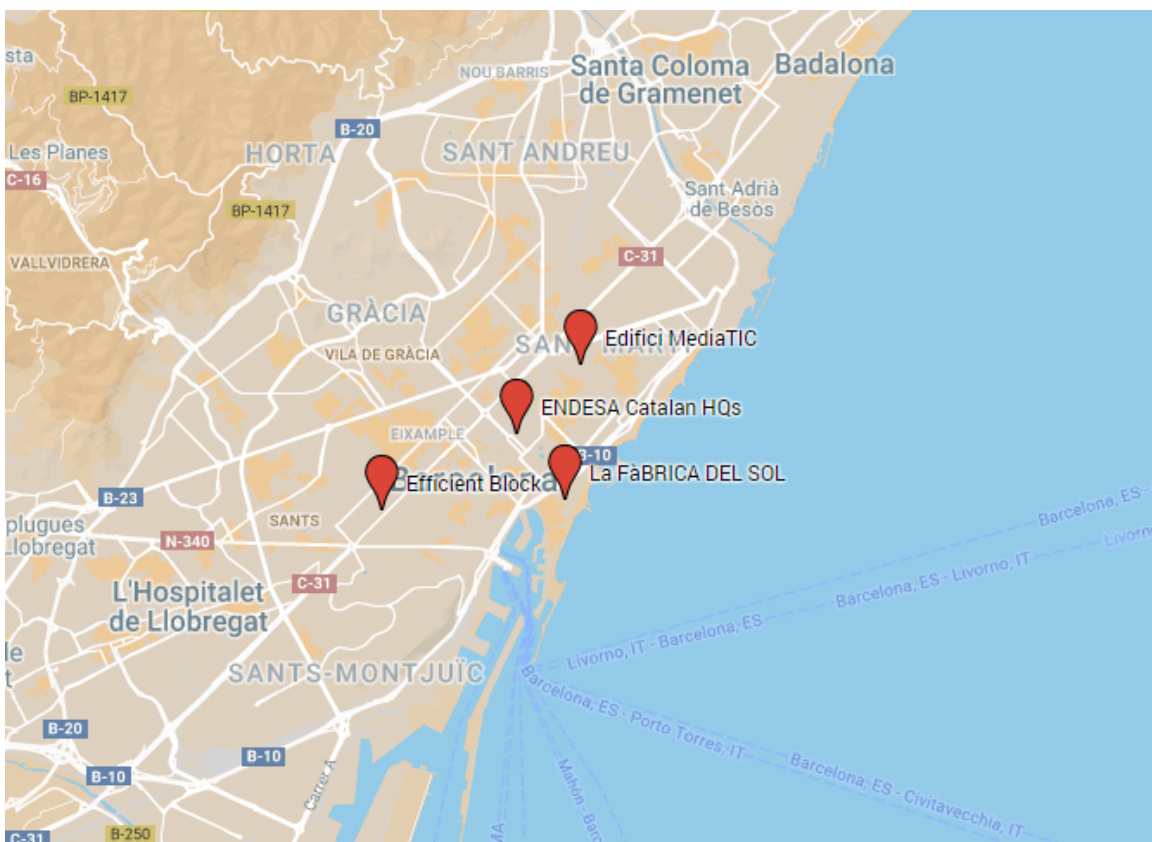


Figure 8. Location of the four case-study buildings in Barcelona  
 Source: Google maps




		<b>Ownership</b>	
		<b>Public</b>	<b>Private</b>
<b>Use</b>	<b>Administrative</b>	<p><b><i>Media-ICT</i></b> Public company-owned offices, occupied by public and private companies - Smart technologies</p> 	<p><b><i>Endesa</i></b> Energy utility-owned and occupied offices - Efficient technology</p> 
	<b>Other</b>	<p><b><i>Fabrica del Sol</i></b> City council museum and offices, occupied and managed by NGOs - Renewable technologies</p> 	<p><b><i>Efficient Block</i></b> Catalan Government project in mixed-use block - Efficient technology and behaviour</p> 

Figure 9. Summary of the selected buildings in Barcelona  
 Photos by the author (*Media-ICT* and *Endesa*), [ajuntament.barcelona.cat](http://ajuntament.barcelona.cat), (*Fabrica del Sol*) and Habitat Futura (*Efficient Block*).

## 4.4. Accessing sources of evidence

As outlined, the use of participant observation, interviews and document analysis is justified by both the interpretive analytical approach and the case study methodology, as summarized in Table 2. The research questions, the literature, the documents, the case studies, the types of interview and the interpretive framework presented in this dissertation are the result of an iterative process similar to that prescribed by Yanow (2013b, 2007). Accessing sources of evidence started before the research proposal for this dissertation and has continued to date through everyday experience as passer-by and user of commercial buildings in Barcelona, as a reader of news, reviews, and reports, as well as through discussion with lay people, experts and scholars, both in Barcelona and abroad. These have influenced my understanding of how buildings contribute to producing the meaning of energy saving. However, the sources of evidence consciously referred to in this dissertation had been collected by June 2015, when the leftist party Barcelona en Comú took office in the council. I have differentiated four major stages, as summarized in Table 3, constituted around different field research activities and which occurred through an iterative process, meaning that they were mostly recurrent and simultaneous.

- a) An exploratory document review and interviews, before and during a visit to Barcelona in January 2014 and attendance at the IEPEEC conference in Berlin in September 2014. This served to help me understand the different rationales of organisations and experts for conducting and representing energy-saving practices. I gained deep understanding of the EU directives informing the exemplary role of buildings (EU 2010, 2012) and related reporting from Member States, in particular Spain (Government of Spain 2007, 2013; Government of Spain a 2014; Government of Spain b 2014). Also, this initial empirical engagement with the

study helped me to narrow the case study selection, and to test my interview methodology. I realized that the understanding of both expert and decision-makers of EU exemplary requirements was closely related to that of demonstration, procurement and labelling programs (Section 2.3).

- b) The selection of the two initial building cases: *Endesa* and *Fabrica del Sol*, was based on the review of documents and a first round of observation and interviewing in Barcelona in mid-2014.
- c) Throughout the two months of May and June of 2015 I contacted key interviewees. Contact with Endesa representatives was disrupted so I decided to engage the *Media-ICT* building and the *Efficient Block* as well in order to grant additional relevance to on-the-spot interviews, hence increasing the weight awarded to everyday meaning-making over official representations.
- d) During and after the analytical process (Section 4.8) I accessed additional documents and conducted follow-up conversations with previously interviewed actors. At this stage I had a feeling of saturation, meaning that no new relevant insights were arising from experts or the public about the selected cases. A change of council government that occurred at the end of the field research marked the end of my access to new sources of evidence.

After this, continuing field research would have involved a longitudinal case study, which would have been too resource intensive for this dissertation. However, I continued to engage in reflective everyday interaction with the reality of energy saving policy and practice in Barcelona through access to news, key newsletters and debates on social media.

Table 3. Activities conducted when accessing sources of evidence through an iterative and recursive process.

a) Exploratory research (Barcelona and EU) – Defining context and selection of cases. Field visit December 2013-January 2014
b) Observation and interviewing in Barcelona – <i>Endesa</i> and <i>Fabrica del Sol</i> . Field visit mid-2014
c) Observation and interviewing about <i>Endesa</i> , <i>Fabrica del Sol</i> , <i>Media-ICT</i> and <i>Efficient Block</i> . Field visit May-June 2015
d) Accessing additional sources – Multiple field visits 2016-2018.

## 4.5. Documents

I engaged to different degrees with a multitude of documents by “identifying, locating, and closely reading *or* viewing research relevant documents” (Yanow 2013b, 47, my emphasis). The former served to shape my subjective understanding of the context, to empathize with the frames of interviewees, and eventually to contrast and generalize my findings. To understand the context, during the exploratory phase I focused on the organisations that act as official proponents of energy saving discourse and practice; in particular, the EU Directives, Spanish and Catalan Government implementation and reporting, Barcelona City Council policies and communications, as well the guidelines and websites of building certifying organisations such as the GBCe.

During stages of interviewing (referred as B and C in Section 4.4) I focused on the documents produced by the organisations commissioning and occupying the case-study buildings. These documents were obtained online and through interviewees. Also, I accessed expert reviews and commentary, as well as newsletters that I received periodically. These were addressed to the laymen public – as in the case of the news from the + Sustainable City Council Program and information about activities organized from *Fabrica*



*del Sol* – and to expert audiences – such as the newsletter of the Architects’ Guild COAC, and the Barcelona Observatory for Architectural Rehabilitation OBRA; ArchDaily and ECEEE. Amongst the documents accessed during and after the field work are included the sound recordings of some of the participatory activities that were conducted to inspire “re-thinking” about *Fabrica del Sol*, wherein multiple stakeholders reunited to debate about the function and type of activities that the building should encompass after its renovation. Also, I listened to presentations available through online podcasts and videos, including one from the representatives of Endesa about the energy management of the company buildings, and a debate about smart cities between key actors in the city council. Accessing these sorts of recorded documents allowed me to obtain insight into the debates that occurred before the field research period that had shaped *Fabrica del Sol* and *Endesa*. The review does not include critical activist reports or websites about commercial buildings in Barcelona, the energy-saving practices of organisations, nor their meaning. Hence, documents mostly covered the official narratives of organisations and expert reviews.

Accessing these sources of evidence offered deep insight into the explicit, official function of buildings in framing energy saving practice. It also served to increase understanding of the debates that underlie the commissioning of the studied buildings, not always overtly shared in official narratives. Digital and paper documents were digitally stored and organized using the software Evernote Premium. Within the folder allocated to this research I tagged all documents according to multiple dimensions: in terms of context, type of building, specific case study, as well as preliminary coding categories. Since the documents thus saved were not confidential, their storage in Evernote did not pose major ethical considerations. Although many of the documents I accessed were not closely read or reviewed, they contributed to providing a subjective understanding of what matters for

organisations and experts. Other documents were thoroughly analysed and the notes that were taken served to structure the text of this dissertation.

## 4.6. Observation

Participant observation serves to position the researcher in the space of everyday where the public makes meaning of buildings. In interpretive research, the knowledge of the researcher, as with the subject of research, is situated in a historical and spatial context (Yanow 2013b, 43). Thus, direct observation, “with whatever degree of participating” (ibid, 47; cf. 2007) enables “bodily” and “affective” engagement with space, fundamental to understanding “how meaning processes unfold” (2013b, 51); i.e. a “shared understanding” with other meaning makers (2007). Following this line of thought, interviews conducted near and inside the building served as a two-way feedback process between observation and interviewing by enabling interviewees to reflect on the buildings and inspiring me to formulate follow up questions.

In all cases I conducted observations of passers-by at multiple stages. During preliminary research stages I conducted non-participant observation of the buildings. This observation was unstructured and throughout it I allowed remarkable events and features to capture my attention. This allowed me to create a contrast between the features highlighted by the proponent organisations and the media, such as the monumentality of the buildings, their coherence with the environment, the visibility of active and passive technologies, the intended innovative character, and openness to citizenship. I also conducted purposeful visits during which I observed the exterior of the buildings, walked along the pavements outside them, and sat on benches located in nearby avenues and squares. At this stage I had access to the interior of *Fabrica del Sol* and *Media-ICT*. At a

later stage – during interviews with organisation representatives and users – I observed again the interior of these buildings, and gained access to the historic part of *Endesa* – where an energy museum is located – and to the premises of the Catalan Energy Agency in the *Efficient Block*. In the case of *Media-ICT*, I used the publicly available media room (*Cibernarium*) located on the first floor, and was offered a guided tour by one of the co-designers. Also, I had the opportunity to work as a research associate of RMIT Europe, a university based in *Media-ICT*. This provided me with insider experience of the building as a user and as a passer-by in all other cases which involved my daily coming and going between September 2017 and April 2018. In the case of *Fabrica del Sol* I used the space to conduct interviews with users, to attend seminars, to visit the sustainable energy exhibition and renewable technologies, and to visit a 3D printing space that was installed by the end of my field research. In the case of *Endesa*, I was only able to fully visit the educational historical section of the building (Figure 5) whose energy efficiency is not certified, and the two entrance halls to the offices (*Carrer Vilanova* and *Carrer Napols*) which lead to barriers that block the way to non-authorized personnel. In the *Efficient Block* interviews with neighbours gave me access to common areas and allowed me to see the rooftop and the inner yard of the block where many of the project practices were to take place. Accessing this source of evidence enhanced my capacity to share meaning with the public and, by shaping my subjective understanding, I consider them part of participant observation.

In addition to the observation of the case-study buildings, I attended events including conferences, debates and guided visits that took place in the City during my field research. These activities were part of the 2015 Construmat meeting; the Congress of Architecture and Health; and the activities organized by the Council during the 2015

Energy Week where *Fabrica del Sol* served as a hub for debating and visiting energy-saving practices. A list of these activities is accessible in Appendix 1. Together, my observations constituted “myriad” observations which for Yanow are to interpretive research the equivalent of the large “n” of quantitative research (2013b, 57).<sup>30</sup>

The major limitations of direct observation included the restricted access to some of the premises, in particular to the office part of *Endesa*, and *Efficient Block* – which, being at the stage of project competition at the time of my field research, it could not be visited for prolonged periods. However, this provided me with an opportunity to pay greater attention to the public and to the participation processes occurring in the latter. Also, part of *Fabrica del Sol* was under renovation during the time of my field research. I tried to compensate for these limitations by making an additional effort to interview users and passers-by, and by studying publicly available images of the interiors of these buildings. It could be argued that greater attention should have been paid to accessing the building and to the openness of the organisation in participating. However, this would have excluded buildings of interest. As noted in Section 4.3, the very reticence of some organisations was informative about their will to avoid having their buildings put into context.

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<sup>30</sup> Such observation was reflected in field notes and photos taken with my mobile phone, which were saved in Evernote and on a network drive at Central European University, respectively. These items were coded along with other written documents. During the compilation and analysis of field notes, Yanow’s categories of studying buildings as non-verbal representations served as inspiration. These are fourfold: a) vocabulary (materials, color, aesthetic references, along with values, beliefs and feelings evoked), b) design gestures (relation to the surrounding built environment, in terms of space and quality), c) design proxemics (making the building receptive to the “monumental”, and hence distancing) and d) decor (related to corporate imagery) (2013b, 51-56). These categories resonate with Lefebvre’s commentary about the geometry of commercial buildings and their legitimating (socially reproductive) function and claims for the development of a spatial semiotics (1991). However, as I will show in Chapter 7, engagement with the layman public showed that the relevance of these categories in everyday meaning-making is relative.

## 4.7. Interviews

Qualitative research largely relies on interviews, understood here as intentional interactive communications between the interviewee and the researcher (Rapley 2004) in person, by phone, or video-conferencing. A phenomenological stance in interpretive research suggests that interviews should “focus on lived experience [and] direct[...] researchers toward conversational...interviews, in order to understand how individuals frame policy issues and where these frames come from” (Yanow 2007, 113). Interviews, therefore, allow the researcher to capture *what* practices matter and *how* in everyday meaning-making. They are fundamental in this dissertation to incorporating a plurality of framings, including those of the layman public and the everyday experiences of a diversity of actors, and hence countering the epistemological focus on the knowledge of experts and official narratives.

### 4.7.1. Selection and number of interviewees

Yanow suggests differentiating between building designers, organisational decision-makers, workers, clients, users, and “those who observe [buildings] from a distance, whether near (as passers-by) or far” to identify different “communities of meaning” and “of practice” (2013b, 59). Acknowledging this call, along with the epistemological divide between expert and everyday knowledge that is problematized in Chapters 2 and 3, I originally differentiated between: a) official representatives and experts – including designers, engineers, mid-range managers, policy makers and implementers, and communication officers; and b) the laymen public – those experiencing the building in their everyday life. Amongst the layman public I differentiated between users and passers-by to acknowledge that the meaning made by the latter is the most under-researched (Section 2.7). During my research I became aware of the need of considering experts as public,

particularly when referring to their everyday experience. This was supported by the novel relevance granted to experts as public targets of government messages as middle-men (Shove and Walker 2010; Janda and Parag 2013). This approach opposes potential readings of Lefebvre that suggest that the knowledge of experts excludes their experiential knowledge and that they are not aware of the political dimension of their activities (1991, 99). “[I]deologues, whether technocrats or specialists, convinced of their own freedom from ideology... proceed to build, isolating one parameter or another, one group of variables or another” (1991, 311). Similar concerns apply to the study of layman public narratives given the prevalence of knowledge that, according to Lefebvre, alienates the public from experiential knowledge (1991).

The selection of official representatives started with the “snowball” technique (Patton 2002, 237) during the preliminary research stage, starting with accessible contacts, and continuing with the selection of additional ones simultaneously with the selection of cases. With the purpose of incorporating as many different views as possible, I included actors recommended by interviewees. I also searched selectively to engage a diversity of perspectives. Contacts included participants of professional and public events, as well as individuals identified through professional social media (Linkedin). In the case of *Endesa*, after a successful round of first contacts, representatives stopped responding to my communications, which I took to mean that they were banned from participating in my research. In the case of *Media-ICT*, key representatives, including the real estate manager, the maintenance manager, and the main architect, claimed to be too busy to meet. During the course of some of these interviews I had the impression that it was difficult to differentiate the role of interviewees as experts, energy saving activists, and as public. Such

was the case of various interviewees related to *Fabrica del Sol* whose narratives combined expert and activist opinions.

When approaching layman publics, a selection bias was also introduced to include a diversity of status, age and gender. I interviewed users inside the building, but also addressed them on the street when entering or leaving the building. This served to compensate for a lack of permission to access *Endesa*, and to private offices in *Media-ICT*. To reduce the effect of my appearance on the decision of interviewees to participate, I dressed in what I considered to be neutral and informal clothing. Also, to reduce the potential effect of my identity on the reactions of participants I addressed them either in Catalan or Spanish, but was ready to shift immediately to either of the two languages according to their first reaction.

Although authors like Robson claim that between 20 and 30 participants are usually sufficient for case study research to reach saturation (Robson 2002, 165), the number is variable and the figure was used only as a guideline. I stopped conducting interviews when I felt that saturation had been attained and that new themes were no longer appearing. The final number of interviewees was 129, as detailed (in anonymised form) in Appendix 4. These included 62 prearranged interviews conducted with 58 interviewees, of which 27 interviews were conducted during the exploratory phase, and 35 during the core period of field research (see Section 4.4). A total of 67 interviews were conducted on-the-spot, mostly with passers-by and users.<sup>31</sup> In addition to these, there were interviews with experts

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<sup>31</sup> The feasibility of (and interest in) conducting a certain number of interviewees per case-study building was countered by the different degrees of intimacy and likely implications of interviews with the different participants with regard to the building cases and other buildings. Multiple experts interviewed in relation to a specific building referred to: a) their experience in the design or construction of more than one building, and to b) their experience as public with other buildings. Similarly, participants contacted as public (both users and passers-by) also referred to buildings other than the subjects of the interview.

and officials which did not directly refer to any of the cases but to local, national and EU policies or to practices of energy saving in commercial buildings. Additional to these formal interviews, informal conversations from everyday life and parallel research activities continued to support my understanding of the problem, thereby corroborating or contradicting my analytical insights. These were accordingly annotated in memos, which were recurrently reviewed until the finalization of the present draft. As noted, observation of participation activities in the *Efficient Block* and review of recorded ones in *Fabrica del Sol* (Section 4.6) served to gather additional perspectives from a diversity of publics.

#### 4.7.2. Conversational interviews: prearranged and on-the-spot

As noted, interpretive research privileges “conversational interviews” over survey-type interviews (Yanow 2013b, 48). These types of interviews are important “[for] understand[ing] how individuals frame policy issues and where these frames come from” (Yanow 2007, 113). I conducted two types of interviews: prearranged interviews – mostly with representatives and experts – and on-the-spot interviews, mostly with layman public. Prearranged interviews mainly took place in the workplaces of organisational representatives and building experts, typically located in the building under study and other buildings of the organisation. Exceptionally, three interviews took place through video or phone call when the interviewees’ agendas and location made meeting unfeasible.

Although in conversational interviews there is no need to minimize “interviewer effects” (Yanow 2013b, 48), I considered this potentially problematic for my research interests because I was concerned about the tacit nature of everyday knowledge. As a test, during preliminary prearranged interviews I asked about the “exemplary” or “social”



function of buildings. I noted that some respondents were confused, and when I clarified the expression they appeared to look for an explanation that would accord with my authoritative reference to EU Directives. To enable a conversational mode of interview, and to let interviewees highlight what interested them, at later stages I minimized the interview schedule by starting with a general question and formulating in situ follow up questions when necessary. The purpose was to avoid putting words in interviewees' mouths as much as possible, and let them choose whether to use expert conceptualisations, and if so, which ones. Based on their wording I then delivered my follow-up questions. Only in the final stages of the field research and towards the end of some interviews did I ask questions about references to the context that had tacitly arisen in observations, documents and interviews. The purpose of this was to observe interviewees' reactions using a sort of Delphi technique, a recommended practice when studying heterogeneous groups (Linstone and Turoff 1975, 4) for increasing the trustworthiness of interpretations. Aware that I could have led interviewees' responses, the former were dealt with separately in the process of coding (Section 4.8.3), enabling discernment. In contrast to my original plans, I decided not to use images of the buildings to guide interviews in order not to restrict framings to the material and perceptual domain.

When first addressing representatives and experts, many were surprised that I was not interested in quantitative data about energy savings and that I was not using a survey-type questionnaire. Some even requested that I send them a "questionnaire" prior to our meeting, and many started the interview by relating quantitative consumption and savings-related data, showing the prevalence of a certain type of quantitative knowledge. Prearranged interviews started with a question of the type: "Why do you do X?" or "Why an X building?", where X indicated a fundamental concept that the interviewees or their

organisations were using to refer to their work or to the study building(s): for example, “efficiency”, “sustainability”, “renewables”, “smart”, “education” or “exemplary”. Then, follow-up questions, as listed in Appendix 2, were adapted to the interviewee’s responses. Prearranged interviews tended to last around 1.5 hours, although some lasted more than three hours.

On-the-spot interviews started with the question “What do you think about this building?” This served as a stepping stone to then ask: “Why do you think it is X?” and “How do you observe this?”, where X stood for a term used by the interviewee in response to the first question. A four-question schedule printout served to present the conversations as part of a formal piece of research (Appendix 3)<sup>32</sup> and to let potential interviewees guess the duration of the interview, whilst not requiring me to compromise in terms of the duration of the latter.<sup>33</sup> I emphasized that my interest was “knowing what was interesting to them” to gain access to information from some respondents who claimed not to know about the buildings. Also, to further the conversational character of the interview, at this stage I introduced the premise that it was not necessary to answer all my questions. In general, this resulted in short interviews of 10 - 15 minutes that maintained a conversational mode and granted the respondents leverage to address their answers towards matters pertaining to the building, the owner organisation, or the world order that interested them.

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<sup>32</sup> Many of the public I approached were initially sceptical about the qualitative approach, probably because they were used to surveys, and qualitative questions may resemble those posed by salesmen; however, as the interviews progressed, interviewees seemed to be comfortable and to be enjoying the conversations.

<sup>33</sup> When potential interviewees asked how many questions I had, or how long it would take them to respond, I pointed at the four questions listed on an A4 page whilst stating “I just have these questions, it is up to you how long you want to talk about them”. I believe this tactic was successful in retaining public interest and full conversational engagement within the time constraints of respondents.

Most actors seemed comfortable speaking about the buildings in a conversational, quotidian way. I am aware that I directed the conversation towards qualitative issues, potentially making explicit otherwise tacit knowledge.

### 4.7.3. Research ethics and the management of evidence sources

Prior to the start of the conversations I shared with interviewees: a) a brief description of my research, the topic, methodology and source of funding; b) an excerpt of the CEU Ethical Research Guidelines – as agreed on with my dissertation supervisor – and a link to the full version online of the former (CEU 2012); and, c) a “Post-interview Confidentiality Form”. These documents are accessible as part of my interview protocol in Appendices 2 and 3, and were made available to interviewees in Catalan and Spanish.<sup>34</sup> They were rarely read by on-the-spot interviewees, whom I instead informed about my PhD researcher status at CEU Budapest (showing my credentials), and whom I briefed on the topic of my research using the following sentence, or similar “I am conducting research on commercial buildings in Barcelona, like this one [whilst pointing at the building]”. In all interviews I indicated that at the end of the process the participant would be invited to decide whether I could use the information they had provided. Most interviewees agreed to the use of their responses and names.

Prearranged interviews were recorded using my phone, and notes were taken. In the case of on-the-spot interviews conducted on the street, I preferred to only take notes. The reason for this was that I felt it was inconvenient to record interviewees whilst standing up and to ask for permission to record these shorter types of conversation. I maintained a

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<sup>34</sup> During the exploratory phase (referred as A in Section 4.4, I also conducted interviews in English with experts on EU policy.

database containing the interviewees' names, role (in the organisation, in the production of the building, or as public), and details including time and location. I kept notes, recordings and transcripts in both hard and digital copies in a safe location. To enable more transparent peer review I referred to the interviewees' names and positions in the draft versions of this thesis, prior to anonymizing them for the final draft. This anonymization was deemed necessary based upon the critical interpretation of interviewees' words and from a desire to protect their professional integrity.

#### **4.8. Processing and analysing sources of evidence**

Analysis in interpretive research is part of (and constitutes) an iterative process whereby the researcher makes meaning of a problem during the process of the formulation of the research question through to the writing of a research report (Yanow 2007). The iterative process of analysing evidence sources I undertook involved: a) note-taking and transcription; b) reviewing sources of evidence; c) coding; d) reviewing memos and coded passages; and, e) the writing and rewriting of narratives. These steps are summarized in Table 4, and have been used to structure this section.

Table 4. Steps involved in the iterative processing and analysis of evidence sources.

Action	Type of evidence source	Purpose
Note-taking and transcription	Observation Interviews Documents	Understanding context Refining problems Identifying themes that arise
Reviewing evidence sources	Observation Interviews Documents Memos	Familiarity with evidence sources Identifying themes that arise Selecting documents
Coding	Interviews Selected documents Memos	Creating categories (who says what about who/what) Reflecting on constitution of preliminary themes (codes)
Reviewing coded passages	Coded section of documents and interviews, memos	Identifying major themes (framings) – codes blended and split Identifying groups of framings and actors
Writing and rewriting narratives	Quotes, memos	Attaining plausibility Identifying missing information – to be filled in by additional source accessing or review
Revisiting notes and evidence sources throughout the process	Narratives, memos, evidence sources	Checking for plausibility and completeness

#### 4.8.1. Note-taking and transcription

Note-taking and transcription took place before, during and after access to evidence sources.

The memos resulting from note-taking constitute a means of accessing and organizing non-verbal sources of evidence, allowing the researcher to preserve reflections at a certain moment in the research. They serve to distil information from documents, observations and interviews, as well as all other analytical processes and may contrast and, if relevant,

inform subsequent analysis. I took notes mostly in English in a multitude of formats and situations, such as in paper notebooks and using phone and computer-based note-taking software (Keep). Emailing memos to myself from my phone was a useful way of ensuring that I would remember to check and process them. Selected memos were then saved in Evernote Premium. For ease of access at later stages, I indicated the topic and date in the title, and then tagged the case study and relevant theme (Section 4.8.3).

Interviews were transcribed and translated using the browser-based Otranscribe tool, which I could use from any computer with or without an internet connection. This enabled me to start transcribing interviews during the period of field research in local libraries and media centres such as Cibernarium in *Media-ICT*, and to include notes about any fresh experiences. I transcribed the remaining interviews once back home. To speed up the process, I simultaneously conducted transcription and translation into English.<sup>35</sup> Recorded interviews were transcribed verbatim, except for passages that diverted from the research topic, in which cases I indicated the time lapse and the topic in the document to permit their review in the case of later relevance. Transcription and translation served to increase my familiarity with the sources of evidence. After completing these tasks, all key observations, documents and interviews were available in text format and ready for analysis.

## 4.8.2. Reviewing evidence sources

After transcription, I conducted an in-depth review of the evidence sources to reveal what was meaningful for different actors, and how they made meaning of energy saving practice.

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<sup>35</sup> The reason I decided to translate the interviews was to ease the access of the dissertation committee to the evidence I had collected, and also to have interviews available in one single language to help with coding and searches for key words.

In line with case study methodology (Eisenhardt 1989; Flyvbjerg 2011), my initial analysis addressed evidence sources on a per-case basis, whilst searching for cross-case patterns. Traveling back and forth between different types and sources of evidence helped to produce and then select emerging themes (Eisenhardt 1989), throughout the fieldwork and desk-based analysis (Yanow 2007). The emerging themes (“policy frames” in Yanow 2007) were then corroborated across multiple cases and, whenever possible, verified through additional sources (e.g. documents, revisiting observations, or follow-up questions posed to interviewees). This analytical process took place throughout the remaining steps of analysis.

#### 4.8.3. Coding thematic and procedural information

The formal process of coding involved the labelling of the narrative passages produced during note-taking and transcription with synthetic annotations; i.e. codes. These were used to enable structured access, review and comparison of narrative passages selected from a type of evidence source, a specific building or type of buildings, or type of participant. I used the software Atlas.Ti version 6.0, which allows textual documents to be labelled with codes and memos.<sup>36</sup> These can then be easily classified, renamed or removed. Reports produced through Atlas.Ti also allow for the review of passages where a single code appears and where sets of codes co-appear. This software also allows the creation of “simultaneous codes” about a specific passage (Saldaña 2009), which could be difficult to manage (i.e. visualize and process) using paper-based coding.

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<sup>36</sup> Newer versions of Atlas.Ti permit the coding of images, videos and audio recordings.

Procedural information was simultaneously coded with thematic information. The former was useful for processing the information and selectively reviewing parts of it according to:

- a) Type of source evidence, type of actor, and name;
- b) Type of actor referred to (elites, policy makers, corporations, experts, citizens, and users);
- c) Case study, or other type of building (commercial, government, corporate or residential) referred to;
- d) Information for processing and publication, including requests for a passage to remain off-the-record and for requests for anonymity, as well as reflections about the reliability of responses (e.g., when I explicitly introduced a theme).

The emerging themes thus coded were theoretically and empirically based, enabling a combination of deduction and induction during the iterative process of analysis. Appendix 5 includes a list of the initial codes. Theoretical codes reflected on the theoretical framework and literature review and served to help explore potential analytical structures. Empirical themes reflected the naming used by interviewees, provided first insights into how they frame energy saving, and how they relate to expert and everyday knowledges.

#### **4.8.4. Review of coded passages**

To review the coded passages I relied on the option of printing out search results and classification conducted through Atlas.Ti. The related searches were intended to explore relationships between coded categories (procedural and thematic), as described in Section 4.8.3. According to Saldaña, time-consuming, bodily and emotional engagement with the sources of evidence, aided by analytical memo writing, allows memories and subconscious



associations to emerge, creating new associations between coded passages; i.e. “serendipity”:

[O]ccasionally answers may suddenly and serendipitously crystallize out of nowhere. But at other times, a piece of the analytic [sic] puzzle may be missing for days or weeks or even months. Rich ideas need time to formulate, so have trust and faith in yourself that these may emerge in due time. But remember that you can accelerate the process through analytic [sic] memo writing. (2009, 29)

Although Atlas.Ti allows the classification of codes into families, for the purpose of reformulating and selecting them I preferred to review the emerging themes by visualizing the coded passages in a spacious room of my choice outside the research lab, where I could visualize and interact with printed reports, together with visual imagery, other documents, and my memos.

The preliminary review of evidence sources, as described in Section 4.8.2, had already revealed the presence of apparently conflicting frames within official narratives, between these and the buildings as observed, and within the narratives of the public. Using the versatile categories described in Section 4.8.3, helped in the study of each source of evidence as a hermeneutic unit, which is an approach commonly applied by phenomenological interpretive analysts (Pietkiewicz and Smith 2012). Also, I analysed the narratives of representatives, experts and laymen publics separately, on a per-case basis, and then reinterpreted them in a comparative manner, mediated by my own reflections from the memos.

#### 4.8.5. Writing and rewriting of narratives

In a process similar to what Saldaña refers to as writing analytical memos during the coding process (2009), I drafted a multitude of narrative and schematic relations between the analytical categories, aided by a printed list of original codes (Appendix 5) that slowly enabled the serendipitous identification of links and plausible explanations. Aided by this process of narrative reflexivity, I distilled assumptions from explanations to “infer the most plausible explanation” (Harman 1965). Plausibility is considered a fundamental criterion for deciding on the validity of an interpretation, provided it is based on a diverse array of evidence sources (Kane 2006; Bevir and Rhodes 2010). Plausibility is also of fundamental importance to van Hulst and Yanow (2014) who consider that the participant researcher should play the role of reframing a problem by creating plausible explanations more than by creating accurate accounts. To ensure plausibility, the process and the resulting draft narratives were discussed with my peers as they evolved. Formal discussions took place in departmental seminars (26 April, 2016 on Methodology, and 23 November, 2016 in relation to a preliminary version of Chapter 6) and at conferences (ESEE 2017 in Budapest, and ERSS 2017 in Barcelona). As my narratives were becoming a plausible and comprehensive explanation of the different evidence sources, I contrasted these explanations by revisiting transcribed narratives and observation-based memos.

An analytical approach intended to differentiate communities of meaning and practice (Yanow 2007; van Hulst and Yanow 2014) informed the structure of the analytical chapters. However, sometimes: a) official narratives appealed to the context of practice; b) laymen publics reproduced expert jargon, and tended to disregard the context of practice; and c) some experts framed energy saving practice from their everyday experience. As a result, it was necessary to put the different framings in perspective to understand how they

were produced. Thus, a major distinction had to be made between official and everyday framings to reveal the dialectics between both expert and everyday epistemologies. The distinction was made to reflect the different degrees of attention paid to the context of practice, especially within the narratives of some expert officials and laymen publics. This separation relates to that proposed in Chapter 3 between everyday meaning-making as related to Lefebvre's made unicity of practice (1991), and elite modes of production supported by the positivist knowledge of experts. It was also inspired by the typology proposed by Janda and Topouzi (2015) that enables the study of framing in terms of "hero", "caring" and "learning stories", according to the relevance granted to contextual aspects proposed in Chapters 2 and 3: a) *coherence* – that I related, inspired by Suchman's definition of legitimacy, to a *hero framing*; and b) *integration* – that I related to a *caring framing*. During the process of analysis multiple references to the context of practice replication, corresponded with a *learning framing*. The eventual separation of communities of meaning resulted in the current structure of the empirical chapters contained in this thesis. These include an analysis of policy narratives and then differentiate official representations from everyday narratives according to whether these were framed in the context of practice.

## 4.9. Chapter summary

The analytical approach and research techniques explained in this chapter permit the empirical study of how official representations and everyday narratives frame energy saving practice in relation to commercial buildings. This is important, because the limited attention paid to the context of practice in official representations could contribute to explaining the below-expected engagement of the public with energy saving – i.e. the

“value-action gap” and the “energy efficiency gap” (Jaffe and Stavins 1994; Blake 1999; Sovacool et al. 2014). The interpretive stance hereby taken was important for countering the dominance of positivist epistemologies and quantitative knowledges in energy saving research, as demonstrated in Chapter 2. The analytical focus on framings allowed the systematic comparison of the relevance granted to the context of practice – and its dimensions that are laid out in Chapter 3 – through different sources of evidence. The former permitted differentiation between: a) representations based on expert knowledge that decontextualise buildings from practice and ultimately legitimize organisations along with the dominant knowledge and practices of experts – what Lefebvre calls the elite production of space, and Janda and Topouzi call “hero stories” (2015) –, and b) everyday narratives originating from everyday experience and relating to the context of practice of the organisation and of the public.

The use of ethnographic enquiry, involving a diversity of techniques and sources of evidence – which I structured through case studies – is justified in studies of everyday meaning (Wallenborn and Wilhite 2014; Guy and Moore 2005b). The diversity of methods, sources of evidence and cases, common to ethnographic research, enabled triangulation. Triangulation, along with the transparent recounting of the systematic and reflective process throughout the empirical chapters, was aimed at creating the trustworthiness necessary for the interpretive research to produce plausible narratives that reframe the policy problem – i.e. the ultimate task of the interpretive researcher (van Hulst and Yanow 2014). This was deemed particularly necessary given the dominance of positivist epistemologies and quantitative methodologies. Finally, the proposed combination of techniques and sources of evidence was also intended to address a series of specific goals:

- a) First, to appraise the contradictions that occur within official representations – hence requiring a document review, interviews with representatives, and observation – and between official representations and everyday narratives – requiring interviews with a diversity of laymen – user and passer-by – publics as well as reflection on my own experience;
- b) Second, interviews with the public, along with my own observations and reflections, were intended to contrast my intentionally subjective analysis with the tacit analysis engaged in by a diversity of publics – increasing the trustworthiness of my findings;
- c) Third, the study of government policies in the EU, Spain, Catalonia and Barcelona and the four cases was intended to help assess the generalizability of my findings, and to screen-out those of an anecdotal nature.

The following three chapters are the result of my reflective engagement with the sources of evidence that were accessed, and incorporate the recounting of empirical theory to contribute to the plausibility of my claims. It was my aim to communicate transparently my reflections and to situate the sources of evidence, thereby enabling the reader to judge the trustworthiness of my interpretations. Aligned with the research questions, as re-defined in this chapter (Table 2), I have differentiated between the study of policy narratives (Chapter 5), official representations in and about buildings (Chapter 6), and everyday narratives (Chapter 7).

## Chapter 5. Policy discussions and reflections

This chapter primarily addresses Question 1: *How do EU, National and City policies in Barcelona frame energy-saving practices in commercial buildings?* Accordingly, I address whether and how government narratives and their implementation in practice appeal to or conceal the context of practice, thereby highlighting their contradictions and showing the existence of the political interests potentially underlying these contradictions and the choice of framing.

The chapter is structured along the policy-making levels relevant for the study of buildings in Barcelona. First, I analyse the EU policy framework that regulates the exemplary role of commercial buildings in Member States. Second, I examine the implementation of EU exemplary requirements in Spain, where autonomous communities such as Catalonia have devolved attributions. Third, I analyse the narratives and practices of Barcelona City Council about its buildings. Throughout the chapter I build the argument that government policies – relying on positivist knowledge – de-contextualise practices, ultimately contributing to veiling organisations from public scrutiny and – aligning with theoretical claims presented in Chapters 2 and 3 – potentially countering the development of everyday epistemologies, critique, and practice.

### 5.1. EU exemplary requirements

Of fundamental importance to EU institutions is extending their legitimacy and the regulatory rule of the EU, ultimately contributing to its statization (Elden 2004). European Union policy conceptualises energy saving as energy efficiency and performance. These conceptualisations are claimed to serve the purpose of legitimating the Union in front of

citizens – by championing environmental protection – whilst maintaining consumption levels and securing economic growth – by fostering investment in efficient, renewable and smart technologies, and not threatening energy consumption (Talus 2013). It has been argued that the increase in attention paid to defending the environment as a common Union value resulted from the loss of legitimacy marked by the constitutional crisis of 2005 (Best et al. 2005). Energy efficiency provides an opportunity for the EU to expand its attributions over Member States and markets by building on the principle of subsidiarity (Talus 2013; Torfing 2006).<sup>37</sup> This rationale explains EU reliance on market instruments such as the provision of information which enables EU institutions to “govern at a distance” and gain new attributions (Talus 2013). Moreover, high-level targets that are trickled down onto exemplary goals through EU directives are of an unknown technical or scientific rationale, and criticized for seeking political legitimacy instead of realizable achievements (Kanellakis et al. 2013). The analysis of the narratives about exemplary buildings in EU directives further supports this argument.

Further supporting claims about the legitimating rationale of energy saving policy for the EU is the requirement that Member State governments implement exemplary requirements for government and commercial buildings.<sup>38</sup> Member States are encouraged to abide by the same principles to avoid reports and resolutions for under-compliance, and to maintain their legitimacy in the eyes of citizens. However, EU institutions are not required to abide by this requirement and, furthermore, reportedly do not abide by this principle (European Court of Auditors 2014). As echoed by the media, “the EU ignores its

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<sup>37</sup> The principle of subsidiarity, as laid down in the Treaty on European Union, establishes EU rule over matters which could jeopardize market competition.

<sup>38</sup> These exemplary requirements are currently specified in Directive 2018/844 that amends Directive 2010/31/EU on the Energy Performance of Buildings, and Directive 2012/27/EU on Energy Efficiency.

own building efficiency initiatives” (Crisp 2014). This suggests that the EU applies a double-standards regarding its own buildings and those of Member State governments.

Analysis of the diverse *naming* and *subject* of the exemplary function in EU directives as shown in



Table 5 indicates the lack of an articulate approach to this particular policy instrument.<sup>39</sup> Requirements apply to government buildings, but also refer to “frequently visited by the public” in the directives of 2002 and 2010.<sup>40</sup> Moreover, the diverse *rationale* of the directives lacks disambiguation from other instruments such as demonstration and procurement. Only the preliminary formulation in the Directive of 1993 refers to the need of governments to “also” abide by the same principles required of third-parties, aligning with the rationale of transition theorists who demand “coherence” between the policy and practice of the government (Jackson 2009). Whilst reference to aspects of “coherence” as a mechanism for attaining credibility for policy messages is missing from the articles of the directives, economic- and market-based instruments of procurement and information provision are thoroughly regulated (referred to as ‘why’ and ‘how’ in the table). Thus, the EU regulation of exemplary buildings is unclear, and seems to be associated with an economic and market rationale, which as a result could lead to the confusion of an instrument intended to address everyday epistemologies with others with an economic and positivist basis, as discussed in Section 2.3.

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<sup>39</sup> Of note, EU Directive 2018/844 amends the directives on Energy Performance of Buildings of 2010, and on Energy Efficiency of 2012. It was not included in the table because it does not fundamentally revisit the related aspects.

<sup>40</sup> This has not been amended in EU Directive 2018/844.

Table 5. The ‘what’, ‘who’, ‘why’, ‘how’, and ‘to whom’ of the exemplary function in EU Directives.

	<b>SAVE 1993</b>	<b>EPBD 2002</b>	<b>ESD 2006</b>	<b>EPBD 2010</b>	<b>EED 2012</b>
	Repealed by ESD 2006	Repealed by EPBD 2010	Recast in EED 2012	Repeals EPBD 2002	Recasts ESD 2006 <sup>41</sup>
<b>WHAT (naming)</b>	Set an example*	Set an example*	Exemplary role	Lead the way* Lead by example* Set an example* Leading example Leading role	Leading role Exemplary role
<b>WHO (the subject)</b>	Public authority buildings	Public authority buildings Buildings frequently visited by the public	Public sector	Public sector Buildings occupied by public authorities & Buildings frequently visited by the public	Public bodies' buildings
<b>WHY (rationale)</b>	Governments are “also” required to do what is required of citizens	Enhance dissemination of information*	Multiplier effect*	Enhance dissemination of information*	Focus on procurement (supposedly with a market effect upstream)
<b>HOW (instruments)</b>	Third-party financing, although not referred to as exemplary	Certificates (visible display) Indoor temp.	Procurement Communication (Pilot projects, behaviour)*	Certificates (adoption, display and implementing recommendations) NZeB standard	Requires 3% renovation target Procurement & third party financing
<b>TO WHOM (citizens' role)</b>	Users (building)	Use, comfort Users, the public	Users' and customers' behaviour	The public (visiting)	-

(\*) indicates that explicit reference to this item is made in preamble only.

<sup>41</sup> SAVE Directive (Council of the European Communities 1993); EED Energy Efficiency Directive (European Parliament and Council of the European Union 2012); EPBD Energy Performance of Buildings Directive (European Parliament and Council of the European Union 2010; European Parliament and the Council 2002); ESD Energy Saving Directive (European Parliament and Council of the European Union 2006).

Currently, four major instruments regulate the exemplary function, granting EU control over customary attributions of national decision-makers regarding the procurement, financing, operation, renovation, and commissioning of government buildings, and regulating other commercial buildings:

- a) Purchasing regulations specify a choice of “products, services and buildings with high energy-efficiency” (EU 2012, Art 6) and require the outsourcing of energy saving practice to financing actors, reducing the role of governments to “contracting authorities” and “administrative departments” (EU 2012 Art. 2: 8, 9);
- b) Regulations about the early adoption and display of Energy Performance Certificates force organisations to be transparent about their performance; moreover, an incipient regulatory framework applies to government buildings, which are required to “implement the recommendations included” in certificates (EU 2010 Art 11:5);
- c) The requirement that Member States governments renovate annually 3% of buildings “owned and occupied by [the] central government” (EU 2012, Art 5) – this is the first quantitative target defined for Member States in the EU energy efficiency policy (Kanellakis et al. 2013);
- d) The requirement to define and early adopt a Nearly Zero-energy Buildings (NZeB) standard in government buildings (EU 2010, Art. 10) constrains the leverage of governments to decide on the rhythm and intensity at which their buildings are renovated.

These instruments show progress towards the creation of a regulatory framework under the auspices of the EU. Supporting this argument, Energy Performance Certificates constitute the only means of communicating energy consumption in commercial buildings to the public.<sup>42</sup> Consumption is only referred to in the quantitative terms of energy consumption and CO<sub>2</sub> emissions, failing to encourage comparison or addressing how and why commercial buildings relate to the policy context, to the practices of the organisation – that would enable scrutiny –, and to those of the public – that would foster learning and replication. Moreover, there is no requirement for the potential savings resulting from recommendations in Certificates to be stated in the labels displayed to the public. There is also no requirement for certificates and labels to break down forms of energy use – as available on the certificates of some countries. Although this situation is addressed in countries like the UK, the labels in countries like Spain, do not reveal this information (Figure 10 and Figure 11). Publicizing this information could serve the purpose of enabling public scrutiny, pushing organisations to address the recommendations. It can be understood that the EU Certificates constitute progress in the extension of the EU rule over national citizens, reducing their role to recipients of information (accordingly, they are referred to as “the public” in EU 2010 Preamble: 24; Arts. 12, 13). This passive role would facilitate the public acceptance of the EU rule, hence aligning with the arguments of Talus (2013).<sup>43</sup> Moreover, as shown in the final row of

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<sup>42</sup> A former official from the EU Commission confirmed that there are no provisions beyond the use of certificates to address the public perception of energy-saving practices in commercial buildings (pers. comm. 2014).

<sup>43</sup> Only as building owners, the public has to abide by building certification requirements but are not required to implement the recommendations included in these documents (EU 2010, Art. 11, 12, 13).

Table 5, energy-saving practices have been increasingly reduced to technologies. References to “energy saving decisions”, “energy use”, “building use”, and “comfort” in previous directives (EU 1993, 2002, 2006) have disappeared in the directives of 2010 and 2012.<sup>44</sup> This shows the marginalization of public experience and practices, and aligns with the claims of critical reviewers about the current techno-economic framing of energy saving in commercial buildings having a legitimating function (Lutzenhiser 2014; Moezzi and Janda 2014; Janda and Topouzi 2015).

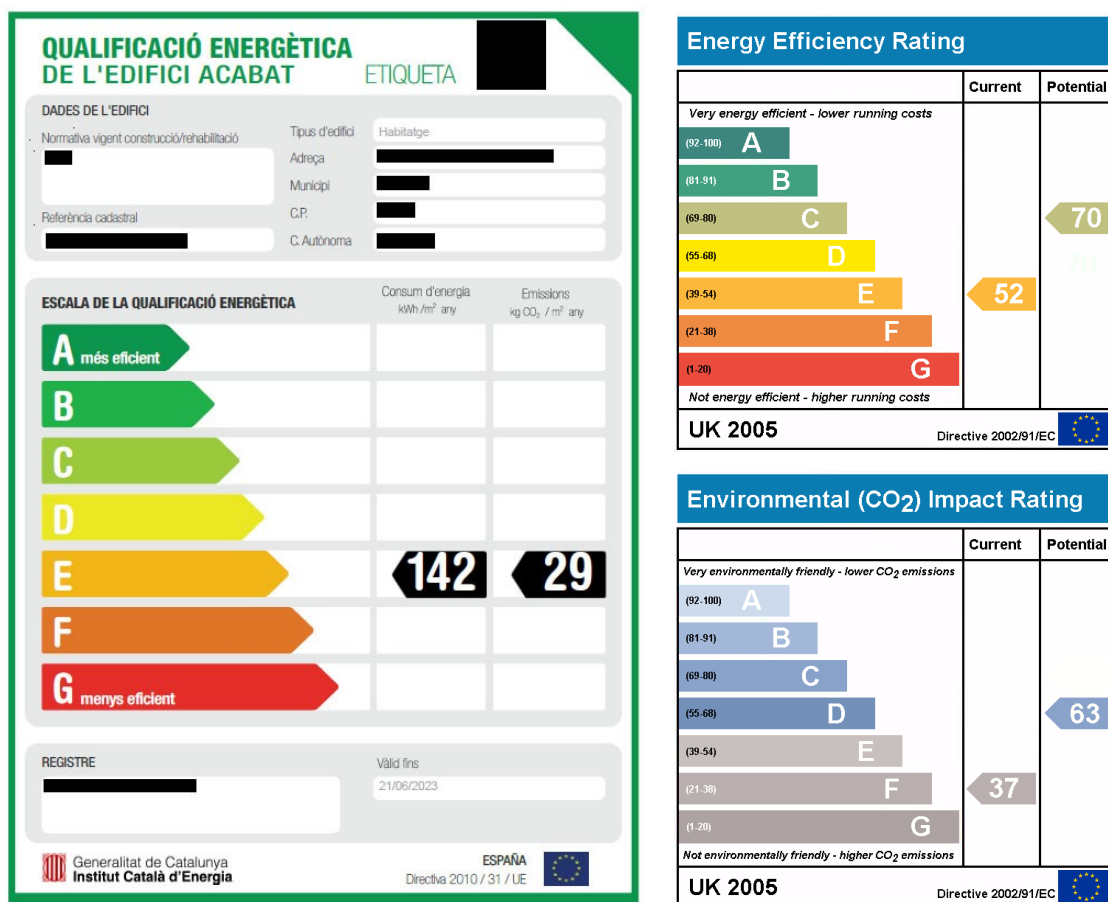
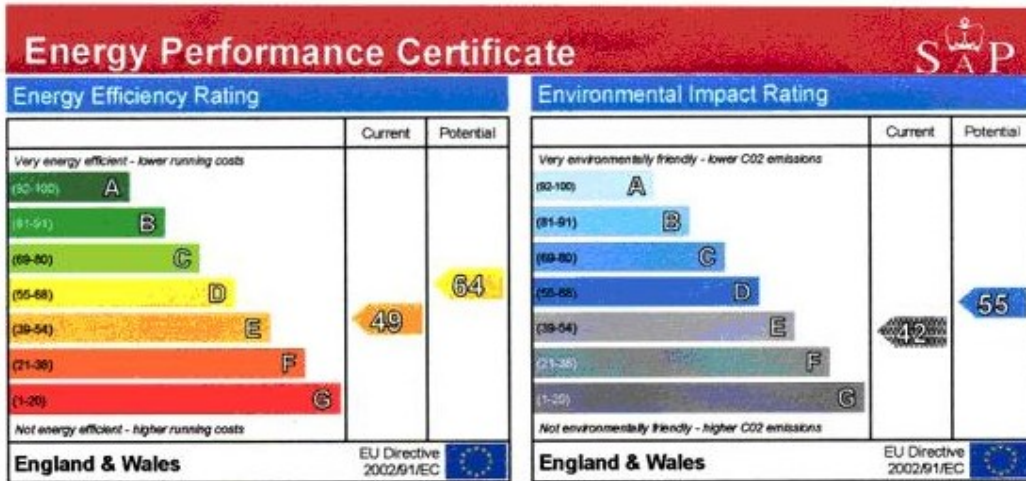


Figure 10. Examples of energy labels in Spain and the UK. Source: Ceec 2016 (available at <https://clusterenergia.cat/news/crida-de-licaen-a-les-inmobiliaries-cal-fer-una-c>; and Gralo 2006 (available at <https://commons.wikimedia.org/w/index.php?curid=13350090>).

<sup>44</sup> For instance, in the Directive of 2012 “use” and “comfort” were invoked as key aspects of the setting and communication of “officially recommended” and “actual” indoor temperatures (Art 7:3, Preamble: 16).



The energy efficiency rating is a measure of the overall efficiency of a home. The higher the rating the more energy efficient the home is and the lower the fuel bills will be.

The environmental impact rating is a measure of a home's impact on the environment in terms of carbon dioxide (CO<sub>2</sub>) emissions. The higher the rating the less impact it has on the environment.

**Estimated energy use, carbon dioxide (CO<sub>2</sub>) emissions and fuel costs of this home**

	Current	Potential
Energy use	338 kWh/m <sup>2</sup> per year	241 kWh/m <sup>2</sup> per year
Carbon dioxide emissions	8.4 tonnes per year	6.1 tonnes per year
Lighting	£114 per year	£63 per year
Heating	£715 per year	£534 per year
Hot water	£246 per year	£183 per year

Based on standardised assumptions about occupancy, heating patterns and geographical location, the above table provides an indication of how much it will cost to provide lighting, heating and hot water to this home. The fuel costs only take into account the cost of fuel and not any associated service, maintenance or safety inspection. This certificate has been provided for comparative purposes only and enables one home to be compared with another. Always check the date the certificate was issued, because fuel prices can increase over time and energy saving recommendations will evolve.

To see how this home can achieve its potential rating please see the recommended measures.

Remember to look for the energy saving recommended logo when buying energy efficient product. It's a quick and easy way to identify the most energy efficient products on the market. For advice on how to take action and to find out about offers available to help make your home more energy efficient call 0800 12 012 or visit [www.energysavingtrust.org.uk/myhome](http://www.energysavingtrust.org.uk/myhome)

Figure 11. Example of an Energy Performance Certificate in the UK.  
Source: <http://www.invictaepc.com/epc>.

Apparently responding to a legitimating and statizing function, reductionist conceptualisations of energy saving and of exemplary buildings decontextualise energy saving practice. A pre-existing rationale about improving policy credibility and public responses through increasing the coherence between policy requirements and practices of governments seems to have been overtaken by a focus on technologies and economic

decision-making, which appears to be related to the legitimating function of energy saving policy and practice. In the following sections I show how this is reflected in terms of its implementation in Spain.

## 5.2. Spanish-Catalan implementation and politics

In Spain, the governments of autonomous communities have devolved attributions in the implementation of energy saving directives. Because they own and administer building stock, they are required to implement EU exemplary requirements.<sup>45</sup> In this section, I show that the Catalan Government may have also used its implementation of EU directives as a means of obtaining legitimacy in the eyes of the voting public and the EU, and to gain negotiating power for more devolved attributions from Spain.

Since the inception of the Spanish democratic regime in 1975, the Central Government has been led by two parties: the Social-Democrat PSOE (in office from 1982-1996 and 2004-2011) and the Conservative PP (1996-2004 and 2011-2016) (Appendix 6).<sup>46</sup> Until 2015, the Catalan Conservatives of CiU alternated time in office in Catalonia and in Barcelona with the Catalan branch of the Spanish Social-Democrats (the PSC-PSOE).<sup>47</sup> During this period, Spanish governments relied on the support of Catalan parties in return for devolution deals. Countering this process, the global financial crisis that started in 2007 increased political and fiscal centralization. Spain and Catalonia lost

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<sup>45</sup> The Directive of 2012 refers in Art. 2 to “all administrative departments whose competence extends over the whole territory of a Member State”. This requirement is extensive to regional and local governments (Preamble: 10, 15, 17, 18).

<sup>46</sup> PSOE stands for Spanish Socialist Workers' Party, PP for People's Party and CiU for Convergence and Union.

<sup>47</sup> CiU was in office in Catalonia during the periods 1980-2003, 2010-2016, and in Barcelona during 2011-2015. The PSC (Catalan Socialist Party) led the government in Catalonia during the period 2003-2010, and in Barcelona for the period 1979-2011.

borrowing and spending autonomy, making way for the mutual blaming of both governments for the ongoing welfare cuts (Colino and del Pino 2017, 218).

During my field research, news questioning the independence of the government in relation to energy, banking and construction interests were common in the press. Multiple influential politicians were on the boards of directors of these corporations (



Table 6).<sup>48</sup> A series of political corruption scandals affected the two incumbent parties at the time in Catalonia and Spain (Catalan News 2013; Jones 2018; Burgen 2013).<sup>49</sup> Protests against the corruption and the dismissal of citizen interests by elites (“*la casta*”) coalesced in the Indignados Movement taking to the squares in May 2011 with slogans like “We have had enough of crooked politicians!”<sup>50</sup> These protests continued during the time of my field research (Figure 12 and Figure 13). In this context, nationalist debate was inflamed by the Conservative parties in office both in Spain and Catalonia. This debate diverted public attention from ongoing welfare cuts.<sup>51</sup> I will show in Chapter how this public discontent towards the government and corporations reflected in the public appraisal of energy-saving practices.

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<sup>48</sup> A total of 43 influential politicians have reportedly been hired by energy companies (Suarez 2014), including two former Prime Ministers (Gonzalez –PSOE- and Aznar – PP, who were hired by the two major energy companies which they themselves privatized; i.e. Gas Natural and Endesa) (Lara 19 April, 2013, intervention in the Spanish Parliament). Another 12 politicians have reportedly been hired by construction and banking corporations (Clavero 2017). Most of these politicians are from PP, but some are also from PSOE and from regional parties, including the ruling party at the time in Catalonia (CiU).

<sup>49</sup> For instance the *Palau Case*, and the *Gürtel Case* – which respectively affected cadres of CiU and PP. The former was prosecuted from 2009 until 2017; the latter from 2009 until 2018.

<sup>50</sup> The original expression was “*No hay pan para tanto chorizo!*”

<sup>51</sup> The nationalist conflict escalated into a short-lived declaration of independence in October 2017, the Spanish Government taking control of Catalan Autonomy and bringing a lawsuit against the Catalan Government, ultimately taking up most of the media attention.

Table 6. “List of current politicians hired by companies from regulated sectors”.

<b>Politician</b>	<b>Party and former government position</b>	<b>Corporation</b>
Elena Salgado	PSOE, Minister of Economy and Finance and First vice-president	Endesa
Ángel Acebes	PP, Minister of Interior and of Justice	Bankia
Josep Piqué	PP, Minister of Foreign Affairs	Grupo Ferrocarril, Vueling, Applus and others
José María Michavila	PP, Minister of Justice	Jp Morgan
Pedro Solbes	Independent associated to PSOE, Finance Minister	Enel (Endesa), Barclays
José María Aznar	PP, Prime Minister	Endesa, Holding Murdoch
Felipe Gonzalez	PSOE, Prime Minister	Gas Natural
Eduardo Zaplana	PP, Minister of Labor and Social Issues, amongst others	Telefónica
Rodrigo Rato	PP, Ministry of Economy and Treasury, vice president	Lazard, Santander and Bankia
Isabel Tocino	PP, Minister of Environment	Banco Santander
Josu Jon Imaz	PNV, Basque Minister of Industry, Trade and Tourism	Petronor
Alfredo Timmermans	PP, State Secretary of communication	Telefónica
Luis de Guindos	PP, Minister of Economy, Industry and Competitiveness	Lehman Brothers

Source: Encinar (2012).



Figure 12. Protests in front of the headquarters of PP in Madrid.  
Source: Popicinio (2013).



Figure 13. Protest in front of a branch of the BBVA Bank in Barcelona.<sup>52</sup>

I will show how energy saving policies reflected the context and, potentially, the vested interests of politicians. At the beginning of the crisis, energy saving was promoted as part of the Green New Deal of the Social-Democrats (IDAE 2005; Government of Spain 2007) and the budgetary restrictions required by the EU were introduced (Royo 2009).<sup>53</sup> Then, the Conservatives from PP further removed and countered energy-saving practices with policies like the Royal Decree 235/2015 that made in-house renewable generation uneconomic – hence known as the “Solar Ban” –, and initiated an increase in fixed utility costs. The positioning of the Spanish government was further made clear in the reporting of Spain to the EU (Government of Spain 2014b, 2014a, 2015). These reports indicate the limited interest in the efficiency of buildings, and limited transparency regarding the status of government building certification (BPIE 2014, 2015). The reports included arguments against improving efficiency due to its potential to counter economic development:

[U]nder the new Directive only short term savings would be considered, driving away efficient investments which would have generated substantial economic activity. (Government of Spain 2014b, 3–4)

Similarly, the “cost-optimality” of NZeB standards was questioned in reports of the Government of Spain (2014a, 26-29) to justify their lagging development and implantation (Ecofys 2014). Economic arguments and a disregard for the social-transformative effect of government practices served to justify limited action. Added to this limited commitment, a flexible alternative to the 3% annual renovation target was chosen (Government of Spain 2014b) obscuring the reporting of the exemplary role of government buildings (BPIE

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<sup>52</sup> The posters read: "There is no lack of money, just too many crooks", "This bank steals", and "BBVA supports football [league] and evictions".

<sup>53</sup> The Renewable Energy Plan 2005-2010 (IDAE 2005) was intended as to assist in the early adoption of EU targets as a means of economic development.

2014). More specifically, the flexible alternative served to conceal the fact that savings were being attained mostly through a reduction of stock, leaving it unclear whether this involved the removal of unnecessary buildings or privatisation.<sup>54</sup>

The exemplary action of the Catalan Government was also described as lacking commitment and transparency. A senior engineer who consulted for the Catalan government on building energy management claimed that this lack of transparency responded to a desire to conceal a shortage of action, since “they should be doing the 3% [annual energy renovation of government buildings] to be exemplary, and to make an example, but they have not done anything” (pers. comm. 2015). The exemplary reporting of the Catalan government included in the Spanish reports to the EU was framed as the “rationalisation” of resources and significant reliance on the privation of building stock (Government of Spain 2014b, 104–110). Exemplary requirements thus contributed to the privatization of buildings of both the Spanish and the Catalan governments. Such a privatization process was due to the need for liquidity in a context of financial restrictions but resulted in losses and the need to rent the same or other premises (Catalan Government 2013; Picazo 2013; Palou 2013; Altimira 2016, 2017; La Vanguardia 2012). This outcome is problematic because the lack of ownership of the buildings occupied by Catalan government agencies results, according to government officials such as a senior representative of ICAEN (the Catalan Institute of Energy), in limited leverage in terms of saving energy (pers. comm. 2015). Thus, in the case of Spain and Catalonia it appears that the prevalence of an economic rationale in meeting EU requirements for exemplarity – as described in Section 5.1 – contributed to the privatisation of government stock, ultimately

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<sup>54</sup> The measures equivalent to meeting the 3% target (318,833 sqm) reported in the annual report of 2015 consisted mostly of the “sale, demolition and removal from use” (272,979 sqm), with “rehabilitation” and new buildings marginally contributing to compensating for this loss of area (32,872 sqm and 700 sqm, respectively) (Government of Spain 2015, 29-30).

countering energy saving efforts and the provision of transparent communication to the public.

Supporting this argument, during the field research there was a general lack of availability – even following requests – for disaggregated data about the status of certification and the ratings of government buildings in Catalonia. This limited transparency was justified, according to a senior representative of ICAEN by financial challenges blamed on the Spanish government, and the need to allocate limited resources to action which would financially pay off (pers. comm. 2015). It appears therefore that an economic rationale and a desire to maintain government practices veiled from public scrutiny prevailed over saving energy and transparently communicating practices to the public. This also shows advances in the construction of an EU regulatory framework whereby governments are reduced to economic administrators of their buildings which are overseen at a distance, as argued by Talus, through economic and market mechanisms (2013). Aligned with the theoretical framework of this research, positivist epistemologies were instrumental to this end.

Regardless of the limited effort to enact and communicate its energy saving practice, Calzada argues that the Catalan Government continued during the financial and nationalist crisis to seek popular and international legitimacy by proclaiming its energy saving values (2017). Aligning with the claims of Colino and del Pino (2017) introduced earlier, such limited achievements were blamed on Spain for the insufficient devolution of policy attributions, and presenting the Catalan Government as a devotee of the EU and its energy saving principles (Rius, Director of ICAEN, public presentation in Construmat, 22-05-2015; Morer, Head of Energy Efficiency unit of the ICAEN, public debate in Construmat, 20-05-2015). Thus, in the framework of the 2007 financial crisis, financial

and government centralization, and Spanish government politics against energy saving, the implementation of EU directives about energy saving constituted during the study period an opportunity for the legitimation of the Catalan government. Aligned with the theoretical framework of this dissertation, legitimacy was attained by dwelling on the economic rationale of energy efficiency, which furthermore served to justify the limited commitment and transparency of government agencies, hence diverting scrutiny from limited and furthermore dubious energy-saving practices such as the privatisation of buildings.

### **5.3. Barcelona Council policies**

Following the arrival of democracy until the 2011 elections Barcelona City Council (“the Council”) was led by the Social democrats of PSC who formed a coalition with leftist and leftist-green parties, and increased policy attention to environmental and energy saving matters. The period 2011-2015 was governed in minority by the Catalan Conservatives of CiU who collated Urban Planning and Environmental Education and Informatics into the “macro-department” for Urban Habitat, which was put in charge of making Barcelona a smart city.<sup>55</sup>

It has been argued that, under the governments of the Social Democrats and the Catalan Conservatives, architects gradually came to occupy executive positions, thereby fostering Council strategies that relied on technological innovation, signature buildings and landmark projects. These strategies were questioned for prioritizing “design” over “use”, and for marginalizing environmental and social problems in their pursuit of Council legitimacy and attracting investment to the City (Thornley 2011; Marshall 2000). The same

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<sup>55</sup> Since the elections of May 2015 that occurred before the end my field work, a new Leftist Coalition has governed in minority, under the banner of Barcelona en Comú. Their policy and practice is not part of this study.

has been argued for the council strategies of saving energy, and particularly their smart conceptualisation (Charnock et al. 2014; March and Ribera-Fumaz 2016). I have summarized the policies that directed the Council practices for its buildings during this period in Table 7. (A more extensive summary of the Council government's composition and its most relevant policies can be found in Appendix 7). In the following sections I reflect on the extent to which these policies correspond to three framings inspired by the types of stories proposed by Janda and Topouzi (2015): a) a *legitimizing framing of innovation and singular exemplars*, which prevails over; b) a *caring framing of integration*; and c) a *learning framing of replication*.

Table 7. Reviewed strategic, energy saving and procurement policies of the Barcelona City Council.

2000 Solar Thermal Bylaw for Buildings
2001 Government Measure on the Greening of Council Services
2002 People's Commitment to Sustainability
2002 Barcelona Energy Improvement Plan (BEIP)
2005 Green Office Guide
2006 Guide + Sustainable City Council Programme
2009 Council Buildings Energy Improvement Plan (CBEIP) 2009-2011
2011 Plan for Energy, Climate Change and Air Quality of Barcelona (ECQP) 2011-2020
2011 Basic Guide to Energy Efficiency in Council Buildings
2012 Citizen Commitment to Sustainability 2012-2022
2012 The politics and management Deal (Council Action Plan for 2012-2015)
2013 Government Measure and Instruction by the Mayor's office for Responsible Public Procurement with [sic] Social and Environmental Criteria
2015 Technical Instructions for the Application of Sustainability Criteria



### 5.3.1. Legitimizing framing of innovative and singular exemplars

Following the People's Commitment to Sustainability document (Barcelona City Council 2002b), the Barcelona Energy Improvement Plan was intended to address the “environmental concern existing in the City, at the source of increasing interest in limiting the environmental impact of energy consumption”. The plan also recognised that “energy intensity” is necessary for economic development and improving comfort (Barcelona City Council 2002a, 5). During times of energy sector liberalization, the Council engaged with grid management and local generation – from renewable and fossil sources – as a means of improving “quality of supply”, and “promot[ing] new technologies”, and overall contributing to “positioning the City” (Barcelona City Council 2002a, 32-36; 2011, 116-123) (Figure 14). The Council's commitment to saving energy thus responded to a dual rationale similar to the one argued for by Talus with regard to EU energy efficiency policies (2013).<sup>56</sup> It pursued on the one hand a set of accepted values which according to Suchman are a source of legitimacy (1995), but also economic development that overall appropriate a specific area of governance, as argued by Calzada (2017).

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<sup>56</sup> This alignment with the rationale of the EU crystallized in the formulation of energy saving targets under the auspices of the Covenant of Mayors promoted by the EU (Barcelona City Council 2011). The Covenant encourages councils to pursue outstanding energy saving targets, framed as global commitments to climate change mitigation. According to Swyngedouw and others, these targets serve to legitimate organizations as being best equipped to deploy certain practices which are not accessible to the public in terms of mitigating climate change (2010).

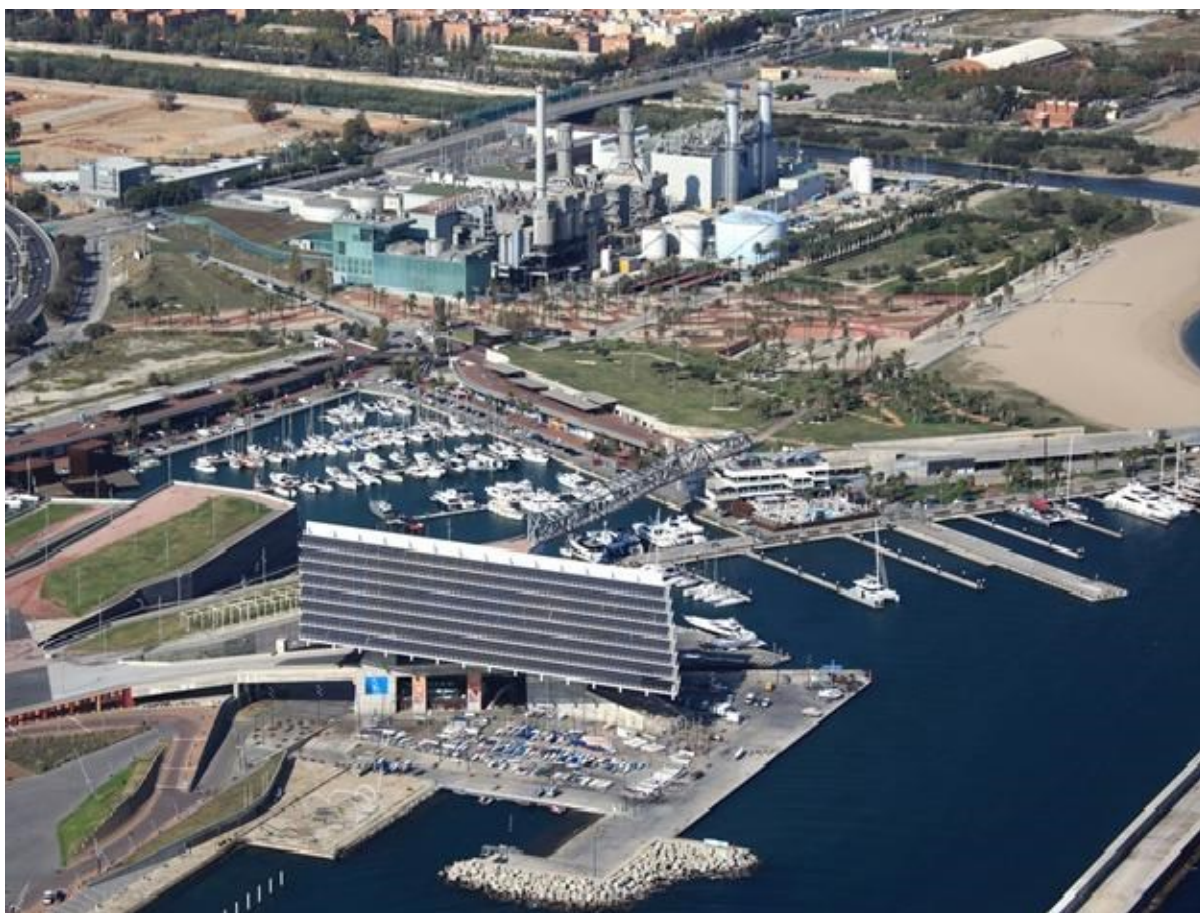


Figure 14. The Park of the Forum (2004) with thermal and photovoltaic plants.  
Source: [www.tersa.cat](http://www.tersa.cat).

Energy saving was increasingly re-conceptualised as “self-sufficiency”, and “efficiency” became dependent upon the utilization of smart technologies, having the overall effect of reducing energy saving to the deployment of innovative technologies, as shown in the formulation of the Citizen Commitment to Sustainability 2012-2020 with the subtitle “For a more equitable, prosperous and self-sufficient Barcelona” (Barcelona City Council 2012c).<sup>57</sup> This reconceptualisation of sustainability and energy saving was successful at earning the trust of international actors (Council Official from Urban Habitat,

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<sup>57</sup> The Commitment contains claims such as: [A] smart city ... uses ICT (information and communication technologies) to provide an infrastructure to assist in sustainable development, the efficient use of resources, increasing the quality of life of people, social inclusion and citizen participation” (31). “Innovation” was also considered a stand-alone goal in the Energy, Climate Change and Air Quality Plan of 2011 (Barcelona City Council 2011, 39).

pers. comm. 2015). It also served to agglutinate the market, making it attractive as an investment opportunity for big companies, but also confused the public by diverting attention away from the social and environmental goals of saving energy (Senior representative of the Energy Efficiency Council of Catalonia, pers. comm. 2015). Similar confusion has been also identified in relation to reviews of smart cities, whose focus on technological innovation may obscure the contradictions of the regulatory, social and institutional system (Fernández González 2016; Baccarne et al. 2014).

The contradictions and political utilization of the smart city include in Barcelona the process of capital accumulation resulting from continued influx from Catalan Government money in the technological district of Barcelona (the “22@ District”) during times of market saturation (Charnock et al. 2014; March and Ribera-Fumaz 2016). According to Calzada, the Catalan investment in the city responded to a “smart devolution” rationale involving the creation of a leading economic city for the purpose of building legitimacy in the eyes of crisis-hit publics and the international community, thereby contributing to the statization of Catalonia (2017).<sup>58</sup> These arguments are plausible according to the context introduced in Section 5.2, whereby the Catalan Conservatives of CiU held office in both Catalonia and Barcelona. Thus, it can be argued that by relegating the environmental goals of saving energy behind economic and technological development goals, a new area of governance was created for the city, legitimating the Council for coherently abiding by energy saving values which are rather empty values about technological progress and design that enable what Lefebvre (1991, 6) calls a “banal consensus”.

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<sup>58</sup> This argument is plausible in a context wherein Catalan Conservatives held office both in Catalonia and Barcelona during a period of acute financial and political crisis, supporting my argument in Section 5.2 about the Catalan use of energy saving to attain legitimacy and divert attention from questionable politics.

In addition to “innovation”, the Council plans also recognised “high visibility” and “public impact” exemplars as a means of showing Council “leadership” and “position[ing] Barcelona... as a highly competitive city” (Barcelona City Council 2002a, 224, 239, 2009b, 3, 2011, 7, 18). As in the case of references to innovation, these commitments again show the prevalence of a legitimating and economic development rationale.<sup>59</sup> Communication with the public was undertaken through the “demonstration” of “new technologies” in “singular” projects “with an important component of visibility”, as a means of “promoting nowadays’ most efficient generation technology” (Barcelona City Council 2009b, 3).<sup>60</sup> Although some of these projects were used to publicize the City’s commitments in international communications that appealed to corporations to (re)locate in Barcelona (Figure 15), their communication to the public, and an explanation of how these buildings relate to the Council practice and that of the public was not explicit.

An example of the latter is the Council plan to communicate through specific photovoltaic projects in schools and universities recognised for their “educative and demonstrative role towards the citizenship” (Barcelona City Council 2002a, 78; 222). Accordingly, the Council deployment of innovative technologies is represented in decontextualised singular exemplars that divert scrutiny from the context of the Council practice. This corresponds therefore with a “heroic” in the sense used by Janda and Topouzi (2015) and “monumental” framing as used by Lefebvre (1991) whose function is to

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<sup>59</sup> This refers to the Barcelona Energy Improvement Plan of 2002, the Council Buildings Improvement Plan of 2009 and the Energy, Climate Change and Air Quality Plan of 2011.

<sup>60</sup> The projects referred to included the Forum 2004, the 22@District, and the installation of a photovoltaic plant at the Council Hall buildings (Barcelona City Council 2002a; 2009b). Highly efficient co-generation in the Council Hall buildings would have “an important component of visibility because the action is located in a singular building” (Barcelona City Council 2009b, 6). Most recently, the Council Action Plan for 2012-2015 involved “[f]oster[ing] self-sufficient city blocks and urban energy infrastructure refurbishment...to add value to the city [and]...to make Barcelona an international benchmark in the field” (Barcelona City Council 2012a, 88, 92); a goal which would inspire the *Efficient Block* project, discussed in Section 6.5.

legitimate the Council whilst it has the effect of alienating the public. In the following section I study the Council programs and narratives that frame energy-saving practices in the context of the Council's practice.



Figure 15. Singular projects in international communications.  
Source: Barcelona City Council (2009a, n.p.).

### 5.3.2. Caring framing of integration

Council practices and their communication to the public tended to disregard the integral adoption of practices that, being potentially mainstreamed by the Council, were also likely to be replicable by the public. According to Council Officials of the Barcelona Energy Agency (#1 and |2), this preference of the Council reflected the will of both politicians and communication services. The latter became increasingly centralized along with the creation of the Department of Urban Habitat and the reconceptualisation of energy saving practice as smart (pers. comm. 2015), hence limiting the leverage of the Energy Agency and Environmental Education agencies regarding project-specific communication. This is also reflected in the budgetary reporting of the Barcelona Energy Agency (2014, 78).

Council communications about the practices of the Council tended to focus on experts and Council staff, understood as those individuals who implement Council plans (Barcelona City Council 2011, 355), hence granting relevance to staff appraisals of the organisational commitment to successful engagement with the plans. Specific communication to the external public about the Council buildings and the provision of disaggregated information about them was fostered only after the Council Buildings Energy Improvement Plan of 2009 which, responding to EU Directives,<sup>61</sup> was intended to “[m]ake visible the Council commitment” (Barcelona City Council 2009b; 3). The Energy and Climate Change and Air Quality Plan for 2011-2020 disaggregated for the first time the activity of the City from the Council’s plan, and assessed actual consumption (Barcelona City Council 2011, 228) (Figure 16). It acknowledged the need to demonstrate the integration of energy-saving practices to transform public attitudes and “dispel myths” (Barcelona City Council 2011, 14). However, whilst the City program was thoroughly discussed, with the public, the Council program was discussed only during one session (ibid, 11). Aligning with the literature reviewed in Section 2.9 (Bowen and Aragon-Correa 2014; Greenberg 2014), vocal claims, alongside limited transparency and participation, potentially explain public mistrust problematized as “myths” by the Council.

The mechanisms of communicating the integral adoption of energy-saving practices to the public were not developed in subsequent plans and specific policies. For instance, the basic guide to energy efficiency in Council buildings acknowledged that “practices in Council buildings are key to promoting energy saving and efficiency measures, due to their exemplary role” but this only refers to communication with building

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<sup>61</sup> Refers to Directives on Energy efficiency (2006/32/CE) and Energy Performance of Buildings (2002/91/CE) (EU 2006; 2002).

managers and users (Barcelona Energy Agency 2011, 9-10). The monitoring, displays and the online publication of energy consumption and generation in Council buildings included in the plans of 2002, 2009 and 2011 (Barcelona City Council 2002a; 2009b; 2011) were slowly introduced until the change of government in 2015. Few of these displays were put in place, online information was not available, and some displays observed during my field research were not operational.<sup>62</sup> Even singular exemplars like the photovoltaic panels of the Forum and those on the Council Hall buildings did not show their energy generation to passers-by and online visitors (Figure 17), and could be visited only as part of tours guided by experts. The weak attention to the integration of energy-saving practices in communication strategies to the public appeared to be a permanent limitation of the Council Plans that appealed for an exemplary role in response to EU policies and conventions. Maintaining Council practices outside public scrutiny risked increasing public mistrust in the Council, the energy-saving practices it deploys, and overall in energy saving practice.

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<sup>62</sup> The plan of 2011 proposed an “ambitious remote monitoring plan” for “generating public awareness in most visited buildings” (Barcelona City Council 2011, 6, 11), reproducing the Council framing about singular buildings (Section 5.3.1). The first report indicated that of the 2001 buildings of the Council, 27 had become part of the monitoring system in 2012, and three more in 2013. Moreover, the reports referred only to an energy management rationale and not to the need to generate public awareness (Barcelona Energy Agency 2013b, 74). Similarly, details about photovoltaic generation were only available in accounting reports (Barcelona Energy Agency 2013, 2014). According to a Council press release, in 2016 there was “monitoring of consumption and/or generation in 47 building, 39 photovoltaic systems, 76 solar thermal systems, and 6 singular systems”. Monitoring only became mainstream practice in Council buildings and energy generation facilities with the arrival of BCN en Comu to office in 2015, which intended to introduce 50 new monitoring systems per year (Barcelona City Council 2016). Also during this term, an online map of solar photovoltaic generation in Council buildings was made available, enabling a comparative review of different Council installations.



Figure 16. The Council and the City Program, as represented in the Plan for Energy, Climate Change and Air Quality of Barcelona  
Source: Barcelona City Council (2011, 228).



Figure 17. The Novissim Council Hall, whose photovoltaic rooftop not visible from the street, nor signposted to passers-by.  
Source: Ramón Sales <https://bcnroc.ajuntament.barcelona.cat>.



### 5.3.3. Learning framing of replication

Ever since the Energy Improvement Plan of 2002 (Barcelona City Council 2002a) there has been a lack of alignment between the practices promoted in commercial Council buildings, other commercial buildings, and households. The integration of energy efficiency – a less visible practice – was restricted to residential buildings, whilst the Council committed itself to demonstrating visible and innovative technologies such as photovoltaic panels (ibid 2002a, 23). The criterion of “replicability” – as introduced in the plan of 2009 – referred mostly to being “replicable in other Council buildings and services” (Barcelona City Council 2009b, 3). The “role model” of the Council involving “insulation” as a replicable practice maintained the focus on “emblematic buildings...to grant visibility to the action” (ibid, 5), showing the prevalence of singular exemplars in the framing of the Council practices. Increasing focus on automation along with the conceptualisation of energy saving as smart, as reflected in the Basic Guide to Energy Efficiency in Council buildings of 2011 (Barcelona Energy Agency 2011), was in line with limited reflection about the potential of more replicable practices of behaviour and manual operation.<sup>63</sup> In addition to the arguments thus presented, especially in Section 2.3.1 about the prevalence of a legitimating rationale that relied on innovation and singular exemplars, the limited reflection about the mechanisms of replication could have been due to the dominance of techno-economic knowledge. Although Council Officials were aware of EU expectations for local governments to implement EU Energy Performance Certificates in an exemplary way, I was informed that “[the Council was] not certifying the Council buildings... because of the costs [of certificates], and the need to implement their recommendations” (Council

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<sup>63</sup> These could be relevant for residential buildings as well as rented Council buildings where, according to Council officials from the Barcelona Energy Agency (#1 & 2) and of Urban Habitat (#1), the Council has limited leverage in terms of saving energy, such as in the building headquarters of the Barcelona Energy Agency and of Urban Habitat This is done through appearances, it's not true

Official from the Barcelona Energy Agency #1, pers. comm. 2014). This shows that cost-effectiveness prevailed over fostering replication through exemplary practice, as consistent with the values and policies fostered by government actors.<sup>64</sup>

Two Council commitments – to solar thermal technology and to the greening of Council office operations – stand out for apparently integrating certain practices throughout Council operations, and pursuing the replication of practices presumably mature enough for public adoption. I use these examples to show how framings of integration and replication were superseded by a framing of innovative and singular exemplars – so far prevalent in the policies discussed.

The Council Solar thermal bylaw of 2000 was represented in Council policy and reporting as the first European regulation to incorporate solar thermal capacity in all new and renovated buildings (Barcelona City Council 1999; Barcelona Energy Agency 2006a).<sup>65</sup> The program was originally part of a campaign to improve the City image in the run up to the Olympic Games of 1992.<sup>66</sup> Later on, the Council deployed solar thermal panels in high visibility projects like *Fabrica del Sol* and the Olympic Pool (Figure 18). However, this technology proved to be problematic due to its maladjustment to the solar radiation in the City, resulting in long periods of set up – as in the case of the Olympic pool (Solarge Project 2008); and permanent malfunctioning – as in the case of *Fabrica del Sol* (Renewable energy experts at *Fabrica del Sol* #1 and 2, pers. comm. 2015) and private-residential buildings (Barcelona Energy Agency 2006a). The Bylaw incorporated in 2006 a punitive system, requiring system certification and maintenance contracts (ibid 22, 24),

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<sup>64</sup> This also contradicts policy claims about energy efficient practices being cost-effective.

<sup>65</sup> The Solar Thermal Bylaw was implemented from August 2000. Similar requirements became common in other cities and in Spain in the following years.

<sup>66</sup> Refers to the Campaign and Program “Barcelona Posa’t Guapa”; i.e. “Barcelona Get Pretty” (1985-2009).

showing the limited voluntary engagement of the public. In parallel with this situation, a lack of reporting about operative capacity is common to the reviewed documents. Moreover, during interviews conducted in 2014 and 2015 the research renewable experts interviewed were openly questioning the suitability of this technology for application in the local context. Thus, although originally intending to foster Council integration and the public replication of a specific technology, the Solar Thermal Bylaw continued to support a technology that was not mature. The lack of transparency of the Council about its success supports the claims presented in Sections 5.3.1 and 5.3.2 about the prevalence of a desire for international positioning and legitimation. The risk existed that the layman public as well as sectoral experts would understand the solar thermal requirements and overall energy saving practice as an arbitrary obligation, and thus a burden.<sup>67</sup>

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<sup>67</sup> Such was my understanding following the completion of 60 interviews in households that included questions about the use of solar thermal generation in buildings finalized in the period 2001-2013. The interviews took place during my engagement with project HOME for RMIT University in the period 2016-2017.



Figure 18. Solar thermal panels installed at the Olympic pool (2004).  
Source: Solarge Project 2008.

Another program apparently intended to compel the public to replicate energy-saving practices through the integral practice of the Council involved the Government Measure on the Greening of Council Services (Barcelona City Council 2001).<sup>68</sup> The measure was intended to represent an “exemplary role of public administration”, and appealed to “coherence” as a means of “political legitimacy” and citizen engagement (Barcelona City Council 2001, 1). This exemplary rationale was reproduced in the +Sustainable City Council Program created in 2006 and that incorporated matters of building construction and renovation (Barcelona City Council 2010b; 2006):

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<sup>68</sup> The measure mainly addressed the purchase and use of products and materials, as well as service contracting in Council offices

Public authorities, which often call for the involvement of the productive sectors and citizens in taking care of the environment and making our city more sustainable, play an important role in leading by example. (2006, 5)

Practice integration and, implicitly, its communication were represented to be instrumental in engaging the public with environmental practices. Such was the case of the Green Office Guide, which explained the experience of Council offices to third-parties as an example aimed at fostering greening of their offices (Barcelona City Council 2005a). However, the reformulation of the Green Office Program in the +Sustainable City Council Program resulted in attention being paid mostly to Council staff, who were offered advice and in-house campaigning materials (Figure 19), and failure to reflect on how – potentially replicable – Council practices were to be communicated to the public.<sup>69</sup> Accordingly, an instruction from the Mayor’s office (Barcelona City Council 2005b) and a communication campaign urging Council staff to use air conditioning appropriately under the motto “Don’t get frozen. Let’s lead by example, let’s save energy!” (Figure 20) were not mentioned in simultaneous campaigns that addressed households and shops (respectively, “Green Light in Barcelona” and “Don’t Get Frozen in Shops”).<sup>70</sup>

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<sup>69</sup> Potentially replicable practices identified amongst those proposed included efficient lighting and solar thermal, and the behaviour of “turning off lights, computers and regulating heating and air conditioning” (Barcelona City Council 2010). Although the Sustainable Council Guide was available online, it was not tailored to third-parties as was the case with the Green Office Guide of 2006. The interested public could subscribe to a newsletter and access the program website, but much content had restricted access.

<sup>70</sup> Information about the Council practices was not included in the press release of the Barcelona Energy Agency on the 6<sup>th</sup> July, 2006, nor in media which echoed this (Barcelona Energy Agency 2006b; Ferragut 2006).

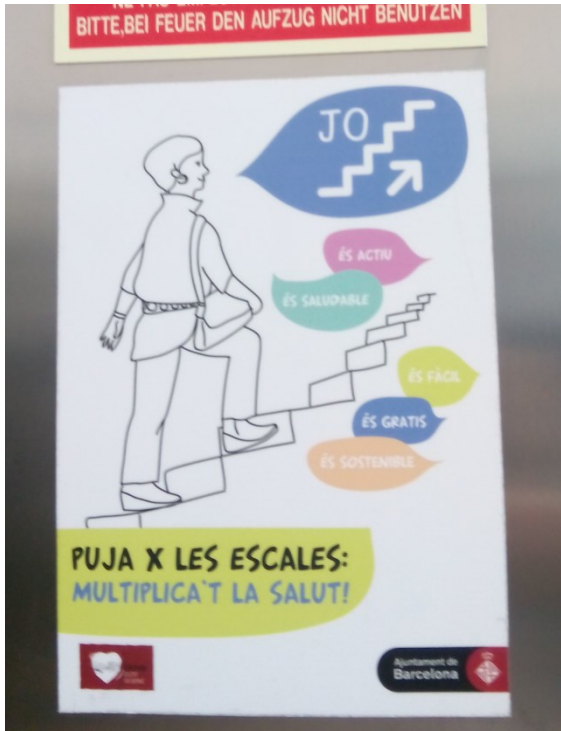


Figure 19. Stickers in the offices of the Council Department of Urban Habitat promoting the climbing of stairs and saving of water.



Figure 20. Campaign posters promoting appropriate thermostat use in Council offices  
Source: <http://www.ajsosteniblebcn.cat>

The apparently praiseworthy integration of energy-saving practices into the operation and commissioning of Council buildings – some of which could have been replicable in third-party commercial and residential buildings – failed to receive textual support in the form of an explanation to the public of how the Council integrates these practices and how could be replicated by the public. Such was the case of Council building certification, whose limited adoption was justified on the basis of cost, showing disregard for its capacity to compel the public to imitate the Council and to grant credibility to certification requirements. This rationale is similar to that used by the Catalan Government to justify the limited communication of the status of certification and the ratings obtained for its building stock (Section 5.2). Such limited transparency may have been a response to the desire to avoid public scrutiny in questionable domains like the deployment of solar thermal technologies. Paraphrasing Janda and Topouzi (2015), the Council practices appear to be located in a *hero framing of innovative and singular exemplars* whose function was contributing to legitimate the Council and boosting the City's international image, but which disregarded the socially transformative potential of a *caring framing of integration* and a *learning framing of replication*. Accordingly, the Council appears to have relied on innovative and visually striking exemplars that, as theorized by Lefebvre about monuments (1991), conceal the context of practice and its contradictions, to avoid scrutiny, and to contribute to legitimating the social order. Similar claims are made by reviewers of the concept and practice of the smart city (Fernández González 2016; Baccarne et al. 2014). The socially transformative goal of leading through examples of energy-saving practices appears to have given way to the City's preference for positioning and legitimation.

## 5.4. Chapter summary

Responding to the first research question, the study of policy narratives and related implementation practices reveals that:

a) These studied governments consider it fundamentally important to portray their commercial buildings as representations of their energy saving values. The EU, the Catalan and the Barcelona governments, show commitment to *coherently* abiding by certain energy saving values and representing them in their buildings as a means of compelling the public to also save energy. These values are overtly argued to respond to the public interest and good, as in the case of Barcelona.

b) A prevalence of techno-economic conceptualisations of energy saving practice, including energy efficiency, self-sufficiency and smart appear dependent on the goals of fostering growth in the EU and Spain and attracting investment to Catalonia and Barcelona by avoiding the counter-economic effects of saving energy. These economic goals appear to marginalize the stated goals of saving energy and compelling the public to act accordingly.

c) The exemplary function of government buildings appears to respond to a framing of innovative practices and singular buildings. This framing is not restricted in EU requirements and corresponds to the preferences of politicians and communication agencies, as shown for the case of the Barcelona City Council. The underlying rationale and implementation of this framing, as shown in the case of Barcelona, is better explained as a means of attracting investment to the City than as a means of compelling the public to save energy. The textual information about these practices fails to contextualise them in the practice of the Council and that of a public which is intended



to replicate them. This is problematic because, as argued in Chapters 2 and 3, framing energy-saving practices as integral part of government practices that, could foster their appraisal by the public as consistent and hence credible.

c) Limited contextualisation and transparency about the degree of integration of energy-saving practices by governments is justified by using economic arguments to disregard practices that are not cost-effective. Such is the case of the deployment and communication of EU Energy Performance Certificates in the buildings of the Catalan Government and the Barcelona City Council, and the limited commitment to the EU exemplary requirements by the Spanish Government.

Responding to the goal of understanding the root of the problem, I have shown how a series of closely related political and economic interests (that according to the discussion in Chapters 2 and 3 could underlie policy reliance on a framing of innovation and singular exemplars) raise reasonable doubts about the capacity *and intent* of exemplary policies to produce an appropriate practice. The political interests reviewed potentially involve those of the EU Commission, the Catalan Government, and Barcelona Council in gaining new attributions by producing a new domain of practice that is energy saving. They also include those of Spain in protecting (*reproducing*) its State attributions. The presence of this statizing function has been argued for in the critical literature about the energy saving policies of the EU, Catalonia and Barcelona (Talus 2013; Calzada 2017; Charnock et al. 2014; March and Ribera-Fumaz 2016). According to these reviewers, de-politicising energy saving practice contributes to the legitimacy of the proponent governments. Such claims of legitimacy-seeking gain explanatory capacity in the context of the crisis of legitimacy in the EU, as argued for in Section 5.1. Added to these factors, the economic crisis, welfare cuts and widespread cases of political corruption in Spain and Catalonia

reviewed in Section 5.2 have caused many to question the legitimacy of the politico-economic system.

The study of the politico-economic system also recognises the existence of vested interests in preserving current energy consumption rates and building standards. These interests could support the de-contextualisation of government practices to counter the (re)production of a practice of energy saving. A framing of innovation and singular exemplars co-produces a practice of energy saving that is technological, costly, and best deployed by organisations, resulting in their legitimation and that of the established knowledge, furthermore alienating the public from engaging with related practices (Swyngedouw 2010, 2011; Janda and Topouzi 2015). Accordingly, restricting consistency to its illusory coherence with socially accepted representations of innovative technologies and designs counters the reproduction of a practice, ultimately serving the economic interests of energy and financial sectors closely connected to Spanish political actors, as shown in Section 5.2.

Moreover, a framing of innovation and singular buildings could serve to limit public scrutiny of organisations regarding the savings obtained in buildings and elsewhere, since it is based on the quantitative knowledge of experts to conceal underachievement (Lutzenhiser 2014; Janda and Topouzi 2015; Fernández González 2016; Baccarne et al. 2014), as well as regulatory contradictions and interests (Talus 2013; Charnock et al. 2014; March and Ribera-Fumaz 2016). It *illusorily* represents practices as consistent in practice, concealing their contradictions (Lefebvre 1991). This framing therefore serves to divert attention from: a) questionable practices justified by the rationalisation of costs, like building privatisation in Spain and Catalonia; and, b) the prevalence of economic interest in maintaining consumption and economic growth – as argued by Talus for the EU (2013)

– as well as adding value to the city of Barcelona in terms of attracting investment to the city (Charnock et al. 2014; March and Ribera-Fumaz 2016).

Thus, the apparently praiseworthy efforts of the EU, Catalonia and Barcelona to save energy in government buildings can therefore be criticized for relying mostly on a *hero framing of innovation and singular exemplars*. This appears to constitute as a missed opportunity for promoting horizontal relations of accountability, trust and engagement, considered necessary for ruling and ruled actors to co-produce practice (Shove and Walker 2010; Walker et al. 2010; Devine-Wright and Devine-Wright 2009; Devine-Wright et al. 2010; Greenberg 2014). Re-contextualising government practices along, for instance, a *caring framing of integration* and a *learning framing of replication*, could potentially contribute to engaging the public in saving energy, as suggested by Janda and Topouzi (2015). Reframing government practices in such way would imply transforming the ways governments relate to the public. This would imply, according to the theoretical framework of this dissertation (Chapter 3), and to social practice theorists (Section 2.7), to transform the social relations in which energy consumption is embedded.

Aligned with the theoretical framework proposed herein, this chapter sheds light on the knowledge and the interests that support a framing of innovation and singular exemplars. These exemplars are part of monumental representations that contribute to a creating a practice devoid of meaning, enabling banal consensus, and leading to a public appraisal of the government as legitimate (Lefebvre 1991). This argument, however, is imperfect without further empirical substantiation, as argued by authors like Tomás and Cegarra in the study of smart cities (2014), adding relevance to the study of the relations between official representations and public appraisal that I undertake in the following two chapters.

## Chapter 6. Official representations

In this chapter I will primarily examine commercial buildings as representations of organisations and of the official practice of saving energy by answering Research Question 2: *How do the official narratives and practices of commissioning organisations frame energy-saving practices in four commercial buildings in Barcelona?* According to the theoretical framework of this dissertation, the function of commercial buildings is a monumental one. This function relies on emptying buildings of meaning in everyday life by decontextualising them – a problem found common in the critiques of the dominant practice of energy saving (Chapter 2). Accordingly, the monument constitutes a coherent representation of consensual conceptualisations and practices, reaping legitimacy for organisations – as also argued by Suchman (1995) – and diverting public scrutiny from inconsistencies of practice (Lefebvre 1991, 59-60, 144). Thus appears the case of the official narratives of the commissioning organisations in charge of the four case-study buildings.

When asked about the reason for saving energy in the buildings, senior organisational representatives in charge of communication concurred in highlighting the need for “coherence” between narratives appealing to the public to save energy and organisational practices – which they thoroughly referred to as “exemplarity”. In the words of Senior representative of the Catalan Housing Agency #1 during an interview about the *Efficient Block* project: “[E]xemplarity... is a pre-requisite...it reassures our discourse, making it credible” (pers. comm. 2015). Similarly, a Council Official from Urban Habitat stated that “to be exemplary [the Council] needs to be as coherent as possible [because] it has requirements to contractors, to the citizenship... It is a matter of ... integrity...of

concretizing the discourse” (pers. comm. 2015). Paralleling government officials’ pursuit of fostering learning amongst the public, a communication official from Endesa claimed that “since [Endesa] intends to build public awareness, we need to give an example. Otherwise, [the message] wouldn’t be understood” (pers. comm. 2014). The three quotes have in common an appeal to the role of practices as contributing to the credibility of narratives (Jackson 2009).

Answering Research Question 2 will serve to reveal the contradictions occurring within official narratives, and between the former and the practices being represented in the buildings. Revealing these contradictions implies re-cognising: a) buildings as co-producing meaning, and b) their underlying political function, discussed in Chapter 5, thereby opening up opportunities for policies and everyday critique to promote a consistent representation of energy saving practice. This could counter the current expert representations that decontextualise practice to legitimize elites and dominant problematisations, framing these as best equipped to save energy through technical and economic efforts, and which are ultimately conducive to public alienation regarding the related practices (Swyngedouw 2010, 2011; Healy 2014; Janda and Topouzi 2015). The study of “framing” serves to capture how representations “direct” and “divert attention” from aspects of practice (Yanow 2009, 11). Accordingly, the official narratives introduced thus far in this introductory section are considered to divert attention from a legitimating function, which also relies on the public appraisal of coherence (Lyon and Maxwell 2011; Bowen and Aragon-Correa 2014. Suchman 1995).

Without my further questioning, the same representatives of the Catalan Housing Agency and of Endesa contended – respectively – that: “exemplarity... does not give politicians leadership... [because] the public does not believe in them” and that “people

mistrust energy companies [but] these energy certificates are not a pretence”. These unexpected statements show the awareness of organisations about the risk of public appraisals of the legitimating function underlying their practices. This is a risk commonly associated with the vocal sustainability claims of organisations (Bowen and Aragon-Correa 2014). A contradiction arises between the recognition of the role of buildings in co-producing meaning as a means of credibility, and the denial of their capacity and intent to nurture legitimacy. A contradiction may also be identified in the words of the Council representative who continued to claim that “the intent is to concretize the discourse... [to] demonstrate what is possible”. These words resonate with Lefebvre’s understanding about monuments rendering consensus “concrete” (1991, 220) and hint at the Council’s reliance on *singular demonstration exemplars*, whose role is to foster confidence in *the possible*; i.e., in *innovation*, more than in fostering the integration of energy saving practice in the Council and its replication amongst the public (hence aligning with the findings about Council policies in Chapter 5).

As in Chapter 5, I draw inspiration from Janda and Topouzi’s (2015) typology of stories and the Lefebvrian framework of this dissertation to study representations according to: a) a *hero framing* that refers to *innovation* and *singular exemplars* (Lefebvrian monuments); b) a *learning framing* about fostering the public *replication* of official practices; and c) a *caring framing* about the organisational integration of energy-saving practices. Having shown the widely-recognised need for “coherence” amongst organisational representatives and how this can relate to a diversity of framings, in the following sections I will reflect on the framing and contradictions of the four case studies introduced in Section 4.3.2 which create the structure of the chapter. First, I analyse *Endesa* – the corporate offices of the energy corporation – characterised as an *integral* part of the

company practice. Second, I examine *Fabrica del Sol* – the Council’s sustainability museum in its evolution from *demonstrating* renewables to becoming an *integral* part of the smart city. Third, I study *Media-ICT* – the Council’s iconic building in terms of the City’s commitment to supporting smart innovations. Fourth, I assess the *Efficient Block* – the Catalan-Government-led project intended as a *replicable* model of residential energy renovation. Finally, the chapter summary discusses the prevalence of a hero framing amongst the cases and explains how this relies on a set of legitimating mechanisms that hinders a caring and a learning framing of the organisations and their practice.

## **6.1. Endesa: integral caring and limited communication**

The Catalan headquarters of Endesa in Barcelona – the *Endesa* building – reunites a series of modernist, second half of the twentieth century and new buildings (2011). It was commissioned after the convoluted purchase of Endesa by the Italian Enel in 2009 that occurred after the Spanish Government vetoed a bid by Gas Natural Fenosa, owned by a Catalan bank. Offers from foreign bidders were accepted, responding to preference of the conservative Government of Spain for Endesa to be “better German than Catalan”.<sup>71</sup> Amidst a heated nationalist conflict between Spain and Catalonia (Section 5.2), interference of the Spanish Government was widely criticized in Catalan nationalist circles as being an act of “corporate Catalanophobia” (324cat 2006). This explains, along with company awareness about public mistrust in energy utilities (see the words of the communication representative in the introductory section of this chapter) the company’s commitment to improving its image once Enel’s purchase had been completed.

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<sup>71</sup> The phrase is attributed to a high ranking member of the Spanish Government (Güemes 2008).

According to an Architect involved in the *Endesa* building in Barcelona, its construction responded to a decision “to transmit a new [company] image relying on energy efficiency...to bring together pre-existing and new parts of the building”. To this contributes the colour shading of windows. The former interviewee explained that the use of colour shading of windows and the use of high efficiency heating, ventilating and air conditioning systems emulated the vernacular use of curtains and ventilation routines. The use of automation was deemed necessary – as in any commercial building designed to be efficient – but also intended as a form of “democratic control of thermal comfort... [because] otherwise the strong one sets the temperature and then girls feel cold”. The same dual purpose of energy efficiency and democratic comfort was pursued with space distribution. Managerial offices, commonly placed in the façade and offering the best views to the highest-ranked, did not occupy corners and had transparent walling to ensure “democratic” access to natural light. According to the designer, Endesa was at first unwilling to accept the latter design feature, but understood that it was necessary to improve staff satisfaction, and then made efforts to communicate the rationale of the measures to the staff (pers. comm. 2014). This claim was corroborated by a communication official, who stated that energy saving measures were accompanied by signposting, information screens and training (pers. comm. 2014). Thus, Endesa’s commitment to saving energy implied a transformation of company relations with staff, as reflected in the choice of space distribution and a communication strategy that engaged users in understanding and managing the building. The choice of efficient technologies, accompanied with appropriate design and communication, appear to have framed energy saving as part of the caring efforts of the company towards its staff.



Similarly, in communications to the non-user public, the efficiency of the building was portrayed as proof of the company's willingness to improve workers' comfort, and to unify its offices in Barcelona, described as evidence of its commitment to stay in Catalonia (Angulo and Muñoz 2012), hence showing that the company cared about its employees, the local community, and the environment. This reflects the Endesa Sustainability Policy which promotes efficiency throughout the company buildings and acknowledges a will to reflect public values and perceptions about the company (Endesa 2015). The company policy of fostering energy efficiency in its buildings appears therefore as a means of building legitimacy (Lyon and Maxwell 2011; Bowen and Aragon-Correa 2014; Suchman 1995). Aligned with the Lefebvrian framework of this dissertation, the reliance on energy efficiency provided the opportunity to appeal to a consensual agreement to deflect criticism about the vested interests underlying the action of the company (Section 5.3) and to improve public acceptance. This would be particularly relevant in times of retail market liberalization. By transforming and furthermore reflecting in communications the way the company related to the public (users and non-users) it can be argued that the strategy of the company was to foster trust, acceptance and engagement (Gross 2007; Batel et al. 2016; Devine-Wright et al. 2010; Greenberg 2014), overall contributing to "good governance" whereby social capital is construed by "trust" (Weiss 2000; Fukuyama 2001).

Further countering an understanding of *Endesa* as a monument, at a first stage the company press releases framed the efficiency of the building (A and B ratings in the EU Energy Performance Certification system) in the context of 17 other buildings to "demonstrate Endesa's efforts to reduce its energy consumption" (Endesa 2013). This aligns with the caring framing of integration proposed in this dissertation. By referring to "reducing consumption", the conceptualisation of energy saving is inclusive, with a

plurality of approaches, hence diverting from the hero framing that relies on conceptually and technologically reductionist ones. Accordingly, the building’s consumption and savings were described using a combination of quantitative indicators and mundane explanations. These included references to the context of meaning-making and to the public’s experience with EU appliance labelling – more widespread at the time than EU building certificates (Table 8 **Error! Reference source not found.**). By referring to the everyday context, this communication appeared to be designed to foster meaning-making amongst multiple audiences, hence aligning with the company’s “intent to build awareness amongst the population” referenced in the chapter introduction. The building was therefore framed as being coherent with company values and an integral part of its practices, showing that the company cared about saving energy and potentially enabling public learning.

Table 8. Summary of the energy savings of Endesa as described in a press release of the company.

Explanation of the EU Energy Performance Certification system	“The energy efficiency certificate ...is similar to that used for electrical appliances”	
Building surface	8,766 m <sup>2</sup> used for office space	
Consumption	197,785 kWh/year	“Energy consumption and CO <sub>2</sub> emissions of the certified area are 60% lower than those of a building of a similar size which meets the minimum energy efficiency requirements of the CTE [Spanish Technical Building Code]”
Energy savings	357,886 kWh/year	
Avoided emissions	195 Tons of CO <sub>2</sub> /year	
Magnitude of energy savings in mundane terms	Equivalent to the annual electricity demand of 84 households	

Source: Endesa (2013).

However, as shown in Table 8, the savings are related to a national standard (CTE), not the previous situation. This utilization of certificates is problematic because it confuses calculated efficiency with actual savings, hence allowing the formulation of claims that the public would find them difficult to verify (Moezzi and Janda 2014; Wilhite 2010; Guy and Moore 2005b; Janda and von Meier 2005). This situation could have been avoided, for instance by comparing energy consumption per square meter in this and previous buildings in which company officials used to work. This approach to apparent transparency is common to the educational facilities and energy exhibition in the building known as Endesa Educa. The former refer to the company processes of energy generation, transportation and distribution, but not to its role as responsible consumer, for instance, in its commercial buildings (Figure 21). Thus, the public visiting these facilities are informed about how to save energy at home and at school but are not motivated to reflect on the practices of the company, overall reproducing the model of exhortation whereby company practices are not open to critique. Supporting arguments about limited contextual communication to the public, the building does not display in its exterior either its Energy Performance Certificate or its consumption; and the energy-saving practices in place are not signposted nor observable from the street (Figure 22). Instead, there is a narrative emphasis on “next generation” technology (Endesa 2013), which is not explained to the public contributing to the avoidance of scrutiny of the consistency of practice and hence legitimating the organisation.



Figure 21. Scheme of the electric grid, highlighting Endesa Educa amidst processes of generation, distribution and consumption.  
Source: Screenshot of endesaeduca.com (Enel 2014).



Figure 22. Facade of the *Endesa* building and entrance from Carrer de Vilanova.  
Source: [www.alotark.com](http://www.alotark.com) (above) and Google Street view (below).

Limited communication about the building became, according to an architect involved in the building design, deliberate. In view of the limited public knowledge about energy efficiency and sustainability, especially at times of financial hardship, “Endesa

decided...not to communicate its achievements” (pers. comm. 2014). This implies that Endesa was concerned about being appraised as overspending and, furthermore, attracting attention to its revenue and practice during a period characterised not only by the financial crisis but by public discontent about the politics of energy in Spain (Section 5.2). Supporting arguments about the deliberate attempts of the company to deflect attention from the buildings, I found that after the first round of observation and interviewing in Barcelona in mid-2014, as described in Section 4.4, it became impossible to arrange interviews with company representatives. Generally welcoming interactions in person and via phone, email and social media were followed by cancelled meetings and a general halt in communication (Figure 23).

This limited communication is aligned with the awareness of corporations about the lack of consensus concerning the priorities of sustainability (Geels 2010), the fact that vocal claims may be appraised as greenwashing (Bowen and Aragon-Correa 2014), and that being placed on the spot could imperil the public image of the organisation in the case of a “salient incident” (Greenberg 2014). This would have been problematic in a climate of mistrust about the influence of the company in Spanish politics and protests about the dominance of economic interests over the provision of service to the public (Section 5.2). This facilitates understanding of why, after a first stage of publicizing the company’s commitment to saving energy, the company embarked on a different communication strategy which involved sponsoring the National Basketball League using 30.5 million euros over six years (Sáez 2012) – a cost similar to that of constructing the building (35 million euros). In contrast to the initial strategy of communicating the company’s practices, supporting sports could be seen as engagement in a consensual cause that would provide

legitimacy gains for Endesa whilst diverting attention from its practices, namely a Lefebvrian “banal consensus” (1991, 6).

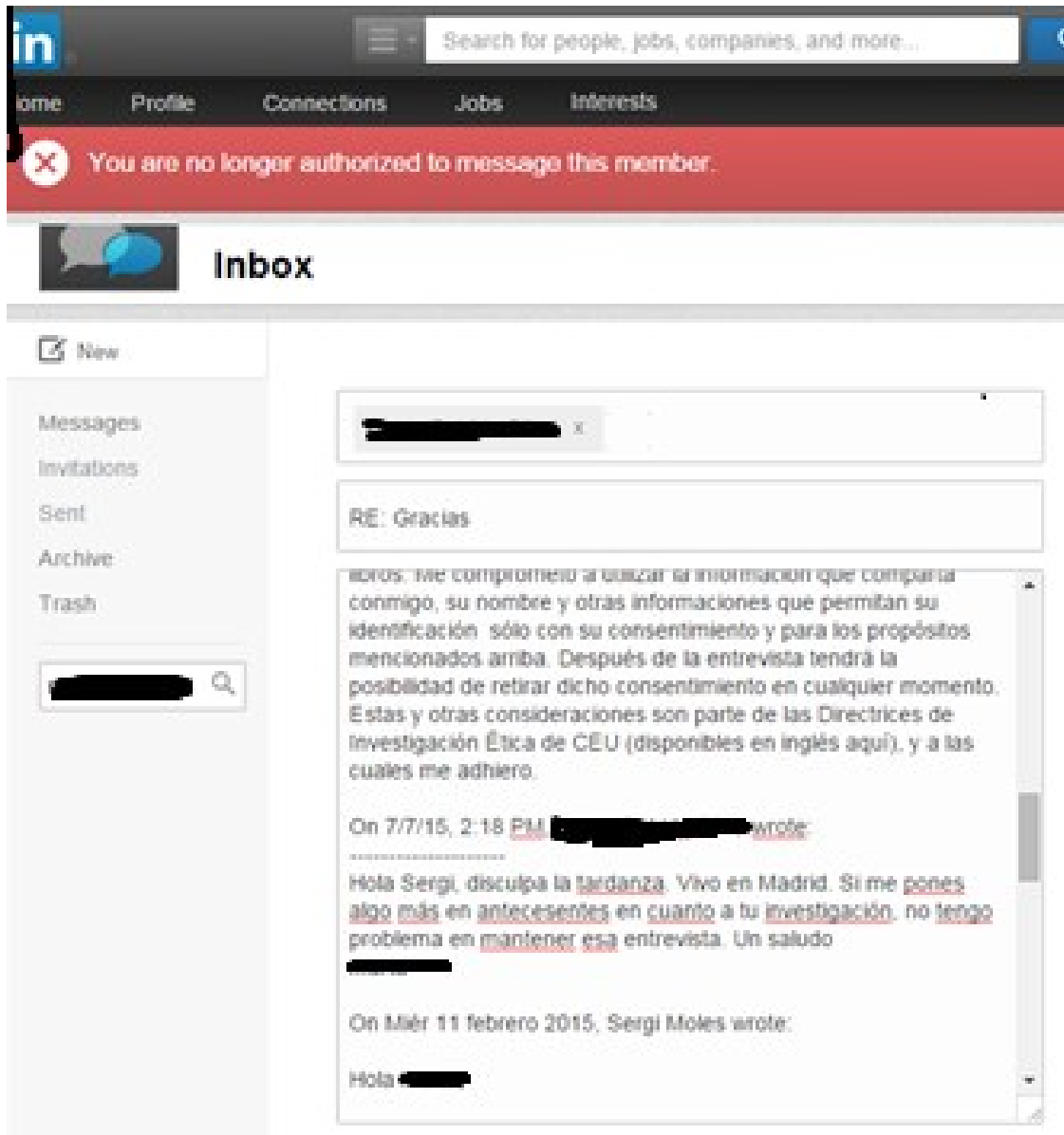


Figure 23. Computer screenshot showing that an Endesa official blocked me during an ongoing conversation in Linked in.

There is a contrast between the framing of energy-saving practices in representations that address non-user and user publics. Regardless of the apparently praiseworthy efforts to integrate high energy efficiency standards into its buildings, and to build awareness

amongst the public, the company conceals from the non-user public its energy saving practice. This is intended to be represented by the building's looks – mostly its colour shading – but the absence of textual communications (after initial press releases) reduces comparability and hence scrutiny. In this, the integral adoption of energy efficiency practices (technologies and certifications) constitutes a collection of singular buildings that obscure to non-users publics the company's practice. It implies a missed opportunity to: a) foster learning about replicable practices actually in place – e.g. shadowing, ventilation, and certification, and b) demonstrate that throughout its operations the company cares about saving energy and fostering learning. This situation, together with a marketing shift towards sponsoring the National Basketball League, supports arguments about the prevalence of a legitimating *hero framing* that relies on values and representations that are empty of meaning. The framing adopted in communication to non-user publics contrasts with that adopted by the company in relation to the building's users. This responded to an understanding – defended by the design team – that saving energy requires a transformation of the way space and systems are used, and that this in turn involves a transformation of power relations – e.g. gender- and hierarchy-related. Communications to users would then reflect on this to frame the energy-saving practices actually in place as part of company efforts to care about user comfort and to save energy.

In the next section, I review *Fabrica del Sol* as another case where the deployment of energy-saving practices contrasts with the limited contextualisation of communications.



## 6.2. *Fabrica del Sol*: conflicting activist and Council framings

A modernist building was renovated in 1999 to promote the development of renewable energy technologies in the form of hosting environmental education equipment and a Council sustainability museum; i.e. *Fabrica del Sol*. Collaboration with a civil organisation, Futur Sostenible – whose offices were located in the building – reflected the intention of the Council at the time to adhere to the sustainability principle of participation.<sup>72</sup> The original purpose of the building was:<sup>73</sup>

[T]o disseminate sustainable development values... [and] to host environmental education equipment... in order to be demonstrative in itself of eco-design, bio-construction, and the use of renewable energy sources. (Ministry of Agriculture, Food and Environment 2011)

Hence, “energy saving” was conceptualised as part of “sustainability”. The awareness-building and educational function of the building was designed to be supported with a “demonstration” of state-of-the-art technologies. As shown in Figure 24, solar thermal panels were installed on the rooftop and a photovoltaic panel was located in the southern corner of the façade – the latter choice showing a preference for visibility over producing energy. The deployment of renewable technologies aligned with the Council’s creation of the Barcelona Energy Agency in 2002 and the introduction of the Solar Thermal Bylaw of year 2000. Following the principles contained in the Citizen Commitment to Sustainability of 2012, the building was conceptualised as “self-sufficient”.<sup>74</sup> At the time of my field

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<sup>72</sup> These principles originated from the dedication of Barcelona to the Aalborg Charter in 1995 and were captured in the People’s Commitment to Sustainability (2002-2012) (Section 5.3).

<sup>73</sup> The web-page of the Ministry had not been updated at the time of this research which enabled access to the original narrative about the building.

<sup>74</sup>

research, the “Barcelona Smart City” stamp was present in all communications that I reviewed about the building. This re-conceptualisation underpinned the renovation of the building’s exhibition in 2015. As a result of these conceptual shifts, an anonymous Council Official argued that “the message of *Fabrica [del Sol]*...is a mess [because] every year they come up with a new idea” (pers. comm. 2015).



Figure 24. Image of *Fabrica del Sol* showing the photovoltaic and solar panels.  
Source: [www.ajuntamentdbarcelona.cat](http://www.ajuntamentdbarcelona.cat)

Throughout this reconceptualisation, the guiding principle of the building was to foster replication. An architect involved in the building renovation argued during an interview in 2015 that “*Fabrica [del Sol]* was the same from the beginning, a self-sufficient or quite a sustainable building, but replicable, for others to adopt its solutions”. To this framing of energy-saving practices in the building as replicable contributed reflections in the exhibition until 2014 about the practices associated with the building. These included, for instance, information about how thermal wall and roof insulation could be implemented in a heritage building without requiring advanced technologies or significantly changing the exterior appearance of the building (Figure 25). This learning framing of replication coincided with the grand presence of technologies, which along with the educational function of the building made it a singular representation of the Council’s interest in saving

energy. In the words of Renewable Energy Expert #1: “The Council has invested in different [energy] technologies in its buildings....but... where you can see more concentration is in *Fabrica [del Sol]*” (pers. comm. 2015).

During the incumbency of the Conservative Council (2011-2015), *Fabrica del Sol* was increasingly overlooked.<sup>75</sup> Renewable Energy Expert #2 explained in justification for this that “in contrast to smart...self-sufficiency lacks a budget, a technical project [and] the legal basis...to be a policy” (pers. comm. 2015). Another reason may have been the difficulty of fitting “sustainability” into the discourse of the Conservatives, their core supporters and City investors, according to a Council Official from Urban Habitat. According to the same official, the Council’s “self-sufficiency” was an intermediate step towards reconceptualising energy saving as part of “smart city branding”. The former would retain elements of citizen engagement with the previous focus on sustainability, whilst the latter tended towards a “technology that will save us all types of discourse” (pers. comm. 2015). Adding to these reasons, a Council Official from Urban Habitat #1 argued that the conceptual shift responded to “the will of politicians to change the name of things to justify [government] change” (pers. comm. 2015), sustaining theoretical claims about the need of governments to produce their “own” practice (Lefebvre 1991, 53) though specific conceptualisations. These political motivations would explain the reconceptualisation of energy saving and the discontinuation of efforts related to the conceptualisations and projects of previous governments, such as *Fabrica del Sol*.

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<sup>75</sup> For instance, according to an anonymous expert, the Councillor in charge of the building used to refer to it “scornfully, as something from Imma [Mayol, the earlier leftist-green Counsellor]” (pers. comm. 2015).



Figure 25. Detail from the exhibition in *Fabrica del Sol* (as of August 2014) which reflects on the use of insulation walling and roofing.

As a result of the limited interest of the Council in the building, its self-sufficiency during my field research amounted to one-tenth of the building's consumption (Serrasolses, intervention in public workshop 20/05/14 – in Ecoinstitut 2014a). This was problematic for education experts in the building and renewable experts and members of Futur

Sostenible.<sup>76</sup> During interviews in 2014 and 2015, these experts problematized the limited renewable generation from the solar thermal infrastructure and the photovoltaic panel because the former had not been repaired since its failure before the building start-up, and the generation from the latter was limited due to its obsolescence and its positioning on the façade.<sup>77</sup> To attain a state of self-sufficiency and be able to support a credible narrative, these interviewees considered that the repair of solar thermal infrastructure on the building was needed, but also less visible practices like the installation of efficient systems and appropriate space distribution to significantly reduce consumption. It can be argued that these practices would have involved greater attention being paid to replicable solutions. This limited visibility was, according to Renewable Energy Expert #1, the reason why these practices were not deployed in the building (pers. comm. 2015). This resonates with the preference of Council politicians and communication offices for “innovative...visible...and costlier exemplars... [over] multiple projects... [intended] to activate other actors”, as argued by Council Official from the Barcelona Energy Agency #1 (pers. comm. 2015). According to these claims, the building would reproduce the hero framing of innovation and singular exemplars of the Council policy and practice which, as discussed in Section 5.3, can be understood as responding to a legitimating function.

Supporting this argument, the response of the Council to the limited self-sufficiency of the building was mainly to conceal it, hence countering what would be expected from a learning framing of replication. As a Senior Education Executive explained, energy generation and consumption meters were removed from public display, because “it was

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<sup>76</sup> Some of the most compelling narratives came from a senior education executive; two renewable energy experts; a Council official from the Barcelona Energy Agency (#1), and two Education officials (#1&#2).

<sup>77</sup> According to the renewable energy experts I interviewed, the solar thermal technology was very innovative at the time of its installation on the building. This technology required continued monitoring and use, particularly in locations with high solar radiation like Barcelona. However, at the end of the building renovation the panels were not used for a period and broke before the building start-up.

difficult to justify the discourse that we need to go for renewables when you have a meter that shows that we are not producing” (pers. comm. 2015).<sup>78</sup> Also, the information boards obscured the failure of the solar thermal system, and referred to them instead as if they were operative and contributing to the heating and cooling of the building (Figure 26). Instead of fixing these problems, the Council, according to the aforementioned education expert, increasingly used the building as a hub for “organizing visits to solar thermal installations for people to see that it is not a myth...that they are required to install [solar panels], whilst Council ones are not operating” (pers. comm. 2015). This shows that the Council was aware of the risk that its solar thermal requirements could be appraised as “hypocritical” by the public – to use the Jackson’s term for the appraisal of the contradictions between policy exhortations and government practices (2009, 11). To address this situation the Council referred to other singular exemplars instead of integrating appropriate practices into *Fabrica del Sol*. This may be explained by the aforementioned limited interest of the Conservative Council in a project initiated by the leftist Council elected in May 2015. It could be also explained by a desire to avoid a recognition of failure, and an expectation that limited criticism would be generated as long as the building maintained a low communication profile.

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<sup>78</sup> This aligns with the limited deployment of monitoring displays and Energy Performance Certificates in Council buildings, as discussed in Section 5.3.



Figure 26. Solar thermal infrastructure on the rooftop of *Fabrica del Sol*, and information board indicating how this contributes to heating and cooling the building.

Countering this apparent desire to maintain a low profile, the Council responded to requests from Futur Sostenible for a participatory process to be enacted prior to the renovation of the building planned for 2015. During this process, technology and education

experts demanded that efforts be made for the building to be demonstrative in itself as a means of ensuring the credibility of the energy-saving practices thus displayed. In his reply, the Head of the Department of Environmental Education in charge of the building promised to “include [these requirements] in the new exhibition” (Vallvé, participation in public workshop 20/05/14 – Ecoinstitut 2014b, 8), but did not mention improvements to the building’s self-sufficiency. These words show an understanding of *Fabrica del Sol* which is reduced to its exhibition. Supporting this argument, monitoring addressed only educational activities and excluded the opinion of visitors about the building and the practices in place. There appears therefore to be a focus on exhibition and educational activities as means of communicating to the public, which furthermore diverts attention from the limited integration and replicability of practices in *Fabrica del Sol*.

The divide between the framing of expert activists and Council Officials is also suggested by the words of a Council Official about the building, stated during an interview in 2015. This interviewee acknowledged that the participatory process had served to “[help] understand that people are central, not technologies” but who continued to proclaim that “our mission [in *Fabrica del Sol*] is communicating this smart discourse ... explaining what is done at the city level”. It appears, therefore, that in official narratives, *Fabrica del Sol* was reduced from being *demonstrative in itself* – as originally defined – to a platform for communicating the singular and innovative practices. Energy saving practice was thus represented as related to that implemented by the Council elsewhere under the less quotidian conceptualisation of smart. Its conceptual sophistication, and the reduction of practice to technologies would then limit scrutiny of the Council, as argued by the critical reviews presented in Section 2.4 (March and Ribera-Fumaz 2016; Fernández González



2016).<sup>79</sup> In the context of the Council’s pursuit of legitimacy, “self-sufficiency” appears to be a problematic concept because it takes the form of a quantitative goal for Council commitments, creating high expectations – particularly for a building renovated in 1999 – whilst not nurturing reflection about the practices of generation and reducing consumption.<sup>80</sup> Accordingly, self-sufficiency would have become an overly transparent instrument for assessing the performance of the building, which explains the Council’s preference for process indicators of smart technology deployment.

I have shown that the reconceptualisation of energy saving as “self-sufficiency” and eventually as “smart” involved deviating from the social and environmental goals of the building; i.e. away from fostering sustainability values by demonstrating the feasibility and replicability of related practices. This *learning framing* was defended by experts and activists involved in the building who contested the reduction of the building to an exhibition whilst disregarding its self-sufficiency. Limited communication about the building’s self-sufficiency and a preference for reformulating the building as part of smart practice supports the arguments presented in Section 5.3 about the Council’s desire to divert public scrutiny of its practices and hence the prevalence of a legitimating function, as reflected in a *hero framing* rather than a *learning framing*. By concealing the limited

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<sup>79</sup> Supporting arguments about the desire to limit scrutiny of the practices of the Council, open criticism from Futur Sostenible could be related to the process that took place in 2015 of restricting their office space and activities in the *Fabrica*. Reversing this situation, the leftist coalition government elected in May 2015 (by the end of my field work) resumed collaboration with Future Sostenible. They also conducted repairs and improvements to the building and, addressing issues of transparency, initiated a certification process. (Such process had not been pursued in the past on the basis that Energy Performance Certificates are not required for heritage buildings). An “A” rating – the highest – was obtained using the EU Energy Performance Certificate system, and four points out of four in the Verde Certificate in 2016 (Construible 2018).

<sup>80</sup> For instance, a Council official from Barcelona Energy Agency #2 and an Education official #1 agreed in claiming during interviews conducted in 2014 that “self-sufficiency” distorts the essence of energy saving because it enables the inclusion of non-renewable sources like thermal energy, the use of which is fostered by the Council (Section 5.3.1)

self-sufficiency of *Fabrica del Sol*, the Council could have missed an opportunity to reflect on the mistakes that were made, including those related to the problematic operation of solar thermal systems in the City (Section 5.3). The organisational pursuit of legitimacy through *hero stories* explains – according to Janda and Topouzi – how official narratives divert attention from failure. They thus constitute, in legitimacy-oriented practice, a “horror story”, and could be reformulated into a compelling “learning story” whereby mutual trust between the Council and citizens could be nurtured, ultimately contributing to a “caring story” (2015). Public acceptance of the Council’s action could then be pursued not in terms of the attainment of energy saving goals but as regards the capacity to produce an appropriate practice. This could involve, in alignment with the original framing of *Fabrica del Sol*, continuing collaboration with civil society, and allowing public scrutiny and debate by transparently framing the practices in the building as part of the Council’s efforts towards integration and public replication.

In the next section I review the situation of *Media-ICT*, a building that was constructed *ad hoc* to represent the smart city practices of the Council.

### 6.3. *Media-ICT*: the monumental production of the smart city

The *Media-ICT* building is located in the industrial neighbourhood of Poblenou, which is undergoing transformation into the “22@ District”, designated by the Council to foster the digital economy (Charnock et al. 2014). Public communications of the Council and the Consorci Zona Franca (henceforth, Consorci ZF)<sup>81</sup> – in terms of commissioning and developing the *Media-ICT* – acknowledge the building as a *visual* representation of the City’s commitment to the digital economy:

[T]he building seeks to be *iconic* in the digital world and a vehicle for the dissemination of new technologies. (22@Barcelona 2006)

[The *Media-ICT*] is the *new image* of Barcelona Digital. (Consorci ZF 2010, 6)

A focus on visual aspects and the iconic value of the building is reflected in the display of technological innovations that constitute the building’s façade. These are characterized by a series of innovations specifically created for the building, including the external phosphorescent structure and a series of translucent bubbles made of a new material – EFTE – that are operated by solar sensors that adjust the transparency of the façade to the level of solar radiation (Figure 27).

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<sup>81</sup> The Consorci is the public company that partnered with the Council in the development of the *Media-ICT*. Its board of directors contains representatives of the different administrations and is presided over by the Mayor of Barcelona.

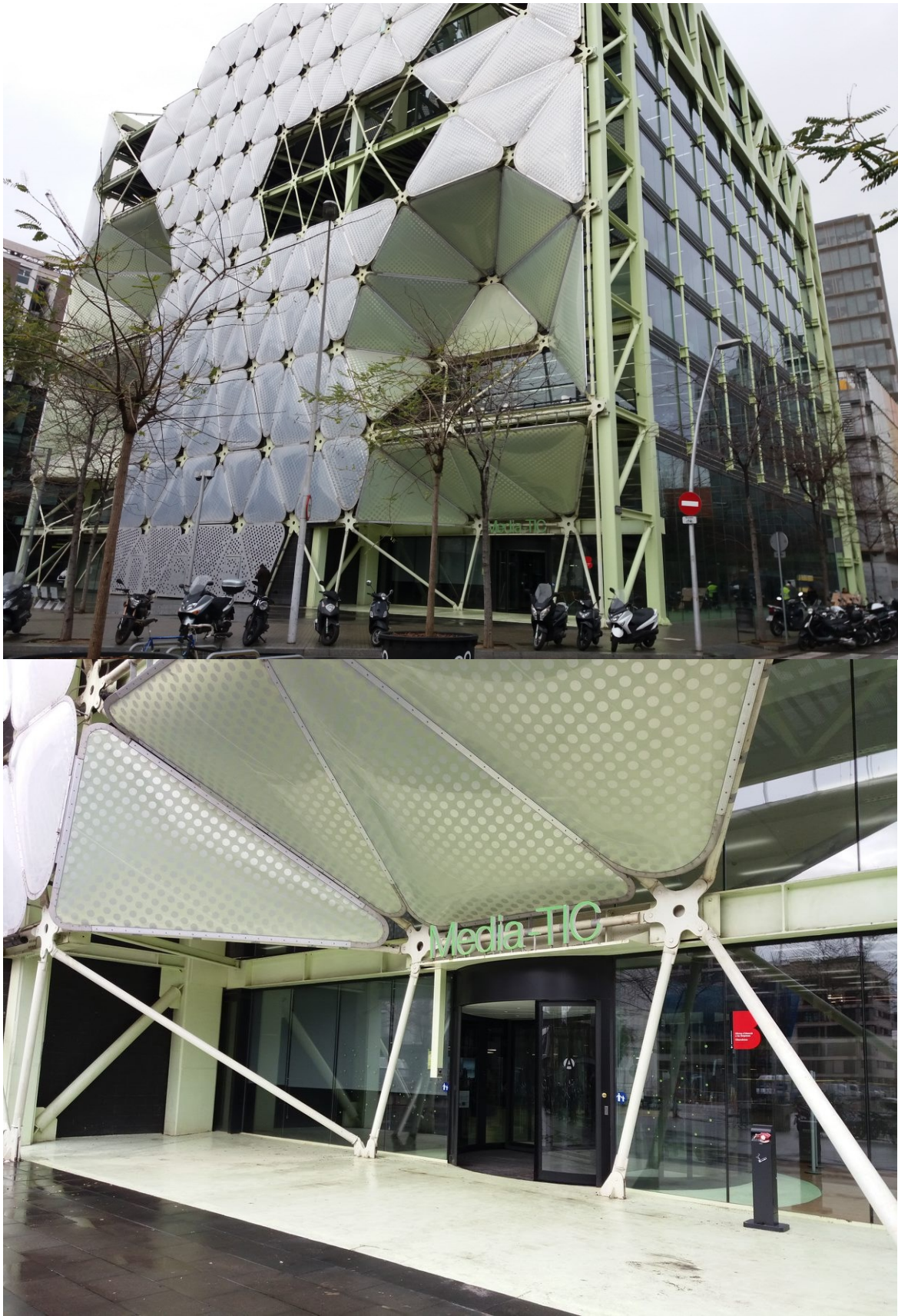


Figure 27. The *Media-ICT* façade and entrance.

A focus on the visual and iconic features of the building is also upheld by an analysis of developers' communications. Council and Consorci ZF booklets addressing potential tenants of the building and investors in the 22@ District contain profuse references to “design”, being a “new technological center” (Consorci ZF n.d., 4) and “innovation” (Barcelona Activa and Barcelona City Council 2012, 6). Renting space in the building is presented as the possibility to “incorporate the values of the Barcelona brand” (Barcelona Activa and Barcelona City Council 2012). These values, however, are not specified in these documents. “Sustainability” is mentioned but not explained, and furthermore becomes dependent on aspects of corporate image and productivity: “An emblematic building, with avant-garde and sustainable architecture, comprising modern, diaphanous offices surrounded by a very advanced technological setting” and “productive sustainability” (Consorci ZF n.d., 3, 5) (Figure 28). Terms like “emblematic”, “avant-garde”, “modern”, “future” and “very advanced technological environment” identify innovation as a goal in itself, disconnected from energy saving or sustainability (Consorci ZF n.d., 3-4). As shown in Figure 29 and Figure 28, both booklets have in common their graphic reference to the EFTE façade, and the words “what a company needs to succeed” are printed over the picture of the dotted pattern on the façade on the booklet from Barcelona Activa and Barcelona City Council (2012, 1). However, aspects like the energy saving function of the EFTE façade is not explained. This shows a will to exhibit innovative design and technologies to obtain recognition for the Council and the tenants of the building. Supporting this argument, whilst visiting the building in summer 2015 I observed that that between visits of potential tenants to currently empty floors, the real-estate representative of Consorci ZF kept the lights on, overriding their automation – possibly the energy saving mechanism most obvious to users besides the façade. This shows the limited relevance granted to energy saving as a selling point.

## A space for creating the future, ...

### Productive sustainability

The metal frame is covered with an innovative translucent cladding: ETFE (Ethylene Tetrafluoroethylene), which acts as a solar filter. The main facade can be inflated or deflated using a pneumatic system, allowing for energy savings of 20%.




The spacious lobby will be a meeting place for the city's best award-winning exhibitors.

A construction benchmark both technologically and ecologically

The Media TIC building enjoys an excellent urban and metropolitan central position, with local, national and international access and connections: by car, (connection to the main railway network), public transport (metro, tram and bus), rail (fast, high speed train and high speed train) and plane (through the intermodal transport station soon to be created).

## ... in the unmatched business area

### Spatial luminosity

The inimitable area is created on the basis of diaphanous and column-free spaces, where natural light and the technical flooring, allowing for a unique versatility in layout, are the exceptional protagonists.




Space, light and technology come together in a building that is unique in versatility and comfort.

**Fittings.**  
All levels have independent and fully lit modern bathrooms.

**Security.**  
Automatic fire detection with explosion in the control room. Our security system is monitored by security teams and CCTV.

**Mediacity.**  
Modules are available ranging from 118 m<sup>2</sup> to 1500 m<sup>2</sup>, in very luminous, versatile use of the space.

**Comfort.**  
Excellent working environment thanks to heating and air conditioning system that can be regulated by modules. Distalca.

**Services.**  
We can find the following services: reception, restaurant, auditorium with 1000 seats, 1000 parking spaces.

**Offices**  
The technical flooring in the office areas means that all kinds of connections, switchboards and high-speed networks can be added easily.

**24-hour security monitoring**  
Security provided day and night through security teams and CCTV, centralized at the control room.

**Intermodal**  
TB Glines  
VLC-MS  
5 stations nearby

**Metro**  
L1 Glines / TB Glines  
L4 Lacarou / Pocherou  
TramBlaie  
TB Glines  
Bus  
E, 20, 43, 44, 67, 68  
PS, 102, N1, N3.

Figure 28. Central pages of a brochure promoting *Media-ICT*.<sup>82</sup>

<sup>82</sup> Source: Consorci ZF (n.d., 5-6).



Figure 29. Cover of a booklet about the Council's Business Support Office located in *Media-ICT*.  
Source: Barcelona Activa and Barcelona City Council (2012).

The practices displayed in the building respond therefore to a hero framing of innovation whereby the Council and potential tenant organisations seek to be associated with positive values and the singularity of the building. It can be argued that in consonance with the concept of the Lefebvrian monument, energy saving and sustainability are thereby banalised and de-politicised in the *Media-ICT*. They produce, together with the related aesthetics, innovation and singularity, a conceptual consensus, whereby the sustainability credentials of the building are its innovative design, along with the deployment of technologies. This hero framing of innovation, along with the monumental use of the building, relate to the Council's desire to "add value" to working and investing in 22@, as

explicitly recognised in the Council Action Plan for 2012-2015 (Barcelona City Council 2012a, 88, 92). This pursuit of added value has been criticized as a feature of the “entrepreneurial city” in which economic interests and development prevail over social and environmental progress (Harvey 1989, 2005; Jessop 1997), and, as reviewed in Section 5.3, as applied to the smart practice of Barcelona City Council (Charnock et al. 2014; March and Ribera-Fumaz 2016).

In comparison to the official representations of the Council and Consorci ZF, the narratives of the design team (Ruiz-Geli and Cloud-9) appeared to grant greater relevance to making energy savings and communicating the practices thus involved. A member of the design team introduced the building in a guided tour in 2015 like this:

[The *Media-ICT*] is designed around energy criteria...the structure and facades relate to this [because] a sustainable building in Barcelona should not have four identical facades...[The *Media-ICT*] needed to be a light construction, to save money in foundations...This money is then allocated to ... researching other ways of doing a façade

As in the case of *Endesa*, energy saving is represented in design narratives as the guiding principle of the building. However, as the quotes show, saving energy justifies and permits the ultimate goal of innovation – the selling point of the Council and Consorci ZF. Innovation was represented as having a positive social and environmental impact. As argued by the same designer that guided me through the building, the innovative design permits that:

[w]hat is constructed is what we see, thus [the building] is ‘empathetic’ because people that walk around know what it is...the building becomes part of the solution and not the cause of [climate change]. (pers. comm. 2015)



In these words, innovation becomes the universal remedy for saving energy and for compelling the public to save energy, under the assumption that a transparent display of building techniques suffices for the laymen public to understand energy-saving practices and to engage with their replication. Aligning with this assumption of the sufficiency of innovation and transparency to generate “empathy” (i.e. to communicate and to normalize energy saving practice), the building’s energy saving credentials were only observed as displayed on the EU Energy Performance Certificate. This was exhibited by the ground-floor gates to the elevators (Figure 30).<sup>83</sup> This sufficiency of the building’s co-production of meaning was explained in the words of the main designer, Ruiz-Geli:<sup>84</sup>

[I]n the second phase [of sustainability]... law determines whether a building is sustainable or not... [through] certificates....What interests me is the third phase, where sustainability is not the topic, because it’s evident... communicative buildings... transfer knowledge, technology, explain what they do and how. (In Carrio 2010, translated from the original)

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<sup>83</sup> Its display, besides the multiple forms of recognition of the building for its innovative design, further contribute to reducing the meaning of energy saving to that of innovation. Moreover, signposting was missing from the interior and exterior of the building that would indicate how different practices contribute to saving energy.

<sup>84</sup> During my visits to the *Media-ICT* I became acquainted with the close supervision that the main designer had undertaken of the installation of movable assets such as curtains and temporary walling. Accordingly, it is unlikely that the limited signposting was not a response to his instructions.

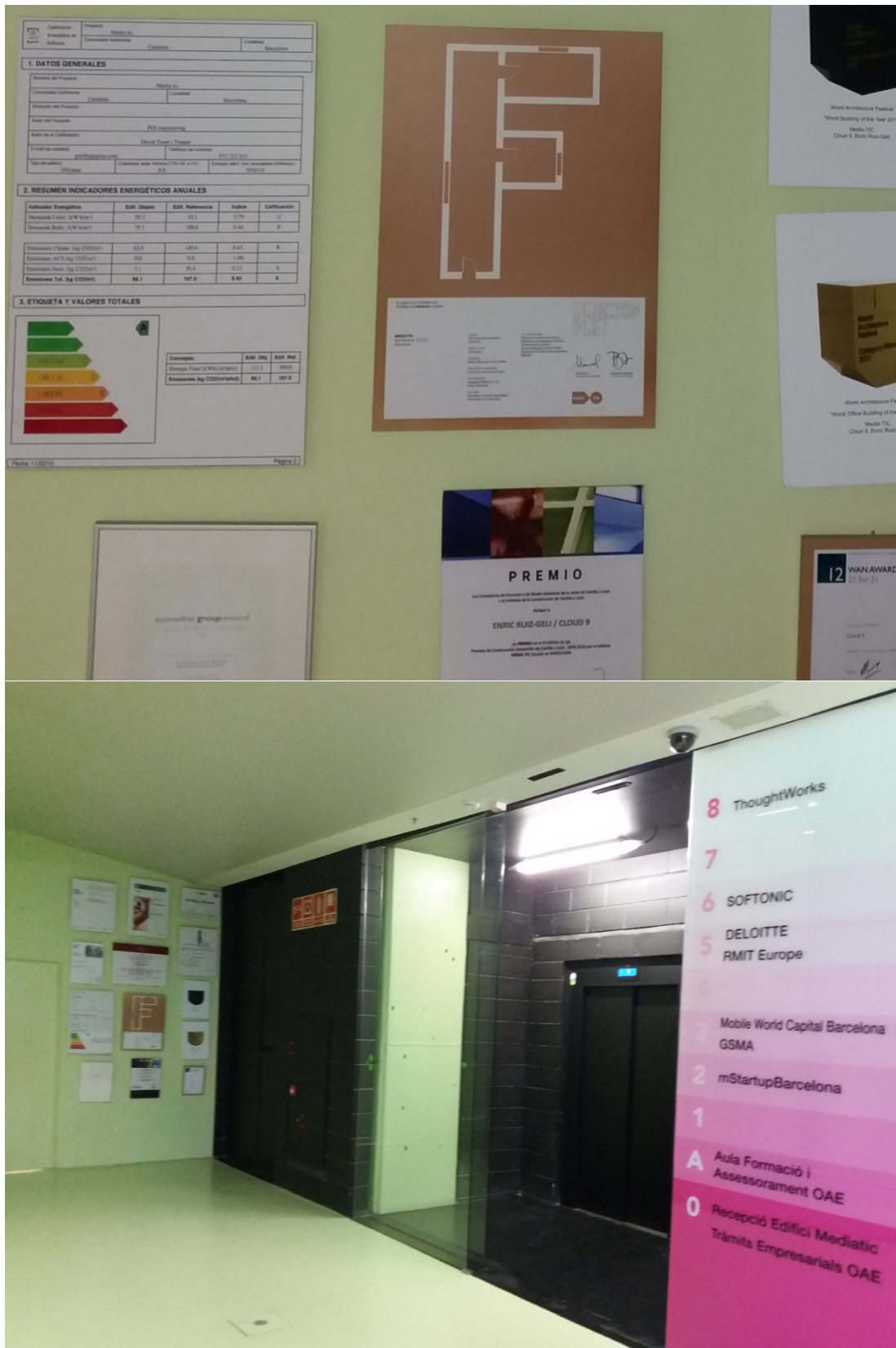


Figure 30. Display of the EU Energy Performance Certificate along with other forms of recognition of *Media-ICT*.

Thus, in designer representations, knowledge and technology are fundamental dimensions of the practice being represented, and are assumed to be able to foster social transformation. These assumptions reflect the Lefebvrian *elite mode of production* (Chapter 2), which relies on expert knowledge and technical improvements, represented in singular buildings – monuments – to foster the illusion that an appropriate practice is being produced. They also correspond with the positivist assumption critiqued by cultural reviews (Dutton and Mann 1996; Guy and Moore 2005a; Wallenborn and Wilhite 2014) of the perception of technology as transparent. In consonance with the building designers, I understand that the normalization of an appropriate morphology – as referred to by Lefebvre – may be countered by explaining it. However, an explanation may be needed so that the public are not misled in their appraisals of energy saving practice, and in the assumption that social transformation automatically follows from technological innovation. Instead, the absence of textual explanation about the extent (and means) of saving energy could legitimate official practice by means of diverting critique that is best equipped to engage with reviews of text, whereby buildings are assumed to be “transparent” (Lefebvre 1991, 292; Dutton and Mann 1996, 38; Guy and Moore 2005a, 5). This reductionist epistemology would then serve to divert attention from the ultimate goal which – as shown in the representations conducted by the Council and the Consorcy – is producing added value for the building, the District and the City. The building can be explained as attempt to “generat[e] (or produc[e]) an appropriate morphology” (Lefebvre 1991, 416) for energy saving practice. By reducing energy saving to innovation, the building demonstrates the Council’s commitment to the digital economy without fostering a fear of environmental regulations, as argued by reviewers of City politics (Charnock et al. 2014; March and Ribera-Fumaz 2016). The reduction in the official framing of energy saving to innovative technologies potentially contributes to legitimating the practice of organisations and expert knowledge (Moezzi and Janda 2014; Janda and Topouzi 2015; Swyngedouw 2010, 2011; Healy 2014).

## 6.4. *Efficient Block*: coherence is not consistency

The *Efficient Block* was during my field research a multidisciplinary competition about ideas for energy renovation. The selected project idea would be supported by the Catalan Government and implemented in a block located in the centre of Barcelona (Figure 31).<sup>85</sup> This consisted mostly of residential buildings but also included a building owned by the Housing Agency of the Catalan Government and two City Council buildings, the latter which was involved as a supporting organisation.<sup>86</sup> An important component of the project was its publicity, which was aimed at engaging the public in residential building renovation (Edificis de Catalunya 2015). Accordingly, it was coordinated by Habitat Futura, “a communication group specialized in sustainable construction” as described in [habitatfutura.com](http://habitatfutura.com). The project originated from the recommendations of the EU research Project MARIE (Mediterranean Building Rethinking for Energy Efficiency Improvement) whose results problematized the maladjustment of EU policies in the Mediterranean context; accordingly, mild Mediterranean winters constitute a barrier to the cost-effectiveness of energy efficiency interventions focused on thermal insulation and disregard locally-adapted designs and behaviours (MARIE 2014, 19).<sup>87</sup>

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<sup>85</sup> The block selected by the organizers was located between the streets Gran Via, Viladomat, Calabria and Diputacio.

<sup>86</sup> The Council buildings consisted of a health centre and a home for the elderly.

<sup>87</sup> A similar argument was put forward during interviews in 2015 by senior representatives of the Catalan Housing Agency (#1) and of the Catalan Institute of Energy to justify the limited action being taken in Government buildings. The cost-effectiveness of building renovation measures in different Catalan climates was being reviewed at the time of this research by the Catalan Institute of Energy (Capdevila presentation, Construmat, 20 May 2015).

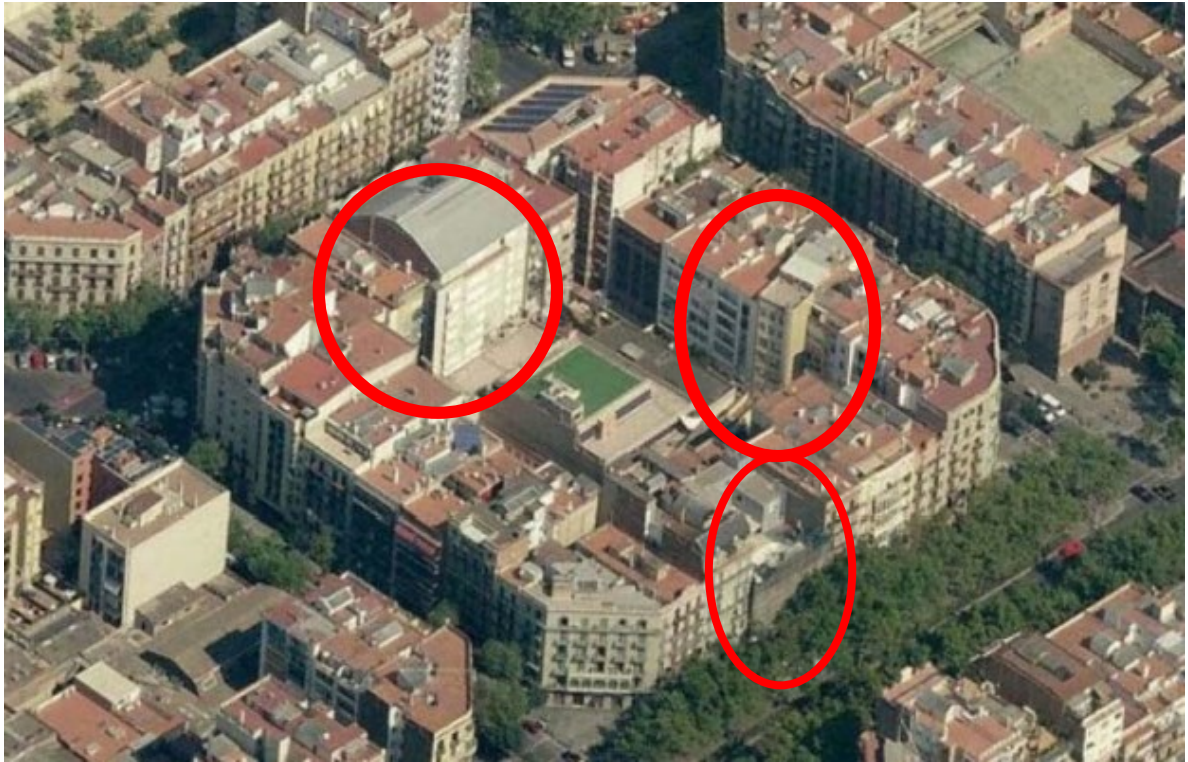


Figure 31. Aerial image of the block addressed by the *Efficient Block* project. The circles indicate the three government buildings.  
Source: Google Maps.

The *Efficient Block* was publicized as “[t]he Block of Barcelona that will provide the benchmark in [building] renovation” (Edificis de Catalunya 2016a) (Figure 32). Responding to MARIE’s recommendations, this meant creating an exemplar in which energy saving practice was adapted to the local context of housing renovation. This is reflected in the first of four specific objectives: “To create a referent model, a pilot project which coins a replicable methodology”. This learning framing of replication is then plausibly connected with the main project objective: “to create a market for housing renovation...” (ibid). However, the main objective does not acknowledge, in alignment with MARIE, the limitations of the official practice espoused in EU policies and implemented by the Catalan Government. Instead, the replication of the experience is to be attained – as the main objective continues –, “...through a change in the values in citizen perception” (sic, Catalan version), which is also reflected in the last of the specific objectives: “To decidedly contribute to *the* perception change about renovation, generating a new positive sentiment of appreciation *in* citizens” (ibid, my emphasis). The blame for

limited success with building renovation is thus placed on the public, not on official knowledge and practice. This provides a new interpretive light in the words of Senior representative of the Catalan Housing Agency #1 (referenced in the introduction to this Chapter): “exemplarity... does not give politicians leadership... [Because] the public does not believe in them” (pers. comm. 2015). Accordingly, the project narratives reproduce the problematic blaming of citizens that underlies the dominant techno-economic problematisation of the energy efficiency gap – as argued by Lutzenhiser (2014) and thoroughly discussed in Chapter 2.



Figure 32. Promotional poster for the *Efficient Block*.  
Source: Edificis de Catalunya (2016a).

Countering the interpretation of the project description presented so far, two specific objectives require the involvement of government policies and practices: “To promote a new normative framework and institutional instruments”, and “To activate financing mechanisms able to stimulate demand for energy and sustainable building renovation” (ibid). Arguably, these objectives would contribute to promoting energy renovation to a rational decision-maker who reflects on the economic and administrative context of renovating. Also, taking beyond Jackson’s claims about coherence (2009), experience with a consistent normative and financial context could contribute to the

public's granting credibility to official exhortations. However, these objectives are not related in the text to the production of "values" and a positive "sentiment". They can be understood, however, as referring to a vague relationship between the *Efficient Block* and the transformation of "citizen perceptions". From the theoretical approach of this dissertation, the context is reduced to a singular exemplar, a monument of citizen practice produced under the command of the government whose purpose is produce an illusory consistency of practice; i.e., to induce a new "sentiment". As the main objective shows, there is a risk that the project diverts attention from the normative and financial context, and hence from the practice of the government. Furthermore, no mention is made of the government buildings in the block, nor elsewhere, which fact serves to contextualise the *Efficient Block* as part of ongoing efforts.

The framing issues presented here appear to be inbuilt into the Catalan Government Strategy for Energy Renovation of Buildings (ECREE) (Catalan Government 2014). In related communications, projects like the *Efficient Block* are referred to as: "projects whose innovation, publicity, savings and investment qualities make them a flagship and a referent" (Edificis de Catalunya 2016b). This appears to respond to a hero framing of innovation and singular (flagship) buildings, whose function is to generate "publicity" more than to produce a consistent practice. The term "referent" is not further explained, leaving it unclear to what extent these buildings are to be replicable. Whilst investment and savings are considered as potentially attracting publicity, the cost-effectiveness of such practices and those that require little or no investment are not reflected in the definition. More than learning, these projects seek to attract attention, disregarding their context of replication. In contrast to the Strategy text, Senior representative of the Catalan Housing Agency #1 explained the former as fostering "projects that are *not pilot* but exemplary, whose high replicability...serves to explain their success, as applicable to your [the public]

conditions” (pers. comm. 2015, interviewee’s emphasis). A similar understanding was shared by a senior representative of the Municipal Institute of Housing and Renovation, who acknowledged the quasi-sufficiency of vernacular practices to ensure adequate levels of thermal comfort in the mild climate of Barcelona (pers. comm. 2014). The words of these officials are aligned with the findings of MARIE and highlight the replicability of low-cost, vernacular practices fostered by the government, as opposed to the ECREE strategy text which seems to prioritize more visible, higher budget, innovative and singular exemplars. As with the case of the Council policy, practices and communication (Section 5.3), there appears to be conflict of framings between the narratives of: a) implementing officials, which acknowledge the learning potential in smaller, integral and replicable practices, and b) politicians (who drafted the ECREE) and communication experts (who coordinated the *Efficient Block*) who prefer costlier, innovative and singular exemplars.

These contradictory framings reflect on the project definition and implementation. The project evaluation criteria involved “a coordination system amongst condominiums”, “a model of neighbour participation and engagement” and the “replicability of the rehabilitation proposal” (Edificis de Catalunya 2015, 4). However, the three government buildings in the block did not participate, hence jeopardizing the potential for coordination amongst condominiums and the replicability of the project in other blocks with mixed uses, common in the City.<sup>88</sup> A profusion of mixed-use blocks with multiple buildings would have made desirable the participation in the project of multiple buildings and types to foster replicability. Paradoxically, the non-participation of government buildings was justified in communications to expert participants “on the grounds of replicability...to avoid making the block atypical” and to “reduce the amount of stakeholders to convince” (Participant architects I & #2, pers. comm. 2015). Adding to this paradox, a renovation project was

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<sup>88</sup> Mixed use is furthermore promoted in the Urban Plan of Barcelona (Barcelona City Council 2006b)



ongoing in one of the Council buildings, and was also planned for the building of the Catalan Housing Agency. The technical plans for both projects were displayed along with the project ideas submitted for participation in the *Efficient Block* in a public presentation of the *Efficient Block* at Construmat on 13 May, 2015 (Figure 33). This attempt to show that government actors were also renovating their buildings resonates with the recognition of *coherence as a pre-requisite for credibility* formulated by government representatives (see the introductory section to this chapter). However, *coherence* is reduced here to the relationship between the conceptual-textual domain and the building-as-monument, showing disregard for the material and social integration of practice for attaining credibility.

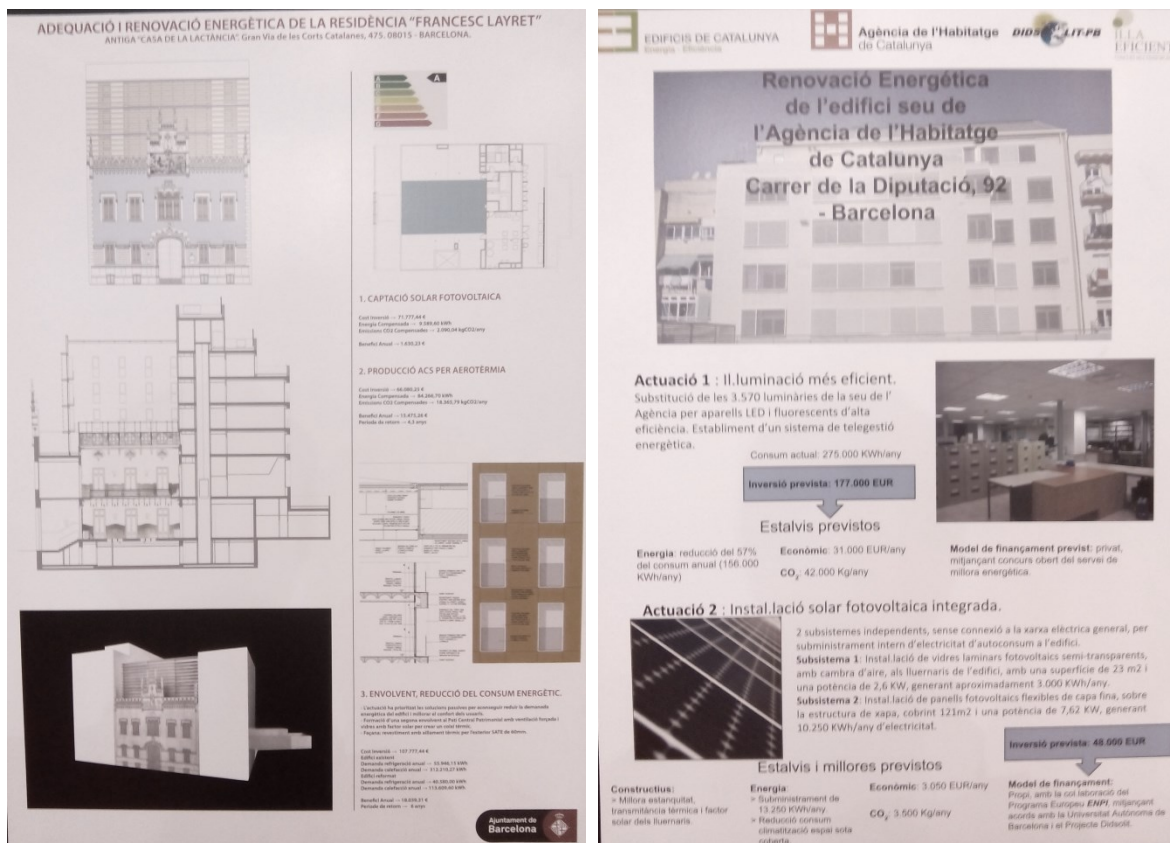


Figure 33. Energy renovation plans of the Catalan Housing Agency and the Council's Residencia Francesc Layret. Photo of the plans as displayed during the presentation of the *Efficient Block* Project in Construmat, 13 May 2015.

Based on the arguments presented above, it seems plausible that government actors did not have the will to participate on equal terms with the residential public. This would have exposed their buildings and practices to public scrutiny, transforming existing relations. This argument is supported by the discussion in Sections 5.2 and 5.3 where I have discussed the limited efforts at certification and communication by the Council and the Catalan Government as an attempt to avoid public scrutiny. It is also possible that government actors did not have the administrative instruments to tie the fates of their buildings to a public participation process. For this to happen, normative, institutional and financial instruments should have been in place prior to the start of the *Efficient Block* competition of ideas to ensure the participation of the government on equal grounds with the public. Further supporting the claim to the limited participatory grounds of the project, the pre-selected project-ideas were labelled according to technical criteria prior to allowing inhabitants to vote (personal observation, public presentation of the *Efficient Block*, Construmat, and 13 May 2015). This shows limitations in the participation process and the prevalence of technical and economic expertise over everyday knowledge. The *Efficient Block* thus reproduces the hierarchical relations between those governing and those governed.

By problematizing public perception instead of government practice, avoiding participation on equal grounds with residential buildings, and using technical knowledge to direct the choices of inhabitants, the organizers of the project reproduced the hierarchical relations between those governing and those governed. An apparent learning framing of replication constitutes a mere representation insofar as government organisations do not acquiesce – even occasionally – to participating on an equal footing with the public, transforming existing relations through exposing them to the light of public scrutiny. This

would imply going beyond a *coherence* that relies on the monument and hence a hero framing of innovation and singular exemplars that is preferred by politicians and communication experts. It instead implies producing a *consistent* practice whereby the extent to which the government integrates energy-saving practices would be exposed to public scrutiny. Necessarily, new social relations would thus be produced. This is required by Lefebvre (1991) and social practice theorists (Shove 2010; Shove and Walker 2010, 2014; Wilhite 2013), for an appropriate practice to be produced.

## 6.5. Chapter summary

This chapter shows the reliance of politicians and communication experts on singular and innovative exemplars in framing energy saving practice. In these actors' narratives "exemplary" buildings contribute to "coherence" between organisational practices and their narratives that is necessary for the "credibility" of the latter. This understanding of coherence aligns with that of Jackson (2009). Apparently responding to the former, the studied buildings show an overall reliance on singular exemplars whereby innovative, often costly and visual practices, which prevail over less visible practices whose cost and fit to local conditions increases their replicability. Moreover, regardless of the apparently praiseworthy efforts of the organisations to integrate energy-saving practices into their buildings, the former tend to be disregarded in communication, missing an opportunity to show how organisations care about saving energy.<sup>89</sup> This hero framing of innovation and singular exemplars, prevalent in official representations, marginalizes the context of practice. The case studies, like Lefebvrian monuments, pursue a strategy of representing coherence between singular exemplars and official narratives which are assumed to produce an *appropriate practice* in the official narratives of organisations. However,

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<sup>89</sup> Exceptions include the initial communication of Endesa and the use of Fabrica as a hub for organizing visits to other Council exemplars.

inspired by Lefebvre (1991), it is claimed that this *coherence* is illusory as far as it is not *consistent* in terms of: a) material integration within the organisation – in its buildings or elsewhere, – or b) social integration – transforming the way organisations relate to the public.

a) Reliance on monumental representations serves to deflect public scrutiny of the buildings, the commissioning organisations, and the technological problematisation of energy saving practice. “Green buildings” play a fundamentally important role in reaping legitimacy for organisations (Bowen 2015, 113). Legitimacy-pursuing organisations are concerned, thus, with the risk of failing to meet expectations and generating what Janda and Topouzi term “horror stories”. As a result, information is presented in ways that deflect attention from the least praiseworthy aspects of the buildings (2015). This potentially explains in *Fabrica del Sol* the removal of monitoring displays and the discontinuation of collaborative relationships with civil society (Futur Sostenible) that is aware of the building’s limitations. A preference for aesthetic and innovation-related values – common to all cases, but particularly emphasised in the *Media-ICT* – enables, according to the theoretical framework of this dissertation, organisations to become associated with consensual values that are empty of meaning. Claiming adherence to these values serves the purpose of building legitimacy for the organisations, as defined by Suchman (1995), without needing to make textual claims which would provide appropriate ground for critique (Dutton and Mann 1991; Lefebvre 1991). Such appears to be the case of the limited communication about the *Endesa* building whose founding organisation, regardless of the integral adoption of energy efficiency into the organisation’s buildings, preferred to divert attention due to the context of adverse public opinion towards energy companies (Section 5.2).

b) The integration of the social dimension of practice in official representations also seems to be limited. As shown with *Endesa*, the design team at first faced opposition from the company concerning the transformation of floor distribution in ways that would permit more democratic access to natural light. The participation of *Futur Sostenible* in the operation of *Fabrica del Sol* was also not referred to in official communications, which otherwise could have been used in credit-seeking by the Council regarding the promotion of collaboration with civil organisations.<sup>90</sup> The most prominent case I reviewed of limited attention being paid to the transformation of the social relations between the organisation and the public concerns the *Efficient Block*. The related participation process was problematic due to the failure of the Council and the Catalan Government (which owned buildings in the block) to engage on equal grounds with the inhabitants who were being exhorted to participate. This supports claims about the absence of sufficient determination to engage in a participatory process whereby government practices would be made subject to democratic decision-making, overall contributing to the production of a replicable mechanism for governing the renovation of City blocks in their diversity and complexity.

Consequently, the case studies frame energy saving practice as reduced to innovative practices and singular exemplars which are decontextualised and fail to seize the opportunity to engage in a reflective process with the public. Engaging in such a process could address the mistakes that were committed – as in the case of the solar thermal system of *Fabrica del Sol* –, the replicability of practices in place, and their vernacular counterparts. Engaging with such a reflective process with the public would serve to represent the commissioning organisations as caring about: a) saving energy – by reflecting on the integration of practices, – but also about b) fostering learning and replication

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<sup>90</sup> As opposed to the communication during the time of the incumbency of the leftist councils (1999-2011 and 2015-?), during the time of field research the *Fabrica* was represented as the sole commitment of the Council.

amongst the public. Approaching buildings as representations that frame energy saving practice permits, therefore, the expansion of critical analyses wherein official narratives prevail, epistemologically, over non-narrative representations (Dutton and Mann 1991; Guy and Moore 2005a; Wallenborn and Wilhite 2014; Lefebvre 1991). Furthering claims about the need for narrative-practice coherence as a means of supporting the credibility of official narratives (Jackson 2009), I propose a Lefebvrian focus on the *consistency* of practice (i.e. throughout its narrative, material and social domains). Incorporating the consistency of practice would also create a new avenue for furthering the study and critique of organisations according to their capacity to foster a caring framing, hence expanding the transformative potential of caring stories which in the work of Janda and Topouzi are the stories least developed and those which have the greatest transformative potential (2015). The critical review of the cases that is presented suggests the possibility of and need for reframing official representations of energy-saving practices in commercial buildings as a) the integral practices of the commissioning organisations, b) replicable by the public, and c) producing social relations that are appropriate to (re)producing a practice of energy saving.

From a review of the Lefebvrian contradictions between narrative, material and social representations deployed in, about and around the buildings, this chapter supports claims about the studied buildings operating as monuments which decontextualise energy practice and empty it of meaning, and divert attention from the social order and the practices of government and corporate actors. This contributes to furthering the scope of critique of corporate responsibility scholars, which acknowledges the legitimating function of energy-saving buildings (Bowen 2015; Lyon and Maxwell 2011; Bowen and Aragon-Correa 2014). It is now possible to acknowledge as “greenwashing” not only misleading narrative claims but also the material representations which illusorily represent the practice

of organisations as consistent. By “making implicit, tacitly known frames explicit”, this chapter constitutes an act of “assisted reframing” (van Hulst and Yanow 2014) that addresses the limitations and political implications of “exemplary” building conceptualisations. Reappraising the context of practice amounts to a radical critique that is potentially able to deter organisations from using commercial buildings as legitimating instruments, forcing them to engage in integral, replicable, transparent and appropriate social practices in their endeavours to improve their public image. This chapter reframes the problem of energy saving, making organisations liable and thus countering the current situation described by authors like Lutzenhiser (2014) and Moezzi and Janda (2014), whereby residential publics are blamed whilst organisations are celebrated for the rationality of their behaviour.

In the following chapter I contrast the arguments hereby presented with narratives of the public making meaning of energy saving practice through their interaction with the case studies.

## Chapter 7. Everyday meaning-making

Responding to the empirical gap demonstrated in Chapter 2, in this chapter I review the public appraisal of the official practice as represented in commercial buildings. I address Question 3: *How does the public make meaning of energy saving practice through their everyday experience with four commercial buildings in Barcelona?* Understanding this is important because from an interpretive perspective policy attempts to compel the public to engage with new practices are acts of reframing (Yanow 2009; van Hulst and Yanow 2014). As problematized in Chapters 2 and 3, there is a need to re-cognise, from a policy-making perspective, how everyday epistemologies operate to bridge the epistemological divide between the former and official representations.

Inspired by the work of Lefebvre (1991) and the social practice theories reviewed in Chapter 2, I understand that the public makes meaning through mental, perceptual and experiential engagement with the conceptual, material and social components of practice, i.e. the context. The purpose of this chapter is, therefore, to demonstrate the potential for and the need to assess official representations (policies, practices and buildings) according to their capacity to co-produce a practice that is consistent from the perspective of everyday epistemologies, and one that the public acknowledges as credible and replicable. Since the assessment of energy saving policies and practices is dominated by quantitative assessment and narrative analysis (Sovacool et al. 2015), the chapter also aims to contribute to the incorporation of everyday epistemologies – as found necessary by Guy and Moore (2005b). In alignment with the suggestions of these authors, I reflect on the narratives of a plurality of actors. In particular, I focus on the role of the latter, as publics, in relation to the *monumental representations* that commercial buildings constitute for Lefebvre. The contradictions inherent in the former, appraised using the epistemological grounds of



everyday meaning making, enable a radical critique of dominant knowledge and the established order (1991). For the public and organisations to engage in the production of an appropriate practice of saving energy, successfully addressing this critique appears to be a task of fundamental importance.

As explained in Sections 4.6 and 4.7, my pluralist approach includes the narratives of laymen passers-by and users, and my own observations – not always explicit in the text, but which I acknowledge to underlie the formulation of research and interview questions. Also, I acknowledge the role of experts as public who make meaning of energy saving practice through their daily experience with commercial building design and management, involving close insight into the priorities of organisations – contributing a radical critique of the organisation interests. As discussed in Section 4.7.1, including experts as publics is problematic according to some readings of Lefebvre, inasmuch as experts are not aware of the political utilization of their knowledge (1991, 338). The same thus applies to laymen public narratives because, according to Lefebvre, everyday meaning-making is made subject to unquestionable quantitative knowledge. Analytically, I have attempted to overcome these limitations by studying whether narratives disregard the context of practice – reproducing the official framing of innovation and singular exemplars – or whether context is highlighted in the process of making meaning (Section 4.10).

Through the following sections I develop my arguments about the meaning of energy saving, the credibility of official claims, the replicability of practices and the legitimacy of organisations as being co-produced through everyday engagement with the context of practice. In section 7.1, I show how the public understanding of energy saving conceptualisations and their practice in commercial buildings reproduces an official hero framing, as presented in Chapters 5 and 6. In Section 7.2, I describe the interest in re-appraising the everyday experience of experts as a contribution to revealing the political

interests that underlie official framings. In Sections 7.3 - 7.6 I review how passers-by and users make meaning of energy saving practice through their perception of and experience with the buildings under analysis. The narratives of the former support my arguments, which I develop in Section 7.8, about how energy saving practice is appraised in the context of everyday life, which supports my arguments about the need for reframing official representations – and the overall practice of organisations – that attempt to compel the public to save energy. These need to be better aligned with everyday epistemologies to co-produce practices that are credible and replicable. This chapter thus contributes to empirically revealing how the de-contextualised practices represented in commercial buildings alienate the public. Scholarly and everyday recognition of this fact could therefore help make organisations accountable for the extent to which their representations contribute or counter the (re)production of a practice of saving energy.

## 7.1. An alienating conceptual consensus

When I asked laymen public their opinion about the buildings under analysis and the *use* of energy in them, I was careful to avoid naming and framing *energy saving* (see the questions in Appendix 3). However, respondents introduced terms in their initial statements such as “efficiency”, “[cost] savings”, “sustainability”, “renewable technologies”, “self-sufficiency”, “smart”, and “energy renovation”. These terms reproduce the jargon of experts about technology and economics. Their use shows the dominance of such expressions over more quotidian terms such as “saving” or “reducing consumption”. At times, these quotidian terms were introduced, mainly at later stages, to explain the purpose of the aforementioned expert conceptualisations. For instance, some claimed that “energy...should not be wasted” (User-worker at *Endesa* #4, pers. comm. 2015), or that “all that can be saved is good” (Frequent passer-by who lives near *Endesa* #1, pers. comm. 2015), potentially hinting at an ethical and environmental justification. Other justifications

appeared to reflect on the underlying economic rationale for energy efficiency conceptualisations with claims like “it’s worth it!” (User-worker at the 3D Printing Space of *Fabrica del Sol* #2, pers. comm. 2015). References to the ecological benefits of the official practice were not identified: “All that is energy saving is a good idea. The intention is to be smart and supposedly ecological too, right?” (User-worker as receptionist at *Media-ICT* #2, pers. comm. 2015). Furthermore, as the quote shows, official practices – being smart, in this case – become goals in themselves. These quotes show that the expert conceptualisations and rationale of “energy saving” are reproduced in the public imaginary as responding to common values and contributing to the public good. However, the ethical, economic, or environmental nature of these common values and goals remained tacit.<sup>91</sup> This situation supports critical claims about the relationship between expert conceptualisations and the de-politicisation of “energy saving”, such as those presented in Section 2.1. In alignment with the Lefebvrian theorisation presented in Section 3.2, expert conceptualisations that are empty of meaning contribute to a banal consensus because they are assumed to imply positive social transformation, regardless of the fact that this transformation is illusory and restricted to technological change.

Contrasting with the apparent acceptance of expert conceptualisations presented so far, laymen public appealed to their limited economic resources to justify limited engagement in saving practices: “...people don’t have much to spare. They need support!” (User-worker at *Endesa* #2, pers. comm. 2015). This understanding was extensive in reference to the obligation to obtain Energy Performance Certificates after the construction, renovation, sale and rental of residential buildings and units. For instance, a frequent

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<sup>91</sup> The generalized acceptance of energy-saving practices as contributing to the common good, along with limited explanation of the ultimate purpose of these practices could be related to the (short) nature of on-the-spot interviews, wherein respondents could avoid digressing and opening up to debate with less optimistic claims. However, this argument loses validity as it applies to the length and depth of responses about the perceptual and social dimensions of the buildings, which I present in Sections 7.2-7.4.

passer-by at *Media-ICT* complained that “...apartments are expensive enough for such measures to represent an extra burden – even if in the long run they bring about savings” (pers. comm. 2015). Moreover, at the time of the field research there was a profusion of such certificates being cheaply and quickly produced that that resulted in underestimates of the ratings of building performance: “If you pay 100 euros, you will get the lowest rating, but you will get it” (Architect involved in *Endesa*, pers. comm. 2014). This suggests that these certificates were of limited value to the public, thereby explaining their appraisal as burdensome.<sup>92</sup> Other respondents referred to a lack of technical knowledge as another factor in the public’s reluctance to engage in saving energy: “citizens depend on technical support from the government” (Frequent user of the *Media-ICT* #2, pers. comm. 2015). Examples raised by respondents included the solar thermal regulations in Barcelona (Section 5.3.3): “the [problem is the] lack of technical knowledge. That is why solar panels do not work. There should be [public] resources to make them work” (Frequent passer-by at *Endesa*, pers. comm. 2015). Thus, notwithstanding the fact that energy saving values are socially accepted, their practice is conceptualised as technologically and economically demanding. Supporting this argument, vernacular and quotidian practices of limited technical complexity and cost, such as using curtains or switching off lights when not required, were excluded from the main understanding of “energy saving”. (These practices were mostly referred to with reference to the limitations of the cases, as reviewed in Sections 7.4-7.8). I show how this mental consensus about expert conceptualisations has implications for public engagement in saving energy.

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<sup>92</sup> During the field research, the energy certification of residential apartments was widely advertised at a cost of EUR100, available within twenty-four hours. Policy implementers were also concerned about the public perceiving such certificates as red tape and disregarding their informative and market transformative purpose (Senior representative of the Energy Efficiency Cluster of Catalonia, pers. comm. 2015; see also Senior representative of the Catalan Housing Agency #2, pers. comm. 2015).

The public consensus surrounding expert conceptualisations contrasts with the apparent alienation of the former from saving energy, which is considered burdensome because its meaning is being confused with, and eventually reduced to, its techno-economic dimension. It appears therefore that reducing energy saving to the conceptualisation of experts plays a role in alienating the public from saving energy. The latter reject and furthermore react to such principles as a foundation for their everyday practices, as argued, for instance, by Moezzi and Lutzenhiser (2010) and Slocum (2004). In acknowledging the general acceptance of energy saving values, the apparent alienation of the public speaks to the responsibility of commissioning organisations, designers and governments who implement EU certification that empties energy saving of context, and furthermore presents energy saving as a technical and economic burden. More specifically, the opportunity to re-cognise vernacular and zero-cost practices in attempts to compel the public to save energy appears to have been missed. This process of elite legitimation and public alienation is common ground for critical reviews of energy governance (Swyngedouw 2010, 2011); buildings (Janda and Topouzi 2015); smart cities (Anttiroiko et al. 2014; Haarstad 2017; Baccarne et al. 2014; March and Ribera-Fumaz 2016; Fernández González 2016); and of reductionist conceptualisations of energy saving (Tregidga, Milne, and Kearins 2014; Wilhite and Shove 1998; Wilhite and Norgard 2004), as presented in Chapter 2. However, there is insufficient literature that empirically demonstrates this legitimating rationale and this alienating effect. In the following section I seek to identify the root of this situation as presented through the lens of the experiential knowledge of building commissioning and certification experts.

## **7.2. A radical critique of experts**

Although experts were not directly questioned about this topic, they referred to their experiential knowledge to problematize the reduction of energy saving to expert

conceptualisations and its causes. An architect involved in *Endesa* design argued the following:

[T]he word ‘sustainability’ is fashionable now; we have abused it... population awareness is high, but they don’t know...what the meaning of an ‘A’ rating is [the highest rating on the EU Energy Performance Certificates]. (pers. comm. 2014)

Experts and elites are therefore to blame for overusing certain conceptualisations, and for disregarding the importance of communicating meaning to the public, ultimately explaining the conceptual confusion and public alienation described in Section 7.1. An underlying reason for this may be the interest of the former two actors “in conceptually confusing things” in order to gain credit (Senior representative of the Energy Efficiency Cluster of Catalonia, pers. comm. 2015). In alignment with cultural reviews of architecture (Section 2.5) and Lefebvrian concerns about form superseding use, expert publics complained that “architecture” and “building quality” is reduced to saving energy, hence marginalizing considerations of comfort, health, and life-cycle impact.<sup>93</sup> These experts complained about public “ignorance” and “disinterest” which experts, and policy- and decision-makers were blamed for enunciating misleading energy saving claims. In the words of Renewable Energy Expert #1, involved in *Fabrica del Sol*: “everything is [called] ‘sustainable’ now, and many times this is not true” (pers. comm. 2015).

Based on expert reviews, I explore the roots of the discrepancy between building performance and claims of a prevalence of designs that are inadequate for saving energy, according to contemporary concerns. According to a prominent Spanish architect, internationally acclaimed commercial building designs originate from technological

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<sup>93</sup> This argument was developed in depth in personal communications that took place in 2015 with: Architect at a supplier company #1 & #2; Architects participant in the *Efficient Block* #2 & #4; Architect involved in *Fabrica del Sol*; Engineer involved in design of *Media-ICT* and *Endesa*.

developments that during the twentieth century based active systems of comfort provision on a reliance on cheap energy, instead of – more visible – adequate building designs and materials (Pich-Aguilera 2012). This resulted in limited attention being paid to vernacular practices involving daily routines, cross-ventilation, shadowing and spatial divisions in the models used to calculate performance ratings, and in some of the cases under study – as argued by several expert interviewees.<sup>94</sup> Increasing interest in international designs was furthered with “global competition amongst cities...to attract tourists and investors”, which explains the interest of Barcelona and other cities in “spectacular architecture” and the use of internationally acclaimed designers (Architect involved in *Endesa*, pers. comm. 2014). This explained for several interviewees the absence of solar protection in landmark buildings in Barcelona like the MACBA, the Torre Marenstrum, and the Torre Agbar, whose interiors overheat (Architect participant in the *Efficient Block* competition #4, pers. comm. 2015; Architect at a supplier company #2, pers. comm. 2015).<sup>95</sup> The prevalence of these designs regardless of their energy-related costs, corroborates claims about the prevalence of aesthetic values over co-producing a practice of saving energy. These values, along with the representation of energy saving and consuming practices as transparent, contribute to the legitimacy of the organisations and the technical practices of experts (Ward 1996; Guy and Moore 2005a; Dutton and Mann 1996; Lefebvre 1991).

In this context, increasing the relevance granted to climate and energy saving issues would raise difficulties for commissioning organisations, because for them “it is very important to pretend ... to be perceived in a certain way, by the market or society... their

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<sup>94</sup> The interviewees who referred to this problematique in interviews taking place during 2015 include three architects participant in the *Efficient Block* (#2, #3 & #4), Architect at a commercial building supplier company; Senior engineer involved in design of *Media-ICT* and *Endesa*; Expert renewable energy *Fabrica del Sol* #2. These experts referred to excessive solar radiation in the case of *Endesa* and *Media-ICT*, and the lack of spatial division for efficient climate control in *Endesa*, *Media-ICT* and *Fabrica del Sol*.

<sup>95</sup> This is problematic, because air-conditioning accounts for the greatest energy demand in commercial buildings due to Barcelona’s Mediterranean climate, making solar protection and partitioning a fundamental component of energy saving practice.

own corporate buildings... have to be an example” (Engineer involved in design of *Media-ICT* and *Endesa*, pers. comm. 2015). A will to mitigate excessive consumption and any potentially negative reputational impact related would explain the incorporation of renewable, efficient and smart technologies. However these technological fixes leave unaddressed the great potential of good design and management, and conceal the potential for passive and vernacular practices of everyday.<sup>96</sup> These fixes thus constitute what Lefebvre calls “technical improvements of detail” (1991, 59-60) that are unable to produce a practice in themselves but generate the illusion that saving energy means deploying these technologies, and thereby explain the apparent alienation of the public, as discussed in Section 7.1.

Acquainted with insight into the process of certification-rate calculation, some expert publics digressed in their narratives to question the credibility of the ratings obtained in multiple commercial buildings, acknowledging the leverage of experts in terms of the application of calculation models.<sup>97</sup> This deceptive use of energy saving claims is enabled by the absence of comparable and verifiable indicators such as energy consumed per square meter and year (kWh/sqm year), and adequate mechanisms of verification (as discussed in Section 5.2) that would foster “good design” and counter the current preference for “clones” of internationally acclaimed designers (Architect at a supplier company, pers.

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<sup>96</sup> Amongst the experts who argued this way: Senior engineer involved in design of *Media-ICT* and *Endesa* building, pers. comm. 2015; Architect at a supplier company I & #2, pers. comm. 2015; Architects participant in the *Efficient Block #2#3*; pers. comm. 2015; Architect involved in *Endesa*, pers. comm. 2014; Senior expert renewable energy policy and practice in Spain, pers. comm. 2014. Not all experts had negative opinion about these technological measures; some granted credit to the efforts of organizations: “[C]orporate organizations are ahead [in energy saving] because of branding. These are their emblematic buildings” (Architect Participant in the *Efficient Block #2*, pers. comm. 2015).

<sup>97</sup> A diversity of experts questioned the high ratings awarded *Media-ICT* (A rating), and *Endesa* (A and B ratings), which were regarded with doubt and disdained for having a “marketing” or “greenwashing” function (Architect involved in *Fabrica del Sol*, pers. comm. 2014; Architect participant in the *Efficient Block #4* pers. comm. 2015; Architect at a commercial building supplier company, pers. comm. 2015; Senior engineer involved in design of *Media-ICT* and *Endesa*).



comm. 2015).<sup>98</sup> Current ratings, however, based on ad hoc models and applied freely by designers, may contribute to concealing and decontextualising negative information, thereby transforming what are potentially “horror stories” about poor performance into “hero stories” (Janda and Topouzi 2015). To the success of these stories then contributes the consensus surrounding expert conceptualisations that is discussed in Section 7.1.

Although the presented expert critiques acknowledged the function of commercial buildings of communicating a certain image about organisations, there were few references to their potential for compelling the public to save energy, hence contributing to claims about the “transparency” of technologies and buildings (Guy and Moore 2005a; Dutton and Mann 1996; Lefebvre 1991). Multiple interviewees problematized the automatization of lighting and heating systems. These were understood as necessary for reducing consumption and ensuring user comfort in commercial buildings.<sup>99</sup> Acknowledging this, some respondents were concerned that “automation [would] limit the educational potential” and “make people stupid... [because] the machine decides ... not the user” (Architects participant in the *Efficient Block* competition #3 and #4, respectively, pers. comms. 2015).<sup>100</sup> This reproduces an understanding of practices being reproduced through use – and not through perception and everyday engagement with the context – which I find common in the empirical reviews of commercial buildings (Section 2.7).

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<sup>98</sup> The limited credibility of Energy Performance Certificates was also related to the limited control of government agencies, as acknowledged, amongst others, by a senior representative of the Catalan Institute of Energy (pers. comm. 2015).

<sup>99</sup> The most fervent defenders of this position included: Architect Participant in the *Efficient Block* #4, pers. comm. 2015; Architect at a supplier company #2, pers. comm. 2015; Architect involved in Endesa building, pers. comm. 2014.

<sup>100</sup> Explicitly acknowledging automation as countering learning, the deployment of automation was halted in *Fabrica del Sol*, where “users are more aware than average” (Council official for the *Fabrica del Sol*, pers. comm. 2015). In *Endesa*, automation was accompanied with two-way communication with users (Communication official of Endesa, pers. comm. 2014). In *Media-ICT*, the only communication with users that I could identify was a display of the building’s performance rating.

The role of buildings in communicating energy saving values, practices and achievements to non-user publics was implicitly recognised in claims related to the relation of organisations with the public:

a) Some explained that limited textual publicity existed to obscure the actual performance of the building and the extent to which practices are integrated into the organisation<sup>101</sup>. Others recognises the illusion enabled by insufficient recognition that “efficiency and spectacle are two different things: it is not the same seeing an animal in a zoo or in a circus” (Architect participant in the *Efficient Block* competition #2, pers. comm. 2015). The function of the spectacular architecture of singular buildings is thus to “divert [public] attention from the centre of power” (Architect involved in *Endesa*, pers. comm. 2014). These expert explanations align with scholarly arguments about the preference of organisations for keeping their practices unexposed to public scrutiny (Lefebvre 1991; Geels 2010; Lyon and Maxwell 2011; Greenberg 2014); a claim that is reviewed in Chapter 2, and which aligns with the Lefebvrian critique of commercial buildings as monuments, as presented in Section 3.3: “Buildings are to monuments as everyday life is to festival” (1991, 223).

b) In addition to the interests of particular organisations, limited policy effort to integrate and communicate energy-saving practices – as described in Section 5.2 – was explained as a response to vested interests in delaying the normalization of energy-saving practices. These interests include those of energy corporations, on whose boards of

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<sup>101</sup> Experts who supported this claim included: Senior engineer involved in *Media-ICT* and *Endesa*, pers. comm. 2015; Architect at a supplier company #2, pers. comm. 2015; Independent architect and PassivHaus proponent, pers. comm. 2014; Architect involved in *Fabrica del Sol*, pers. comm. 2015; Architect involved in *Endesa*, pers. comm. 2014; Architects participants in the *Efficient Block* #1, #2 & #4, pers. comm. 2015

directors are preeminent politicians, and those of banks, which fear seeing their building stock becoming obsolete, as also argued in section 5.2.<sup>102</sup>

These two explanations correspond with a Lefebvrian understanding of the commercial building as a monument which serves to proclaim certain values and practices and the overall production of an appropriate practice while avoiding exposure to critique, thus making non-textual claims preferable to text-based ones (1991; see also Dutton and Mann 1996).

Countering Lefebvre's claims about experts being "unaware that their activity is of an ideological nature" (1991, 338), the experiential knowledge of experts with building commissioning and certification grounds a radical critique of how and why organisations foster through commercial buildings a banal consensus, and fail to address the public alienation described in Section 7.1 of this thesis. Experts acknowledge the potential of efficient, renewable and smart technologies; they are critical about the insufficient attention paid to design and materials, as well as to the problematic monumentality of singular exemplars in attempts to communicate energy saving values and practices to the public. The energy saving values and achievements proclaimed through commercial buildings and quantitative mechanisms (such as EU Energy Performance Certificates) conceal the limited achievements and integration of energy saving, and appear to be related to the dominance of certain designs as a means of generating public acceptance. Re-cognising the role of buildings in compelling the public to save energy implies, according to this analysis of expert narratives, to re-contextualise energy-saving practices and claims, such as those

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<sup>102</sup> This argument was voiced by: Independent architect and PassivHaus proponent, pers. comm. 2014; Senior representative of the Group of Architects at the Service of the Public Administration, pers. comm. 2014; Architect participant in the *Efficient Block #3*, pers. comm. 2015.

echoed in performance certificates. The existence of this critical insight amongst experts supports the claim introduced in Chapter 5 that organisational interests – more than epistemological issues – underlie the limited attention that is paid to commercial buildings as a means of compelling the public to save energy.

In the following sections I show how the context of practice mediates the public acceptance and critique of official energy saving claims, practices, and overall practice as represented in the study buildings.

### **7.3. *Endesa*: invisible efficiency & user engagement**

To a casual observer, the *Endesa* building in Barcelona might appear as an anonymous construction whose energy-saving practices are not exhibited. As opposed to the headquarters of other energy corporations which shape the city skyline (Gas Natural Fenosa, and Aguas de Barcelona), *Endesa* blends in with its neighbouring buildings in terms of height and building materials. Although the building occupies a whole block in the city centre, multiple experts and passers-by were unfamiliar with it and its energy saving credentials. Reliance on efficient technologies contributes to the invisibility of its energy-saving practices. As one expert put it, it is “a well-working efficient building...nothing special!” (Senior representative of the Energy Efficiency Cluster of Catalonia, pers. comm. 2015). As shown in Section 6.1, there is no display of its performance credentials on its façade. However, one of the most visible features on its façade is its colourful glazing, intended to reduce solar radiation and thus cooling needs (Architect involved in *Endesa*, pers. comm. 2014). However, this feature was not referred to by passers-by when asked to identify the saving practices in place, showing public ignorance about the relevance of passive mechanisms of solar protection in Barcelona (thus aligned with claims in Sections 7.1 and 7.2) as well as the inherent invisibility of the energy

efficient practices widely referred to in the literature (Lutzenhiser 2014; Sovacool et al. 2015). It also shows the limited contextual communication of Endesa about its practices (Section 6.1), most particularly the vernacular and highly-replicable practice of shadowing, which is not *mis en valeur*.

### 7.3.1. Radical critique of passers-by

Passer-by respondents claimed ignorance about the building and its energy-saving practices and based their opinions mostly on their knowledge about the company that occupies it. On these grounds a frequent passer-by who lives nearby made some assumptions about the presence of certain saving practices: “Endesa! ...I don’t know much [about the building], but I guess all this glass is to let sunlight in. I guess it’s well insulated, with double glazing” (pers. comm. 2015). Countering these positive assumptions, but also based on knowledge about the company, most of the other respondents denied the presence of energy-saving practices in the building. For instance:

I know it is [from] Endesa...I only know that every year they raise the electricity price...I don’t think they did the building to save [energy], especially since they must have free energy... It doesn’t seem efficient to me. (Frequent passer-by, who lives near *Endesa #3*, pers. comm. 2015)

This shows how previous knowledge about the company tacitly shapes the appraisal of energy-saving practices in the building amongst passers-by who have little knowledge and capacity to perceive these practices.<sup>103</sup>

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<sup>103</sup> The relevance of the social dimensions of the building was also made explicit by some, who reflected on this prior to formulating a negative appraisal: “Taking into account [that the building] is from Endesa, it’s a bit difficult [to know what I think]...The glazing could be more transparent [to save on lighting] and they could switch off the lights. For sure, they have the air-conditioning on at full power. They could have it on at home and pay for it” (Frequent passer-by who studies near *Endesa*, pers. comm. 2015).

The narratives of these respondents quasi-unanimously showed deep mistrust in the interests of Endesa.<sup>104</sup> The latter were understood as being in opposition to the shared goal of saving energy: “they [Endesa] won’t save energy from their own initiative [since] it is better for them that people waste [energy]” (Frequent passer-by, who lives near *Endesa* #3, pers. comm. 2015). Also, as the quote shows, some even understand that the integration of energy-saving practices by organisations would contribute to the reproduction of their practice. (This corresponds with the understanding of some experts, discussed in Section 7.2). However, this explicit recognition of the role of buildings in the reproduction of practice is mostly tacit in other responses, which, however, show recognition of the obscure political function of the building. This needs to be understood before formulating an opinion about the practices being represented in the building: “I don’t know! They have their hidden tricks, they are a monopoly...they are impersonal, unapproachable” (Frequent passer-by who works near *Endesa*). Thus, there appears to be awareness amongst the public about the political function of the building, which for many is intentionally ungraspable. I am aware that the radical critique of the elite mode of production (Section 3.2) tacit in these responses could have been brought to the fore by my questions, since most respondents needed to reflect to answer, showing that they did not seem to have preconceived opinions.<sup>105</sup> This supports a Lefebvrian understanding of the monumental function being concealed from everyday view by the dominance of expert knowledge, as shown in Section 7.1.

The monumental function of the building can be explained by the divide between what people expect from Endesa – and other corporations – and what these are to the former:

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<sup>104</sup> The negative conceptions about Endesa were so deeply grounded that respondents maintained their positions even when I commented on the positive ratings obtained by the building. Responding to this, several respondents expressed – verbally or by making a face – their mistrust towards my research purpose and independence from Endesa.

<sup>105</sup> The absence of such a pre-existing critique was observed during the review of the literature, during which time I did not encounter documented critiques towards the company regarding this building, nor any others.

“They [Endesa] should be the first ones [to save energy, because] they work for everyone to have energy” (Frequent passer-by who lives near *Endesa* #3, pers. comm. 2015). Similarly, “company buildings, especially of companies with loads of resources, should take care about their environmental impact!” (Frequent passer-by who studies near *Endesa*, pers. comm. 2015). These quotes contribute to the argument that the public appraises energy saving practice as burdensome, as discussed in Section 7.1, which provides an opportunity for organisations to self-legitimate by adopting the heroic role of saving energy on behalf of us all. This could have been the original purpose of Endesa when commissioning this building and communicating it as integral part of its practices, as shown in Section 6.1. The depth of some of the critiques presented herein would explain the decision of the organisation to avoid publicizing its practice to avoid attracting scrutiny regarding the need for more transparent, democratic and equitable energy governance in Spain.

It appears, therefore, as if the locally adapted design and the invisibility of energy efficiency seeks to maintain the building outside public commentary. Similar to a Lefebvrian monument (Section 3.3), the function of the building would thus be to divert attention from the overall practice of the company, as some experts also claim (Section 7.2). In Endesa, the *invisibility* of energy efficiency appears as an opportunity to represent accepted values of energy saving, but without attracting scrutiny of the company. This comes at the cost to the company of not being able to highlight its *heroic* efforts, to use the building for fostering public *learning*, ultimately nurturing a public appraisal of the organisation as a *caring* one, as defended in official narratives (Section 6.1). Moreover, in the absence of visible (material) practices and a display of quantitative credentials – such as the Energy Performance Certificate of the building – the attention of passers-by is directed towards the social dimensions of the building. This is problematic for Endesa

because its interests and an obscure political function of the building are acknowledged, at least tacitly, by passers-by. This tacit recognition and the desire of the company to avoid attracting public scrutiny would explain the latter's interest in not publicizing its practices and the credentials of the building as shown in Section 6.1, because critique is better able to address narrative than non-textual representations (Dutton and Mann 1995; Lefebvre 1991). A completely different strategy appears to underlie communication with building users.

### 7.3.2. Engaged and co-responsible users

Endesa users, interviewed in front of the building, made little reference to its exterior. Instead, they tended to focus on aspects of thermal and lighting comfort. In their words, these features are closely related to saving energy “[which is experienced through] energy efficiency, natural light, open spaces, maximization of internal space” (User-worker #2, pers. comm. 2015). This shows that positive features that contribute to user comfort – like space maximisation and natural light – are associated with efficiency, regardless of their greater energy consumption, according to building experts (Section 7.2). Many also highlighted the presence of automation as a component of building efficiency: “Lights have sensors...They stop operating after 8 pm if nobody is in” (User-worker #5, pers. comm. 2015). Automation is therefore experienced as a way of saving energy without jeopardizing comfort. The existence of certain maladjustments that imply reduced comfort was tolerated, given the experiential appraisal of the features of automatism, and of their official recognition that supports a will of the company to save energy:

It has some energy awards... The air-conditioning maybe is not that good [but] they care about it... We have got screens that show the temperature, the humidity. When



your work spot is not in use, the lights are switched off”. (User-worker #4, pers. comm. 2015)

In addition to automation, the above quote shows that communication from the company to the user contributes to positive appraisals of the building in terms of the former’s good intentions and being caring. The same applies to company responsiveness to user needs:

There are still air-conditioning problems. They have not been solved in office buildings. There is no (user) control of cold and heat. You can only inform them, but they fix it immediately. It is best like that” (User-worker #2, pers. comm. 2015).

Moreover, the responsiveness of the company towards users and saving energy is appraised in the proactive provision of training and advice:

[Saving energy] is a co-responsibility workers-company for achieving comfort and saving energy. There is training and advice about how to be efficient and sustainable...[The building] could communicate in a more open way...Maybe by opening up spaces to show how it works...for awareness building...[it would demonstrate that company business] is not only about generating [energy], but also how it’s used. This is a shared responsibility of the administration, Endesa, and the consumer. Need communication!” (User-worker #1, pers. comm. 2015)

Positive opinions about the building as saving energy therefore appear to be related to appraisals of elements of automation, but also to the appraisal of the company as transparent, responsive and overall caring about the comfort of users and fostering learning.<sup>106</sup> The appraisal of energy saving practice as a “shared responsibility” to which

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<sup>106</sup> Supporting claims about the importance of internal communication, training and awareness-building messages for the optimistic appraisal of building amongst the company workers, a less optimistic opinion

the company shows its commitment to users constitutes therefore a source of legitimacy, as defined by Suchman (1995). This commitment appears to contradict – as the latter quote shows – with the interest of the company in communicating its achievements in the building to the general public, resulting in frustrated expectations from users.

The political relevance of the company building was formulated by some respondents that overtly argued that the function of energy saving exemplars is precisely to improve the public image of organisations: “savings should compensate investment, [since] it’s everyone’s money, not for the corporate image” (User-worker #4, pers. comm. 2015). However, as shown in previous paragraphs, the company claims were widely accepted. Moreover, the existing contradiction between the caring attitude of the company exhibited in front of building worker-users and the limited communication to other publics, was only indicated by some users, who merely pointed at it as a domain for further improvement. Their experience with the building and with the company appeared to be related to the limited depth of their critique about the political utilization of the building. This contrasts with the critique formulated by passers-by who see in the building an obscure mechanism of manipulation that reflects the interests of an “unapproachable” company.

It appears, therefore, that *Endesa* operates as a Lefebvrian monument by enabling the company to claim its commitment without having to explain this to the public, thus exposing itself to critique about the contradictions between its narrative claims and its vested interests in reproducing the current practice of energy consumption. A

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was voiced by a user external of the company: “At home, if you had the lights on in front of the window [looks up], you would switch them off immediately. Here [in *Endesa*] no one knows where the switch is” (User working at *Endesa* – external expert – pers. comm. 2015).

communication strategy addressed to the general public about the company's commitment to integrating replicable practices of energy efficiency in *Endesa* and its other buildings (Section 6.1) would potentially attract public attention and critique but could also contribute to re-politicising energy consumption. A caring framing of integration, as the one directing the company relation with the building user-workers, would imply recognising the co-responsibility of all actors in saving energy, since it is the public demand for energy that requires companies like Endesa to become involved in environmentally problematic practices of generation. However, this would not resolve the questionable interests of company shareholders and their obscure influence on Spanish politics, which, in the eyes of passers-by and expert public critiques, appears to be a fundamental reason for limited public exposure. This constitutes a missed opportunity for the building to function as a learning instrument, which would potentially improve not just how the general public appraises the practices of Endesa, but how the latter relates to the public.

#### **7.4. *Fabrica del Sol*: visible renewables in an educational building**

*Fabrica del Sol* stands out in its surrounding space for being a Modernist building with a photovoltaic panel on its façade and solar thermal panels on its rooftop. During the field research the building was devoid of an energy monitoring display. Available information on the Council website about the educational activities and exhibition in the building contrasted with the absence of signposting in the exterior of the building about its energy saving credentials and practices.<sup>107</sup>

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<sup>107</sup> Historic buildings like this are not required to obtain EU Energy Performance Certificates.

### 7.4.1. Passer-by demand for integration

Multiple passers-by found the solar panels of *Fabrica del Sol* to be a feature they could recognise as having an “experimental”, “innovative”, “demonstrative”, “pilot” and “educative” function as part of a positive assessment of the building which shared recognition of its singular and innovative character. Accordingly, energy-saving practices were appraised as a curiosity which was not necessarily understood, and as an expression of a potential – not actual – practice (pers. comms. 2015). In the absence of narrative claims or quantitative display of its performance, multiple passers-by expressed their doubt about the building: “It’s great, but I hope at least this [solar panel] works, not like the Forum’s which I think is not even connected to the grid” (First time passer-by, pers. comm. 2015). References to the Solar Pergola of the Forum were common amongst passers-by in support of their sceptical claims concerning the building, similar to those empirically reviewed in Section 2.9, about the risk of vocal claims generating mistrust amongst the public. Such is the case of highly publicized projects characterized by their singularity and limited communication that contextualises their energy-saving practices. This mistrust can be further justified by the absence of information about building performance, which, as explained in Section 6.2, responds to an understanding that a “horror story” about the building’s performance would not be educational – nor, obviously, contribute to positive citizen appraisal of the Council.

Reticent opinions about the building formulated by passers-by were also grounded on the latter’s experience with the council practices in other buildings, as well as in public transportation, which were appraised as contradicting the deployment of renewable technologies and the commitment to save energy in *Fabrica del Sol*. After formulating a positive opinion about the building, a respondent counter-argued that:

...[s]ocial security offices are too hot in winter, whilst windows are open; lights are on in civic centres, whilst there is lots of natural light ... the cooling in the metro and on buses is excessive in summer. (First time user #2, pers. comm. 2015)

The limited policy integration of energy saving practice was also referred to by passers-by to question the solar generation activities of *Fabrica del Sol* and its overall energy saving credentials. The policies referred to include the Council's Solar Thermal Regulation, which many considered a technical and economic burden on residential condominiums, and Spanish government policies such as the "Solar Ban" (described in Section 5.2), or energy pricing as contradicting the message of *Fabrica del Sol*. "Look at the fixed part of the bill! Even if you save [energy], you end up paying the same!" (First time user #2, pers. comm. 2015).

In line with the material which has been presented until now, the appraisal of energy-saving practices in relation to *Fabrica del Sol* is comprised of two parts: a positive, perceptual appraisal about the visible and innovative technologies the building deploys; and a critique based on mistrust of singular exemplars that are vocally publicized but which are not *representative* of the Council's practice, and are hence tacitly appraised as intending to mislead public opinion. Mistrust of these practices could be justified by their arguable capacity and role in producing appropriate practice. As claimed by a local sustainability transition expert and activist during a phone interview in 2015, "*Fabrica del Sol* is important, but the solution is not that Barcelona becomes a collection of *Fabricas [del Sol]*", meaning that singular exemplars that demonstrate innovative technologies will not suffice to "transition" (in his wording) to a practice of energy saving. When engaged in this debate about singular exemplars and technologies, passers-by did not mention the apparently praiseworthy policies involving integrating energy-saving practices into Council buildings. Passer-by appraisal of *Fabrica del Sol* reflects the insufficient

contextual communication promoted by Council policies (Section 5.3), which appears to overly rely on innovative singular exemplars as a means of *representing* a likeable but always forthcoming *practice* of the Council – but not a current and replicable practice.

#### 7.4.2. “Overrating” by laymen and critique by energy-aware users

Staff and visitors at *Fabrica del Sol* were expected to be more aware than average about the importance of saving energy. I had been warned about this by a Council official for the building (pers. comm. 2015). The words of the former showed agreement with the idea of the importance of saving energy, as expressed in claims such as “...everybody has to go in this direction” (User and environmental educator, pers. comm. 2015). During interviews conducted at their workplaces, user responses about their experience with the building practices referred positively to user engagement: “We users are aware... [for example] we switch off lights when we leave. I’d give it an eight [from ten], because being an old building, there are insufficiencies” (User and environmental educator, pers. comm. 2015). Some respondents appeared to overstate the building’s self-sufficiency: “Working at La Fabrica is of added value. Half of the energy comes from the solar panels” (User working at the 3D Printing Space of *Fabrica del Sol* #2, pers. comm. 2015). Some interviewees overlooked the space and thermal limitations of the first floor whilst appealing to “the positive psychological effect of working in a sustainable space” (User working at *Fabrica del Sol* for a subletting organisation #1, pers. comm. 2015). Others also overstated the replicability of practices whilst recognising as the practice of energy saving action that requires technical skills: “the building shows that [saving energy] is viable. It all depends on will. This requires technical support [from the administration]” (User working at *Fabrica del Sol* for subletting organisation #2, pers. comm. 2015). As in the case of *Endesa*,

it appears that staff-user engagement with energy management involves more positive appraisals than those of passers-by and expert publics.

The narratives of users reflect an understanding of energy saving practice as the co-responsibility of government, corporations and citizens: “I would not make any difference [between types of actors], everyone has to go this way” (First time user #1, pers. comm. 2015), implying the expectation that organisations integrate energy saving into their practice and *care* in the same way that the public is expected to. As with the case of *Endesa*, some users indicated the contradictory nature of the limited integration of the practices in the building into other government buildings: “It is a referent, as all public buildings should be. If it can be done in an old building, why not in all of them?” (User working at the 3D Printing Space #2, pers. comm. 2015). After indicating this contradiction, this user continued to proclaim the positive qualities of the building: “The *Fabrica* is not a façade, but a real compromise...about more responsible consumption”, showing that technological innovation and singular exemplars can operate as Lefebvrian monuments in producing an illusory consistency of practice. This contradiction was explicitly raised as a problem by an official engaged in education: “There is need for heating and lighting control in government buildings – you often need to wear a t-shirt [in winter]!” (User and environmental educator, pers. comm. 2015). Although not an expert in energy-saving technologies, the job of this respondent is to convey official advice to the public about the need to care about the environment and to save energy. Thus, it is possible that more than re-appraising the limited integration of practices in council buildings, this critique refers to the contradictions between the practice of the council and its narrative exhortations to the public – problematized as a sign of “hypocrisy” by Jackson (2009, 11).

Thus, aligned with the voice of building expert publics (as presented in Section 7.2) and renewable experts who participate in *Fabrica del Sol* (Section 6.2) it appears that

knowledge about the possible practices of energy saving relates to a critique of innovative and singular representations. In contrast, laymen users working in *Fabrica del Sol* appear to be satisfied by the degree of comfort provided by what they believe is a self-sufficient building, thereby reproducing Council narratives and ignorance about the fact that self-sufficiency is a goal and an indicator of the degree that a building saves fossil energy – not an achievement of the building. Accordingly, self-proclaimed energy-aware users naïvely reproduce the official hero story, disregarding the contradictions that underlie the less appealing success of the building (partially explaining limited communication about it, as shown in Section 6.2),<sup>108</sup> and the limited efforts of the council to integrate and contextualise practices in attempts to foster the (re)production of an appropriate practice.

What appears most problematic for passers-by and users at *Fabrica del Sol* is the limited integration of energy-saving practices in Council buildings. Although some users seem to be sold by the official hero story of the Council – to the extent of confusing self-sufficiency goals with accomplishments in *Fabrica del Sol* – most respondents referred to their experiential knowledge to express their disregard of innovative and singular exemplars. In the case of passers-by, this appeared to be related to mistrust of vocal claims (Bowen and Aragon-Correa 2014; Greenberg 2014). Experts, however, like passers-by of *Fabrica del Sol* and also *Endesa*, tended to problematize the need for replicable practices of behaviour and management which should be integrated into the building, but also into all Council buildings to attain credibility and foster the (re)production of a practice of saving energy. The failure of the Council to contextualise and often to transparently communicate the performance of its exemplars, as is the case with *Fabrica del Sol*, further justifies public

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<sup>108</sup> Similar to what Janda and Topouzi call a “horror story” (2015).



mistrust that the act of interviewing could have made explicit, hence contributing to a re-appraisal of practice as produced in space.

## **7.5. *Media-ICT*: a smart façade**

### **7.5.1. Acceptance and optimism regarding the EFTE façade**

As with the cases presented earlier, passers-by of *Media-ICT* often expressed their ignorance about the building and the energy-saving practices that are in place when responding to my first two questions. Positive opinions about the building's relationship with saving energy were based upon its singularity, aesthetics, and design:

It aims to be singular, to stand out. It gives me a good impression, it is beautiful.

The construction is elaborate! (Passer-by who works nearby #3, pers. comm. 2015)

In this quote, as in the narratives of other publics (mostly passers-by), a positive appraisal of the building for saving energy appears grounded on an assumption that efforts put into the building need to necessarily – at least in these domains – respond to consensual values about energy saving. To this contributes an uncritical acceptance of energy efficiency credentials and innovative designs, as discussed in Section 2.5:

The design is fine, I like it. Very singular, ground-breaking. I think it won some award for its energy efficiency. I don't know if these bubbles collect energy, I only know it won several awards.... I guess it makes the most of natural light, and that's why it has this shape. (User-worker #4, pers. comm. 2015)

Such acceptance is aligned with the expert concerns presented in Section 7.2. It shows that the official framing of energy saving through innovative practices and singular exemplars is aligned with public acceptance of energy saving values, although it is not clear whether it contributes to fostering them. It appears to fail to educate the public about in which areas

they may save energy. As in the case of *Endesa*, passers-by show ignorance about the fact that the mechanical cooling of commercial buildings – that overheat due to excessive solar radiation in predominant designs – is more energy intensive than illuminating them. This is relevant because a rationale of protecting the building from solar radiation was argued to support the choice of the two building façades (see Sections 6.1 and 6.3).

Passer-by acceptance appears problematic in terms of its lack of criticism and reproduction of official narratives: “it is an eco-building, but I don’t know exactly...I was told” (Passer-by who works nearby #2, pers. comm. 2015). In words of a frequent passer-by (#1):

Are those [referring to the EFTE bubbles] solar panels? I see tourists taking photos when I pass by (pers. comm. 2015).

The assumption here is that, since the building attracts interest, it must also save energy, and hence generate energy. It appears, thus, that official representations foster an overly positive – illusory – appraisal of the building, particularly since there is no official communication that refutes the beliefs or clarifies doubts about the EFTE façade, even though these are common amongst passers-by. Saving energy has become in the public imaginary the act of deploying technologies, mostly renewables – not reducing consumption. There is therefore the risk that passers-by assume and overestimate the energy saving achievements of the building based on its innovative design and related credentials.

Countering the perception of laymen presented so far, whilst supporting the overall argument, multiple experts asked about *Media-ICT* referred to its design and energy saving

claims with reticence. Several referred to it as part of a “marketing” strategy <sup>109</sup> whose success would therefore explain the positive perception by laymen publics. They acknowledged that the innovation in buildings like “...*Media-ICT* is important because it attracts [public] attention towards energy efficiency” (Architect participant in the *Efficient Block #4*, pers. comm. 2015). However, the continuing words of this respondent – “I don’t want to be anti-technology, but was that façade really necessary?” – show the existence of concern about the reduction of energy saving practice to the deployment of technologies. Moreover, the replicability of these technologies has not become apparent to experts, who echo the official council framing of innovation: “At least its solar protection is innovative, I don’t know if it’s efficient, or replicable” (Architect participant in the *Efficient Block #1*, pers. comm. 2015). Replicability appears as one dimension that is insufficiently addressed from the perspective of these experts, who, however, acknowledge the role of *Media-ICT* in attracting attention to the need for transforming practice: “...what we need is pedagogy, being very theatrical. This is hyper-theatrical” (Architect participant in the *Efficient Block #3*, pers. comm. 2015). The risk appears that these theatrical representations are perceived by the public as intentionally deceptive – as “all smoke and mirrors” (Architect involved in *Fabrica del Sol*, pers. comm. 2014). This would explain public mistrust in the practices enacted by elites and their disinterest in reproducing them and, hence, the “action gap” (Blake 1999) between the public acceptance of energy saving values and the adoption of related practices.

However, in the case of the *Media-ICT*, passers-by appear to accept the innovative practices deployed by the Council, and hence its leadership as regards saving energy

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<sup>109</sup> The experts who voiced this opinion included: Architect involved in *Fabrica del Sol*, pers. comm. 2014; Architect Participant in the *Efficient Block #4* pers. comm. 2015; Architect at a commercial building supplier company, pers. comm. 2015; Senior engineer involved in design of *Media-ICT* and *Endesa*, pers. comm. 2015.

through these *theatrical* representations. Accepting their sufficiency thus serves to justify the alienation of a public which, being energy-aware, is also energy-addicted, as argued by Healy (2014). This is supported by the response of passers-by to my questions about the need for integrating similar practices into other buildings. At this stage, what had seemed like positive acceptance turned into refusal. Supporting the arguments introduced in Section 7.1, these actors considered that the energy-saving practices represented in *Media-ICT* would be a burden on tax-payers and dwellers. Accordingly, the role expected from the government is a heroic one: “[Government buildings] should spearhead [lead by example], private ones should fulfil the standard” (Passer-by who works nearby #1, pers. comm. 2015). These perceptions of passers-by counter the expectations of the designer that *Media-ICT* can normalize energy-saving practices and demonstrate that energy-saving buildings can be cheap (Section 6.3).<sup>110</sup> On the contrary, supporting expert concerns about over-reliance on innovation and singular – *theatrical* – exemplars, it appears that *Media-ICT* has a counterproductive effect on attempts to normalize energy-saving practices and engage the public, since these practices are perceived as a costly technological burden.

Further supporting the argument of Healy that the public seek justification for maintaining current levels of energy consumption (2014), some argue that “government and corporate buildings, especially those of energy companies, should use renewables to the max. It is a matter of corporate social responsibility!” (pers. comm. 2015). This focus on organisations, and especially energy corporations, could respond to a climate of public anger in Spain towards elites, as described in Section 5.2. These sorts of narratives are problematic for not considering that the costs incurred by organisations will eventually trickle down in the form of taxes, energy bills and market prices. By taking on what is

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<sup>110</sup> As the specialized media echoed, “Buildings like this are important because they demonstrate that it is possible to do sustainable architecture at a market price. This is the best way to change people's mindset” (Polo 2010).

appraised as a burden to society, organisations would be redeemed. Buildings such as *Media-ICT* serve thus to legitimate organisations by framing the practice of saving energy as part of their heroic efforts. This legitimacy appears related to the limited attempts to politicise energy saving in appeals to the public. The hero framing of innovation and singular buildings appears as a populist instrument which counters the common good – i.e. the reproduction of a practice of saving energy.

### 7.5.2. User discomfort and incredulity

In comparison to passers-by, users appeared to be more reticent in relation to believing in the performance of the building:<sup>111</sup>

It is visually attractive. I hope that the aesthetics have some function too...but I don't know....I know it is thought to be efficient, but I don't know. [*How does this reflect on the building?*] I wonder this too! (Frequent user #1, pers. comm. 2015)

The quote shows that building users are not sufficiently informed about the extent and way the building saves energy, creating mistrust. In addition to such limited information, critiques were often grounded on concerns about limited responsiveness to user needs, such as in the case of interior overheating: “[Some users] wanted to put screens on windows, but the architect did not allow this” (User, receptionist #3, pers. comm. 2015). This case was widely cited by users as an example of the priority granted to design over use. It aligns

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<sup>111</sup> Exceptionally, some users working for the Council expressed their full satisfaction with the building. A receptionist at Barcelona Activa on the first floor stated that: “[i]t is new, very beautiful, full of light, the spaces are wide, with views to the street...Lights get switched off [automatically] when leaving the room. The computer rooms are in energy saving mode” (pers. comm. 2015). These words seemed to uncritically reproduce the official narrative about building design and automation being ends (not means), possibly due to the employment of this user at a Council reception desk. A different narrative emerged when, reflecting on her actual experience, this very respondent also acknowledged that the air-conditioning and lighting automation were overridden to suit user needs, hence acknowledging that their operation was not satisfactory in terms of comfort, and that the building credentials based on the full operation of the system did not correspond to actual consumption. I also experienced that, as a result of the manual operation of heating, cooling and lighting systems, multiple empty rooms and complete floors were illuminated and felt too cold in summer.

with the critical reviews of the City governance presented in Section 5.3. This limited responsiveness thus appears to be related to limitations on comfort, which many find inadmissible. Such was the case of a former user who, during an interview in *Fabrica del Sol*, was enduring far from ideal working conditions: “the user has become an appendix of the smart building” (pers. comm. 2015), thus showing the importance of user engagement and organisational responsiveness towards their needs. In addition to this, there are expectations about the building due to its special design and in relation to claims about its “smart” nature which contrast with the situation as related by users:

It contains good ideas, but its design is not well optimized for saving energy ... it lacks some external curtains in the south side to block the sun. We have the lights on the whole day. The air-conditioning works badly...it's not intelligent. The [EFTE] panels...don't insulate enough: right now the air-conditioning is working at full power. *The design should be more passive. Maybe they [designers and owners] are more worried about design...If people believe this [their claims], then fine, but users suffer here.* It is necessary to preach by example. This is done through appearances, it's not true. (User-worker #4, pers. comm. 2015, my emphasis)

Contradictions between expectations and user experiences relate to a critique about limited efforts to go beyond “appearance” and to account for the social dimension of practice.

A radical critique was also formulated by the publics whose background and interest in the building originated from some awareness about the function of buildings. A member of a consumer cooperative referred to her experience of visiting *Media-ICT* like this: “At first I thought it was amazing...after visiting it, I realized it was all a pantomime!” (pers. comm. 2015).<sup>112</sup> These words imply an understanding that failure is inbuilt into the

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<sup>112</sup>Refers to a neighbour of *Fabrica del Sol*, member of a civil organization #2.

theatrical representation, as per its function. As a “pantomime”, more than granting credibility to the practice of saving energy, what the building does is to disillusion those that experience its limitations. To counter this type of negative appraisals, a tourist visiting the building as part of an architectural tour, argued for increased communication that allows public scrutiny on the practices of organisations:

The building should be explained, so people understand these new systems...because they [governments] spend lots of money and people need to know...their cost, and their rationale. (pers. comm. 2015)

According to this perspective, increased communication would enable the passer-by public to understand energy-saving practices as not necessarily costly and technological – e.g. that the function of the intelligent EFTE façade is the same as manually-operated curtains and blinds. Increased communication, however, would counter the designer’s conception of the building as “empathetic”; i.e. not requiring further explanation for the public to understand energy saving practice as normal (Section 6.3). It would dispel the illusory consensus surrounding innovative designs and technologies, particularly relevant amongst laymen publics, which from a Lefebvrian perspective require the absence of narratives as a means of legitimating the practice being represented and its proponents.

Thus, the positive perception of *Media-ICT* and its energy-saving practices amongst laymen passers-by shows the relative success of a hero framing of innovation that generates technological optimism, and the illusion that energy savings are attained. Optimistic perceptions become possible in the absence of a contextual explanation of the building which is not appraised as part of the Council’s goal of saving energy, revealing a de-politicising effect. Such illusory optimism is dispelled when users experience the

limitations on the comfort in the building, and the prevalence of design over use and saving energy. It is also dispelled when passers-by understand the practices being represented as not replicable. In perceiving the *Media-ICT*, the meaning of energy saving gets reduced to the exceptional deployment of costly practices. These alienate the public and furthermore contribute to a perception of related government practices as overspending.

In sight of the public appraisal of the building, official representations appear to have missed an opportunity to publicize the function of the building amongst laymen publics. In particular, there appears to be insufficient understanding amongst these publics about the low cost of the building – as claimed by the designers (Section 6.3), and the replicability of the practices in it deployed.<sup>113</sup> Such a reframing would show that the Council cares about the public reproducing its practices and that user comfort is part of energy saving practice, resulting in greater acceptance, as in the case of the *Endesa*. This reframing of the building would transform the ways the public and the Council relate to each other, making the latter accountable and producing social relations that are appropriate to energy saving – and productivity – goals being officially claimed (Section 6.3). However, reframing practice as caring and learning would imply dispelling the hero framing of innovation about *Media-ICT* by recognising the limitations of the technologies that are in place – i.e., what Janda and Topouzi refer to as a “horror story” (2015).

## 7.6. The *Efficient Block*: the social limits to practice

Because the *Efficient Block* project combines commercial and residential buildings and because of its preliminary stage – competition of ideas – at the time of field research, it is a peculiar case. There were no signs in front of the *Block* describing the project to passers-

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<sup>113</sup> The building could foster learning amongst the public – for instance, about the relevance of limiting solar radiation on the south façade, or controlling thermostats and lights to avoid wasteful energy use. These practices can be implemented using hi-tech systems, but also in vernacular ways – using curtains – and through behavioural modification – adjusting thermostats, switching lights off when not in use, etc.



by, hence I focused on the narratives of users. Since during my enquiry I realised that only inhabitants had been invited to participate, I focused on the narratives of these actors, along with the experts who participated with their proposals in the competition of ideas. Inhabitant contributions in a workshop that was organized “to convince” – in the words of several interviewees – them to participate were particularly informative, especially when compared to interviews previously conducted outside homes, when inhabitants expressed their expectations about receiving clarification from organizers at the workshop. The workshop took place in the Secretaria de Joventut, situated near to the *Block* on 25 May, 2015. Inhabitant narratives during the workshop can be analysed according to two main framings: a) those that reproduced the Council reliance on landmark projects and innovative technology, and b) those that called into question government leadership.

a) In reproducing the Council reliance on technological innovation, some dwellers defended projects that proposed innovative designs and technologies. Workshop Participant #6 said: “We liked the idea of connecting communities with gangways and rooftop photovoltaic panels; it would give a unique stamp to the Block, and make extra savings”. These participants also reproduced the Council’s desire to attract international attention, as made explicit in its policy narratives (reviewed in Section 5.3.1). Aligned with this position, Participant #5 vehemently proclaimed that...

The project should be more ambitious, like other projects that have made Barcelona a worldwide referent... We are lucky to be offered the chance to participate in an experiment, [called on] to become a referent, and that brings me lots of excitement... [Otherwise] it will be just another renovation... To be an *Efficient Block* we need to take full, plethoric, [and] ambitious action, with support from private companies, like we did during the [organisation of the] Olympic Games [of 1992].

These narratives show a blind acceptance of the Council policies and practices. The leadership of the Council and of Barcelona, in deploying innovative energy-saving practices in landmark buildings is appraised as a source of international admiration. Acknowledging the heroic role of the Council, of other administrations, and of corporations, the inhabitants of the *Block* feel proud “to be offered” a chance to engage and to produce a most acclaimed exemplar. In these narratives, heroic practices are understood as visually attractive, and not as potentially compelling others to follow. Accordingly, they did not include references to real-world issues such as the Solar Ban, which at the time of my research countered the cost-effectiveness of in-house solar generation. Reproducing the Council representations presented in Section 5.3, these inhabitants disregarded issues of replicability. For them, innovative technologies and singular exemplars are fundamental to raise public awareness and to co-produce a practice of energy saving.

b) Responding to these interventions, other workshop participants protested about the excessive focus on vain aspects of visual design and defended more replicable practices requiring user commitment. Participant #7, who introduced himself as a member of a renewable energy consumption cooperative (Som Energia), complained that...

[T]hose gangways on the rooftop are the expression of ‘let’s be cool’ but *Can we sell the energy?* I don’t know! Regulations have changed [in reference to the Solar Ban]...It is nice that they [the organizers] pay for half of this...but let’s start at home, only then we should go to the roof and install photovoltaic panels.

Similarly, Workshop Participant #8, an inhabitant with a background in energy conservation projects commented that “it is not necessary to innovate; maybe it is better to install less air-conditioning, instead of photovoltaic panels”. These critiques show disagreement with the priority granted to “design” over “use” in Council policies, as

described in Section 5.3.1, as well as with the project goals whereby innovation plays a role in publicizing the project with a view to contributing to the replication of residential building energy renovation. The former opinions show that energy-aware publics disagree with the official practice of the Council – which they find overly reliant on visual, singular and innovative representations – and seek to reclaim a citizen practice.

Contributing to this alternative understanding of energy saving practice, and of the purpose of the *Efficient Block*, some dwellers argued that an energy renovation needs to meet user needs. Workshop Participant #9 brought up the relationship between efficiency and comfort: “I don’t want to pay more, but I will vote, and live better... We need financing. I don’t want to get anything for free... It’s not the administration who should give me this”. The relevance of user comfort was highlighted also by an administrator of two *Efficient Block* condominiums, who commented that “noise disturbances are more important for many dwellers than energy costs... [but] the organizers have not mentioned that ... for instance, that efficient windows also reduce noise!” (pers. comm. 2015). As summarized by the president of a condominium in a follow up phone call after the workshop: “during the workshop we realised that renovating residential buildings is quite a thing, [and renovating] a whole block is truly complicated!”, implying that the organizers had overlooked this complexity. Thus, it appears that inhabitants, like users in *Endesa* and *Media-ICT*, make meaning of energy saving in the context of building use and comfort. The failure of organizers to address this context appears to have widened the gap between their understanding of energy saving practice and that of the public. The official framing of innovation failed to match up to the more complex needs of users.

Other critical voices also confronted the project by focusing on the context of the policies and practices of government actors, which for them defined the context of the *Efficient Block*. Several workshop participants raised questions about the evanescence of

subventions and the limited communication about them, and the incoherence of energy saving policies – often returning to the example of the Solar Ban. Referring specifically to the project, several inhabitants, such as workshop participants #9 and #13, wondered how the project could address underlying problems of cohabitation caused by the different tenancies, since there are rented buildings in which owners have limited (economic) interest in renovation. There were also complaints about limited transparency and coordination with inhabitants. For instance, Participant #11 protested that:

[In our building] we thermally insulated the dividing wall, just before learning that the building next door, the Maternitat [the Council's Residencia Municipal Francesc Layret] was starting renovation. We could have avoided this work!  
(Workshop participant, Barcelona 25 May, 2015)<sup>114</sup>

These narratives show that the public makes meaning of the *Efficient Block* and the practices of renovation related based upon the practices of government agencies and the organizers. The latter might be expected to care about the residential publics' expectations of comfort, to incorporate their voice at all stages of the project, and overall to show a commitment to helping the public to save energy not only through the project but through their overall policies and practices, which were found to be inconsistent. Accordingly, project expectations of inhabitants as well as policy exhortations to the general public to save energy are appraised as too demanding ("hypocritical": Jackson 2009, 11), and as not responding to their needs.

Contradictions between government policy and practice – from the organizers and from the central government – along with inhabitants' appraisal of project participation as

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<sup>114</sup> Some participants also referred privately to the difficult relationship with the Catalan Housing Agency, which, according to some, would have appropriated space from common areas of the block (e.g. User who works and lives in the *Efficient Block*, pers. comm. 2015).

obscure, unequal and unfair appear to be the source of the limited credibility granted to the *Efficient Block* and the limited interest in it from its inhabitants. This argument resonates with those of reviewers of renewable energy infrastructure acceptance presented in Section 2.9 (Walker et al. 2010; Devine-Wright and Devine-Wright 2009; Batel et al. 2016; Devine-Wright et al. 2010; Greenberg 2014). It supports my claims about the need to transform social relations for a practice of energy saving to be (re)produced. Although the political roots of the problem are mostly tacit in these critiques, they appear to be fundamental to understanding the difficulties of the organizers in obtaining a quorum for choosing a project, and ultimately, in public engagement for conducting the renovation of the *Block*. The participation process, after the selection of winning projects, vanished from the media, hence diverting attention from its failure to engage the inhabitants.

A more explicitly radical critique was formulated by experts who participated in the project competition. Participating expert #4, who had experience with participatory residential building renovation, erupted thus:

They [the organizers] have no idea about participation! They think that if they allow contribution, they are letting people participate...The project should start with a more transparent process....If they [the government actors] don't participate... it goes against the project...! How can you ask inhabitants to get involved if the government doesn't?! ...We need a more global understanding... in terms of self-sufficiency, self-management...to empower inhabitants to take decisions in their environment, to have a more critical view. (pers. comm. 2015)

From this perspective there is a need for a greater degree of participation that comes with a desire to understand user needs and transform the ways in which decisions are taken. Furthering this argument, Participant expert #2 considered that the absence of government

buildings in the *Project* responded to the way the government relates to the public, and jeopardizes the credibility and replicability of the *Efficient Block*:

The [Catalan Housing Agency] building is out of the project? Come on! ... This can be replicable only if... people believe in it!... It is absurd, and responds to the mentality of this country: ‘let them invent, we take the credit!’ (pers. comm. 2015)

These quotes also show the understanding that the Council and the Catalan Government dismissed the possibility of creating new collaborative relations with inhabitants because there was no capacity to promote genuine participation, and because the organisation was not interested in producing new practice, but rather in the credit that could result from innovative practices. In this, the project would have deviated from its goal of creating new normative and institutional capacities, as described in Section 6.4, which in the case that they had been developed would not have been as inclusive as required to engage the public in the (re)production of a practice of energy saving. This would have contributed to transforming the social relations which, for practice theorists embed, energy use (Shove 2010; Shove and Walker 2010, 2014; Wilhite 2013).

As reviewed, the *Efficient Block* failed to engage multiple inhabitants, which made meaning of the project in the context of the organisations’ practices and of energy use, explaining the hardships endured by organizers in attaining a quorum amongst inhabitants in relation to support for project proposals. Although some inhabitants reproduced the Council framing of energy saving in innovation and singular exemplars, a wide array of inhabitants and participating experts realized the insufficient commitment of government organizers to transforming the ways they relate to the public and to overcoming the limited consistency with energy saving policy. The focus on residential buildings and the exclusion

of commercial ones, especially those of government agencies, reproduces the dominant framing whereby citizens are blamed for the limited extent to which they engage with efficient practices, as claimed by Lutzenhiser (2014) and Moezzi and Janda (2014). Reacting to this, inhabitants demanded more accountability and transparency from organizers and a commitment that the project would be adjusted to user needs, re-cognising the need for public empowerment for an appropriate practice to be produced. By not participating on equal terms with inhabitants, the organizing government agencies missed an opportunity to appease public claims to increase the consistency of official representations. For critical participants, a practice of saving energy needs to respond to and transform everyday needs and routines, as well as the relations between inhabitants and between inhabitants and the administration, overall reproducing the framings, meanings and relations that are appropriate to saving energy.

## 7.7. Chapter summary

This chapter has reviewed a wide array of narratives related to public appraisals of the official practice of energy saving as represented in commercial buildings. In this section I summarize the main findings and discuss their relevance for scholarly debates, policy-making and constructive critique designed to contribute to the production of an appropriate practice.

a) There is a widespread consensus surrounding expert conceptualisations, as I have shown in Section 7.1. A general preference for “efficient”, “smart” and “renewable” technology deployment over “saving energy”, and a general disregard for vernacular and behaviour practices shows the existence of a what Lefebvre calls a “banal consensus” (1991, 6). With the notable exception of some experts who question dominant designs and the widespread use of automation in commercial buildings, the limited attention paid in

official representations to behaviour and vernacular practices was marginally criticized by laymen publics, many of whom self-represented as energy-aware. Whether accepting or critical of official practice, public narratives tend to reproduce the official conceptualisations of energy saving as a technological problem.

b) The everyday experience of experts (Section 7.2) with the priorities and interests of commissioning organisations in decontextualising practices – hence emptying them of meaning – offer suggestive evidence that supports a radical critique of commercial buildings. In this, a legitimating function prevails over official commitments to producing an appropriate practice and compelling the public to replicate it. Section 7.2 also shows the potential for engaging experts as publics when these make meaning of energy saving practice based on their own everyday experience. This aligns with the novel relevance granted to experts in applied research as mediating the reproduction of practices (e.g. Shove and Walker 2010; Janda and Parag 2013) and counters Lefebvre’s understanding of experts as unaware of the “ideological project” they serve (1991, 338).

c) Laymen publics make meaning from energy saving practice in a context of practice. The appraisal of contradictions in the practice of commissioning organisations – as shown in Sections 7.3-7.6 – relates to: i) the limited material integration of energy-saving practices in the buildings of the organisation – as indicated in relation to *Fabrica del Sol* and the *Efficient Block*; and ii) the contradiction between the energy saving claims about the building and the *social* domain of practice – including the vested interests as referred to by *Endesa* passers-by, the limited attention paid to user needs and inclusion in the *Efficient Block*, and *Media-ICT*.<sup>115</sup> This critique implies that, in the view of the public, what matters for organisations is to pretend that they are abiding by socially accepted

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<sup>115</sup> Connecting the two earlier points, the consistency of energy saving policies was also problematic for laymen publics of the *Efficient Block* and *Fabrica del Sol*.



values to attain legitimacy. It appears therefore, that a consistent practice is needed before the public will accept and reproduce official practices. This finding is aligned with empirically-based reviews of corporate responsibility and transition governance about the gap between official narratives and action (Bowen and Aragon-Correa 2014; see also Lyon and Maxwell 2011; Jackson 2006, 2009), furthermore clarifying the need to incorporate the inconsistencies in the material and social domains that potentially counter public engagement. This claim is coherent with increasing recognition of the social capital of organisations and the quality of public engagement in studies of renewable infrastructure acceptance (Walker et al. 2010; Devine-Wright and Devine-Wright 2009; Batel et al. 2016; Devine-Wright et al. 2010; Greenberg 2014). The necessary consistency of practice required for the reproduction of energy-saving practices appears as a potential contribution to formulating “caring stories”, as proposed by Janda and Topouzi (2015). These types of stories may have the potential to compel the public to save energy, but are the least clearly formulated by the authors. Their formulation could benefit from re-cognising the context of practice as the site of meaning making.

d) The appraisal of contradictions and the resulting critiques were less salient amongst laymen publics which – as also shown in Sections 7.3-7.6 – were i) visually exposed to the most spectacular representations under analysis – as in the case of *Media-ICT* passers-by, some inhabitants of the *Efficient Block*, and multiple users, and the laymen public of *Fabrica del Sol*; and ii) those invited to participate in the building energy management – as was the case of the users of *Fabrica del Sol* and *Endesa*. The latter two reproduced official narratives about building exemplarity, acknowledging and – at least in *Fabrica del Sol* – overestimating the performance of the building.<sup>116</sup> These users criticized

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<sup>116</sup> Users in *Fabrica del Sol* appears to be exposed to both aspects, i.e. to technologies that are visual and innovative, and to the participatory management of the building. These appear to be related to overestimations

the limited communication about the buildings' performance to the public which contradicted the official intent of fostering learning amongst the public. However, they did not formulate a radical critique (as with the case of other publics) about Endesa not being interested in saving energy or wanting to attract attention towards its practices.<sup>117</sup> It appears therefore that, according to the theoretical framework proposed, the representation of energy saving practice as reduced to technical improvements, singular exemplars and social representations of participation contributed to concealing the contradictions of practice. Ultimately, this contributed to producing the illusion that an appropriate practice was in place, countering the everyday production of an appropriate practice, as argued by Lefebvre (1991).

e) Corresponding to the hero framing of innovation and singular exemplars, there is the risk that energy saving practice would be appraised as technologically and economically demanding, and hence burdensome for public replication. These critiques included consideration of the cost of saving practices for all sorts of actors and their technical complexity in relation to the public. A notable example of this was the quasi-unanimous acceptance amongst passers-by of the innovative practices in *Media-ICT*, which turned into rejection when I inquired into the potential integration of the latter into other buildings.<sup>118</sup> Similar narratives were formulated by passers-by of *Fabrica del Sol* and *Endesa*, as well as by inhabitants of the *Efficient Block*. According to this finding, a social consensus about the leading role of organisations and the sufficiency of their practices may be further explained by the public's "addiction" to energy (Healy 2014), but most fundamentally by representations that result in the appraisal of energy saving practice as

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of building performance which are not negated through official communications, thus supporting claims about their deceptive function.

<sup>117</sup> Such critique from passers-by and some experts would thus explain the preference of the company not to make narrative statements which could be criticized.

<sup>118</sup> This contradicts the claims of the designers that the "empathetic" building contributes to normalize sustainable buildings and demonstrates to the public that saving energy can be inexpensive (Section 6.3).

burdensome. There is therefore a need to re-cognise the role of behaviours and vernacular practices in commercial buildings and for contextualising innovative practices as related to the former two.<sup>119</sup>

These findings offer suggestive evidence about the public alienation from saving energy being related to the public appraisal of contradictions. Regardless of the consensual acceptance of expert conceptualisations of energy saving, as shown in Section 7.1, the public appears to be critical of official practice, providing an explanation for the “value-action gap” (Blake 1999). The official framing of innovative practices and singular exemplars implies an appraisal of energy saving practice as burdensome or hypocritical, if not actually responding to obscure interests, resulting ultimately in public alienation. This supports with empirical evidence of everyday existing theoretical claims about how energy saving exemplars legitimate organisations as the actors best equipped to save energy, whilst alienating the public from reproducing these practices (Swyngedouw 2010, 2011; Janda and Topouzi 2015). Accordingly, blame should not fall on the public for failing to abide by consensual values, but on organisations for relying on techno-economic knowledge (Lutzenhiser 2014), and furthermore producing the illusion that sufficient action is being taken (Swyngedouw 2010, 2011). This understanding compromises the exploration of the “social potential” of saving energy (Moezzi and Janda 2014).

This chapter constitutes an empirical contribution to engaging everyday meaning-making in policy and critical research that is addressed at understanding the ongoing problem of energy saving policy and research: namely, its failure to engage laymen public in saving

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<sup>119</sup> I am thinking here about the glass shading in the *Endesa*, or the EFTE façade in the *Media-ICT*, whose function parallels that of curtains. Similarly, the elements of automation present could be explained as the necessary counterpart in commercial buildings of the manual operation of windows and lights in residential units.

energy. The chapter serves to problematize the failure of official representations to produce an appropriate practice and reveal that the prevalence of a hero framing of innovation and singular exemplars has an alienating effect. Although the appraisal of official representations of technological innovation in singular exemplars succeeds in generating a “banal” conceptual and social consensus (Lefebvre 1991) about the appropriateness of technological innovation and organisational leadership, it fails to engage the public. Official narratives that reflect on the consistency of practice could foster a caring framing of integration, potentially fostering the public’s learning from official practices; not only in terms of replication but of appropriate energy saving. However, this caring framing of integration involves exposing organisations to public critique. This chapter contributes to the scholarly critique necessary for the recognition of buildings as co-producing practice and ultimately supports the proposition that organisations may find it advantageous to shift from their currently decontextualising framing to one that re-politicises practice.

## Chapter 8. Interpretation and relevance of findings

The search for disciplinary approaches for tackling the limited attention paid to the meaning of Government, expert, and corporate practices of energy saving took me a long way through the review of economic, psychological, socio-psychological, and critical explanations aimed at creating an understanding of the gap left by dominant positivist knowledge and post-structuralist critique. Both of the latter marginalize the role of everyday meaning-making in the production of practice. Recognition of the need to re-appraise this meaning to better inform policies intended to compel the public to save energy was completed when I acknowledged – inspired by Lefebvre (1991) and applied practice theories – the epistemological and political roots and implications of a disregard for the context of practice. Responding to this purpose, I engaged with an interpretive policy analytical approach that also acknowledges that meaning-making occurs in the context of practice, and mediates the reproduction of practices. Study of the “framing” of different official and everyday representations helped with appraising what dimensions of practice contextualise meaning-making for different actors (van Hulst and Yanow 2014), and hence what contradictions are relevant for them. Guided by Lefebvre’s theory about the spatial unicity of practice (1991) and empirical findings of social practice, learning and corporate responsibility (Chapter 2), I studied the framing divide between official representations and everyday meaning-making that potentially hinders the (re)production of meaning and practice(s). Conceptually, I differentiated between energy-saving *practices as representations* (as enacted in commercial buildings), and practices embedded practice. The latter require the transformation of the socio-material context (Shove 2003; Shove and Walker 2010; 2014) and are constitutive of what I term, inspired by Lefebvre, “appropriate

practice”, i.e. which is “consistent” throughout its conceptual, material and social dimensions (1991). My main research question thus became:

*How do official representations of commercial buildings relate to the everyday meaning-making of energy saving and the (re)production of its practice?*

This question implied understanding the divide that occurs between official representations of energy-saving practices regarding commercial buildings and their everyday appraisal by the public. Understanding this divide cast light on the political interests that underlie official representations (reviewed in Chapter 5) and their implications for the (re)production of everyday meaning and practices, thereby responding overall to my dual goal of informing policy and political critique. Empirically, I approached the main question through the following sub-questions:

- a) How do EU, National and City policies in Barcelona frame energy-saving practices in commercial buildings?*
- b) How do the official narratives and practices of commissioning organisations frame energy-saving practices in four commercial buildings in Barcelona?*
- c) How does the public make meaning of energy saving practice through their everyday experience with four commercial buildings in Barcelona?*

In the remainder of this chapter I first summarize and critically review my findings (Sections 8.1 and 8.2). This exposition of findings responds to the research questions in reverse order in order to critically review official representations (Questions 1 and 2) in terms of their epistemological distance from everyday meaning-making (Question 3). Then, I critically review my findings in the context of previous research, theoretical debates, and the proposed methodological approach to understand their limitations and

original contribution. The last section of this chapter covers the policy contribution of this dissertation.

## **8.1. Public alienation in the everyday appraisal of buildings**

The study of everyday narratives (Chapter 7) shows that everyday meaning is produced in a context of practice, granting relevance to the *consistency* between the studied buildings and the social values (that I refer to as coherence); the energy-saving practices of organisations (material integration); and the social responsiveness of organisations (social integration). At times (a), the public appraised the buildings under analysis as consistent in practice. The organisation, the practices deployed, and the overall practice being represented were thus accepted as legitimate. In other cases (b), the public identified contradictions in practice, and formulated what I call (after Lefebvre) a radical critique of everyday (1991) that recognises the underlying interests of organisations.

- a) The opinion of multiple publics about the four buildings under study reflected the consensus surrounding dominant reductionist conceptualisations and technological practices of efficiency, smart and renewable energy generation, resulting in the acceptance of commissioning organisations that abide by these principles. The commissioning organisations were appraised as best equipped and hence legitimised to enact innovative practices in singular exemplars, resulting in what Lefebvre calls a “banal consensus” that is not only conceptual but social (1991, 6). The appraisal of energy saving practice, as reduced to the deployment of innovative technologies in singular buildings appeared related to a practice that is hypocritical or costly, grounding public alienation from reproducing related practices. (A similar argument was developed by Swyngedouw 2010, 2011; Healy 2014, and Janda and Topouzi 2015).

On the contrary, multiple users reproduced official claims about organisational responsiveness and formulated benevolent acceptance of official claims about savings thus attained, the integration of practices (e.g. in *Fabrica del Sol*), and related communication (e.g. about *Endesa*).<sup>120</sup> This shows that social consensus is fostered by the enactment of public engagement instruments that represent the production of what Lefebvre calls “appropriate” social practices (1991). To an extent, the enactment of accepted conceptualisations, technological practices and social engagement diverts attention from the consistency of practice, which is appraised as appropriate.

- b) Appraisal of the buildings as innovative and singular exemplars – hence, contradicting other practices of the organisation – resulted in limits being placed on the credibility of official claims. Such was the case of passers-by and expert publics when appraising the Council deployment of renewable technologies as exemplified in *Fabrica del Sol*, and of smart technologies as represented in *Media-ICT*. Both types of practice were then understood as innovative and costly, hardly replicable in residential buildings, and undesirably integrated into commercial ones. The public critiqued the organisation for seeking legitimacy instead of the public good. As a result, these publics were also alienated from the energy-saving practices that were represented. Additionally, the limited responsiveness of the organisation towards user needs and experiential knowledge about its vested interests – the failure to produce social relations appropriate to saving energy – resulted in users’ rejection of official claims about *Media-ICT* and *Endesa*, and appeared to be related to the lack of inhabitant’s interest in the *Efficient Block*. When appraising contradictions between the building and the overall practices of the organisation, the public made claims for the integration of more replicable

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<sup>120</sup> Endesa users (mostly staff) even claimed that energy saving was part of the business model of the company, in opposition to passers-by and critical expert reviews about the corporate and marketing interests of Endesa.



practices – as opposed to singular and innovative practices, whose legitimating function was recognised.

Accordingly, three findings can be differentiated in response to Question 3:

- 1) Expert conceptualisations, innovative technological practices, and social relations that were represented in singular exemplars potentially conceal contradictions in practice, resulting in the public legitimization of the organisations for their leading role in the adoption of energy-saving practices. These are appraised as a proof that an appropriate practice is being deployed by organisations.
- 2) An appraisal of contradictions results in recognition of the legitimating function of the buildings and the underlying interests of organisations, potentially providing grounds for a radical critique of official practice.
- 3) Whether appraising the buildings as coherent in practice, or appraising their contradictions, the layman public is alienated from the official practice as represented in the buildings.

Contributing to answering the main research question, these findings show that any sensible attempt to produce a practice of energy saving and compel the public to save energy needs first to account for producing consistent practice, as meaning is produced through living engagement with practices in their everyday context. By demonstrating that the everyday meaning of energy-saving practices is produced in a context of practice, my research is broadly in harmony with applied social practice research, wherein energy use is considered to be “embedded” in social relations of practice (Shove 2003; Shove and Walker 2010; 2014), and meaning-making mediates the reproduction of saving practice (Wilhite 2010; Wilhite 2014; Warde 2011). These findings align with the claims of cultural

reviewers of practice for whom tacit meaning is produced through repeated everyday engagement, as opposed to the positivist epistemologies dominant in policy-making, where visual and quantitative information prevail (Wallenborn and Wilhite 2014). My findings scholars expand these insights by incorporating the everyday appraisal of contradictions, referred to by scholars of social learning and representation theory as causing mistrust about energy saving messages (Jackson 2005, 2009; Batel et al. 2016; Devine-Wright et al. 2017). Overcoming the diverse focus of these approaches, yet also encompassing them, the conceptual framework inspired by Lefebvre's unicity of space provides explanatory capacity for practice theory to incorporate how meaning-making mediates the reproduction of practices, as also claimed by interpretive policy analysts (Yanow 2007; van Hulst and Yanow 2014). These findings provide grounds for a pragmatic approach, as proposed by Guy and Moore (2005b) - that can bridge the epistemological and conceptual divides underlying the energy saving gap. They also transform the current social relations underlying energy-saving-related policy, research, and practices, as problematized by Lutzenhiser (2014), because for the energy-saving practices of elites to be reproduced on an everyday basis they first need to be credible, and hence appraised as consistent in practice.

## **8.2. Legitimation of the status quo through reductionist representations**

One of the most surprising contradictions that was observed was the limited *textual* communication about the studied buildings in terms of addressing laymen publics, particularly in ways that related to their consistency of practice as an integral part of organisational practice, and as replicable by the public. It appears that internal debates about representing practice either through innovative practices using singular exemplars, or as replicable and integrated practices were resolved with the preference of politicians,

communication offices, and boards of directors for the former. This outcome was explained by experts with internal insight into these decisions as responding to a desire to divert public scrutiny from the organisations' building management – in the case of government actors, and vested interests – in the case of Endesa. A common intent to government and corporate organisations was to improve their public image.

To the generalizability of the argument presented here contributes the research into EU, Catalan Government and Barcelona Council policies which were found to have privileged during the research period the deployment of innovative technologies over replicable practices such as behaviours. Apparently praiseworthy efforts to save energy and to recognise the socially transformative role of the buildings – what the EU policies refer to as an exemplary role – were not reflected in communication policies and practices, which failed to explain to what extent and how practices are integrated into the organisation and can be replicated by the public; they also failed to show how the organisation cares and fosters learning about saving, thus raised doubts about the merit of the practices they deployed.

Responding to Questions 1 and 2, I thus claim that: Official representations of commercial buildings frame energy saving practice as innovative and singular in nature, thereby diverting attention from the socio-material context of practice – i.e. organisational integration and potential for public replication – regardless of any proclaimed commitment to caring about saving energy and fostering public learning.

In contrast to the relevance granted to the context of practice in everyday framings (Section 8.1), this finding shows that in official representations buildings may operate as empty signifiers. As with expert conceptualisations, technologies and aesthetics, they can play a de-politicising role (Tregidga, *et al.* 2018, 2014; Ward 1996; Dutton and Mann 1996;

Farmer and Guy 2005; Stirling 2007) by contributing to what Lefebvre terms as a “banal consensus” (1991, 6). Representing organisations as leaders that care about consensual values of energy saving and enabling the public to learn about how to save energy is important because, as claimed by Suchman, alignment with socially accepted values constitutes a source of legitimacy with regard to consumers, voters and investors (1995). Instead of transforming the practice of organisations and its social relations to produce appropriate practice (Shove 2003) – hence fostering a caring and learning framing, as proposed by Janda and Topouzi (2015) – practice is enacted to accord with ad hoc, empty values.

The preference of organisations for representing buildings out of context explains their apparently contradictory and limited endeavours to attain public recognition of the apparently praiseworthy efforts of Endesa and the Council through textual communication. Similarly, overly optimistic appraisals – such as the case of widespread beliefs about the energy-generating capacity of the *Media-ICT* façade – were not disdained either. Limiting textual communication is an important mechanism for escaping a post-structuralist critique that is best equipped to reveal textual and conceptual tricks (Dutton and Mann 1996; Hart 2001, 3037). This is convenient because the ultimate goals of sustainability are not established and remain open to critique (Geels 2010). Hence, contextualising and textually publicizing the practices related to these buildings would have exposed the organisations to critique, whether for underachieving – as in the case of government buildings – , or overspending – as in the case of Endesa. Decontextualised from practice, the buildings may reap legitimacy benefits whilst escaping critical scrutiny.

Contributing to answering the main research question, the de-contextualisation of practices in the studied buildings raises doubts about their function of producing a practice of energy saving. Instead, this finding resonates with Lefebvre’s claims about buildings

*illusorily* representing the practice of organisations as consistent, and hence legitimate (1991). One could argue that the marginal recognition of the context of practice responds solely to the dominance of positivist epistemologies and quantitative knowledge, and even to the under-theorization of meaning as mediating the reproduction of practice, as problematized by cultural reviewers of practice (Warde 2011; Wilhite 2014; Wilhite 2010; Guy and Moore 2006, Dutton and Mann 1996). However, the legitimating function of commercial buildings is substantiated by my findings in Section 8.1, which show that public appraisal of the studied buildings contributes at times to legitimizing the organisations, and in general to alienating the public. Therefore, the studied building-cases do not co-produce an “appropriate” practice of energy saving. Moreover, meaning is acknowledged at the convenience of the organisations, since there is overt recognition of the legitimating function of technological innovation through singular exemplars, as in the case of the Barcelona policies (Section 5.3.1). Other official claims about the studied buildings represent specific commitments of the organisations that necessarily acknowledge their role in co-producing meaning.<sup>121</sup> The plausibility of the argument that is presented is furthered by the series of vested interests reviewed in Chapter 5.<sup>122</sup> Energy saving representations, therefore, appear as populist instruments of elite- and knowledge legitimization, as also argued by scholarly reviewers of elite practices (Swyngedouw 2010, 2011; Healy 2014; Janda and Topouzi 2015).

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<sup>121</sup> The claims referred to include the Council commitment to the knowledge economy – in the case of *Media-ICT*, to sustainability – in the case of *Fabrica del Sol*, to co-responsible use of energy – in the case of *Endesa* – and as a means of promoting the energy renovation of residential buildings – *Efficient Block* .

<sup>122</sup> These interests include: a) those of energy corporations invested in the current energy model and of financial institutions invested in real estate, which together shape Spanish policies of energy saving; b) the pursuit of added value from investing in Barcelona whilst concealing processes of accumulation (March and Ribera-Fumaz 2016; Charnock *et al.* 2014), c) continued economic growth whilst reaping government legitimacy – in front of the public – and the statization of the EU and Catalonia regarding international players (Talus 2013; Calzada 2017; Torfing 2006; Jordan 2005; Elden 2004); and d) the need to conceal the dubious management of Catalan Government buildings, as reported by experts. These interests are particularly relevant in terms of the “crisis of legitimacy” of the EU (Habermas 2012), and the impacts of the global financial crisis of 2007 regarding the resulting welfare cuts and public discontent (Sections 5.1 and 5.2).

### 8.3. Significance of the findings

The policy, political and epistemological preoccupations at the root of this research received increased scholarly attention during the time of research. Positivist and quantitative knowledge continue to dominate energy research and policy (Sovacool et al. 2015). Additionally, the provision of unitary narratives, which have been found necessary to counter this dominance and to engage the public in saving energy (Bushell et al. 2017; Shove and Walker 2014), is countered by the diverse and conflicting nature of constructivist and post-structuralist frameworks that incorporate everyday meanings and social relations (See Gailing and Moss 2016 for a review). The engagement of buildings as representations aligns with the theoretical recognition of buildings as “discursive practice”, common amongst critical discourse analysts (Fairclough 2005; Bacchi and Bonham 2014, Bacchi 2009; Bacchi 2015; Liggett 2003; Laclau and Mouffe 1985). However, critical reviews of energy saving theory and practice continue to reproduce the post-structuralist focus on narratives. They lack empirically pluralist engagement with those targeted by policies, practices and commercial buildings, and thus support the reproduction of social relations with the knowledge of experts (Lutzenhiser 2014) which fosters an understanding of buildings as “transparent” – i.e. empty of meaning (Dutton and Mann 1996; Farmer and Guy 2005; Guy and Moore 2005a). Altogether, the “illusion of transparency” – which for Lefebvre underlies the assumption that buildings, like space, are “innocent” – continues to “[be] dispelled only very slowly” (1991, 292).

The significance of my findings is magnified with the rise of novel concerns amongst scholars of energy saving about the limited scrutiny of commercial buildings. Most science and policy assumes the economic rationality of organisations, and therefore a sufficiency of the related practices in commercial buildings. This situation justifies greater attention being paid to residential buildings (Lutzenhiser 2014). These assumptions

imply neglect of the also *rational* interest of organisations in improving their public image. As a result, energy-saving practices in commercial buildings are regarded as the result of voluntary action, enabling them to function as socially legitimating instruments (Lutzenhiser 2014; Geels 2010; Porter 1998; Janda and Topouzi 2015; Swyngedouw 2010). This is important, because transforming energy-saving practices requires addressing underlying power and social relations (Moss 2016; Geels 2010); that is to say, transforming practice (Shove 2003; Bohman 1997). One means of transforming these relations is countering, empirically, the positivist assumptions that foster elite and expert interests by recognising everyday knowledge and publics (Guy and Moore 2005b).

The radical critique that is proposed, empirically based on everyday knowledge, resonates with the interest of transition theorists, social responsibility- and renewable infrastructure acceptance scholars in public opinion, resulting in the everyday appraisal of contradictions (Geels 2010; Porter 1998; Bowen and Aragon-Correa 2014; Lyon and Maxwell 2011; Parguel et al. 2011; Batel et al. 2016; Devine-Wright et al. 2017). Public appraisal of these contradictions unveils a deceptive legitimating function, referred to by corporate responsibility scholars as “greenwashing” (Bowen and Aragon-Correa 2014; Lyon and Maxwell 2011). It also counters the credibility of the policy message (Jackson 2006; 2009). However, the study of these contradictions as appraised in everyday life – overcoming the epistemological dominance of text – is uncommon (Lefebvre 1991). Engaging with how meaning is produced in everyday, instead of imposing expert and scholarly epistemologies, therefore appears necessary for the practices of organisations to be credible and replicable in everyday life.

Incorporating the everyday appraisal of contradictions – across the social, material and conceptual domains of practice – as an analytical tool provides new, democratic, and legitimate grounds for theory formulation and verification, thereby contributing to

democratizing the production of knowledge and expanding the limits of post-structuralist critiques that typically rely on theoretical assumptions about the discursive effects of narratives and knowledges (Dutton and Mann 1996, Hart 2001, 3037; Lefebvre 1991). Empirically engaging the public as meaning-makers allows us to study how processes of legitimation and alienation occur, thereby contributing to overcoming conceptual debates and supporting diverse theoretical and disciplinary approaches towards pragmatic engagement with pluralistic accounts of everyday. This research empirically sustains and conceptually furthers the scope of contemporary critiques of energy saving narratives and conceptualisations reviewed in Chapter 2, bringing to the fore the role of commercial buildings, and making organisations accountable for the meaning and practice co-produced by their practices. Overall, this dissertation opens the way to transformative approaches to energy saving policy and research; ones that move the focus from the practices of residential publics – currently blamed for failing to fulfil expert expectations – towards policy-makers, organisations and experts – which are henceforth deemed necessary for producing credible and replicable practice. I have synthesized the original contribution of my study along the theoretical, methodological and policy domains which have in common their radical critique of the established knowledge and social relations reproduced in and through commercial buildings.

#### **8.4. Theoretical contribution**

A fundamental contribution of this dissertation is how it reveals the political and epistemological roots of the insufficient attention being paid to the role of buildings in co-producing meaning and practice. I have empirically demonstrated that commercial buildings framed in the post-positivist epistemologies of experts operate as Lefebvrian representations which negate the context of practice and thereby serve an elite-legitimizing and social-reproductive function that counters the production of an appropriate practice of



saving energy. Being aligned with the theoretical framework inspired by Lefebvre's production of space (1991), in commercial buildings (Figure 2): a) practices are reduced to the deployment of efficient, renewable and smart technologies of innovation (spatial practices); b) values are reduced to an economic rationality that arguably drives the decisions of organisations (representations of space); and c) social relations are reduced to restricted processes of participation and top-down information (representational space). A building represents explicit narrative claims about organisations *coherently* abiding by socially accepted values regarding energy saving, generating the illusion that: a) organisations *integrate* energy-saving practices throughout their buildings and other domains of operation, and hence b) foster positive social transformation. The buildings studied, as officially framed and as appraised by the public, do not appear to foster the *replication* of practices nor the production of *appropriate* relations.

Insufficient epistemological attention to the role of buildings in co-producing meaning and practice enables the production of tacit messages that are uncritically accepted by the public amidst the dominance of positivist knowledge. The illusion that appropriate practice is being produced appeals to the ontological unicity of space that monuments enact according to Lefebvre (1991). Hence, in the everyday production of meaning practical inconsistencies are overlooked in the absence of recognition of everyday knowledge and critique that is able to appraise the contradictions in practice of buildings produced and communicated through expert knowledge. Expert knowledge and elite practices are then appraised as legitimate in terms of their pursuit of positive social transformation; i.e. the production of an appropriate practice of energy saving. This is my interpretation of the function played by commercial buildings in Lefebvre's production of space, which I have demonstrated through my empirical findings. As claimed by Lefebvre, the "banal [conceptual] consensus" surrounding expert conceptualisations (in this case of energy

saving) turns into a social consensus that marginalizes alternative, non-technological and social transformative approaches (1991) to saving energy.<sup>123</sup>

A critique of everyday – apparently absent from civil activism and empirical reviews of commercial buildings – arises when asking the public about the meaning of commercial buildings, indicating the potential for pluralist scholarly research that brings to the fore tacit knowledge and critique about the contradictions of practice. The public appraisal of contradictions between official representations of buildings and their context, unveils the illusory production of appropriate practice. It questions the credibility of claims about energy saving and the replicability of the technologies and designs that are proposed and the social function of the buildings.<sup>124</sup> The latter are no longer perceived as contributing to the consensual good, but to the interests of the commissioning elites and experts who are involved. Re-appraising the unicity of practice to ensure its ontological production and its epistemological match with everyday meaning-making therefore becomes a prerequisite for understanding the limited (re)production of official energy-saving practices – known in the literature as the “energy efficiency-” and the “value-action gap” (Jaffe and Stavins 1994; Blake 1999; Sovacool et al. 2014). Addressing the material, conceptual and social domains of practice – as appraised everyday – amounts to a radical critique of dominant knowledge. It constitutes a novel conceptual approach to understanding and critiquing scholarly frameworks about residential energy saving that typically marginalize social constructivist theory (Wilson and Dowlatabadi 2007; Lutzenhiser 2014; Wilson et al. 2012), and hence the role of buildings – and overall the practice of organisations – in co-producing everyday practice. Through a pluralist

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<sup>123</sup> Such is the case of the practice-, cultural- and social-geography-based critiques of technologically reductionist frameworks reviewed in Chapter 2.

<sup>124</sup> Limited credibility was assumed in response to the limited integration of energy-saving practices in the buildings of the organization – as common amongst passers-by in *Fabrica del Sol*; limited replicability as epitomized in the *Media-ICT*; while the relationship of commissioning organizations with citizens was problematized by multiple passers-by in Endesa and inhabitants of the *Efficient Block* .

recognition of the contradictions and interests underlying the commissioning of energy-saving commercial buildings, this dissertation sustains the theoretical contributions – aligned with practice and spatial theory – about the legitimating function of the practices of experts and elites that is at the root of public alienation.<sup>125</sup>

The theoretical framework that is proposed addresses the limited theorization of how meaning-making mediates the reproduction of practice that is also problematic for authors like Wilhite (2010), Ingold (1999) and Verbeek (2005). It expands the explanatory capacity of cultural approaches to practice like those of Wallenborn and Wilhite (2014) which acknowledge the role of repeated multi-sensorial experience – that trespasses the limits of prevalent cognitive-perceptual reductionism – but fails to problematize the counter-productive role of practical contradictions. By recognising non-textual representations and granting epistemological centrality to everyday meaning-making, the theoretical framework hereby proposed overcomes the post-structuralist centrality of the “text” (Dutton and Mann 1996, , 19, 190, 196; Hart 2001, 3037). I find the latter common in applied critiques that appeal to the legitimacy of organisations and the credibility of their message, which I find characterized by the limited reflection on the material and social integration of practice (Jackson 2005, 2009; Bowen and Aragon-Correa 2014; Lyon and Maxwell 2011; Parguel et al 2011).<sup>126</sup> Furthering the claims of these scholars, the proposed framework makes explicit the fundamental role that social relations play in the production of meaning, relevant in studies of renewable infrastructure acceptance inspired by social representation theory, as fostering trust, acceptance and engagement (Gross 2007; Batel et

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<sup>125</sup> Among the work reviewed in Chapter 2, see: Lutzenhiser 2014; Moezzi and Janda 2014; Janda and Topouzi 2015; Guy and Moore 2005a; 2005b; Wilhite and Norgard 2004; Wilhite 2010; Wallenborn and Wilhite 2014; Swyngedouw 2010, 2011.

<sup>126</sup> By nurturing the accountability of organizations, my study provides the epistemological and conceptual tools for undertaking a critical review of corporate social responsibility which, in acknowledging public appraisal, brings to the fore the contradictions between the narratives and practices of organizations. Boosting their critical capacity, my research enables scholars to refer to the de-contextualisation of buildings and other practices as deceptive legitimating instruments, elsewhere referred to as greenwashing.

al. 2016; Devine-Wright et al. 2010; Greenberg 2014). An essential commonality of my theoretical claims with these studies appears to be the voice granted to the public. Thus, by shifting attention from the *official representation* to the *everyday meaning* it co-produces, the theoretical framework that is proposed facilitates incorporation of the study of non-textual practices. This is important given increasing concern about the consistency of official messages in attempts to theorize the public adoption of energy-saving practices (Moezzi, et al. 2017; Janda and Topouzi 2015; Bushell et al. 2016; Shove and Walker 2014), whose explicit focus is on narratives.

Conceptually, a fundamental distinction needs to be made between buildings and practices *framed in the context of practice* that potentially co-produce appropriate practice, from those practices that function as *representations*, fostering the illusion of producing a consistent practice. My research contributes to differentiating “practices” from “practice”, and countering reductionist uses of the latter as akin to “behaviour” (e.g. Stephenson et al. 2013) that therefore disregard the social embeddedness of practice (Shove 2003; Shove and Walker 2010; 2014). My use of the terms aligns with that of cultural theorists of practice (Wilhite 2010; 2013; Wallenborn and Wilhite 2014) and thus encompasses behavioural, lifestyle and social-transformative approaches to saving energy. This is important amidst increasing recognition of “non-technological” potential (Ürge-Vorsatz et al. 2009) and the “behavioural and social potential” for energy efficiency (Moezzi and Janda 2014), as well as the demand for “going beyond efficiency” (ECEEE 2018b, 2018a) that attempt to expand the explanatory potential of energy efficiency. These reconceptualisations of energy efficiency encompass the dangerous recognition that technology and behaviour change may occur without social transformation. In contrast, the theoretical framework proposed here makes explicit the needed unicity of practice in mental, social and material dimensions in the (re)production of practices. This implies the

need of a careful conceptualisation of energy saving in research and policy aimed at saving energy beyond technical and economic choices like the one advocated by Wilhite and Norgard (2004). In the following two sections I show how this theoretical contribution can constitute an operable tool, both for scholarly review, and for policy-making and assessment.

## 8.5. Methodological reflections

This dissertation shows the potential for and need to incorporate interpretive modes of assessment into energy saving research and policy. Since these are intended to foster the public acceptance and adoption of official practices, the current marginalization of everyday meaning-making – understood as mediating the reproduction of practices (Wilhite 2010) – seems abnormal from an interpretive approach to policy assessment (Yanow 2007, 2013b; van Hulst and Yanow 2014). Countering this situation, I have shown the sufficiency of ethnographic methods – barely applied to commercial buildings (Lutzenhiser 2014) – to assess buildings according to their capacity to co-produce meaning amongst users but also amongst the wider – non-user – public. This sufficiency counters the predominance of quantitative modes of assessment which fail to address public appraisal.<sup>127</sup> This is important because quantitative assessments (Janda and Topouzi 2015), and their epistemological grounds (Lefebvre 1991; Dutton and Mann 1996; Guy and Moore 2005a) are found to be co-responsible for presenting commercial buildings in positive ways that conceal the context of practice, and hence counter the (re)production of appropriate practice. By subjecting to everyday interpretation the buildings of elites, produced with the engagement of design- and communication experts, this research contributes to turning on

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<sup>127</sup> I have deliberately avoided reference to quantitative assessments to demonstrate the self-sufficiency of interpretive methods.

its head the epistemology and focus of energy saving research and policy assessment, as well as the social relations grounded in the prevalence of expert knowledge.

The use of open questions, combined with the analytical focus on “framings” inspired by van Hulst and Yanow (2014) overcomes a focus on the syntax of buildings proposed by some proponents of interpretive building techniques like Yanow (2013a). This method enables the researcher to capture the relevance of the context of practice as proposed by practice theorists (Shove 2003, 2010), ultimately allowing a re-appraisal of the contradictions that occur between the conceptual, material and social domains that, for Lefebvre, practice involves (1991). Analytically engaging framings to appraise what Lefebvrian contradictions between the domains of practice and between monuments and the former opens up new avenues for radical critique. This critique aligns with calls for incorporating non-textual discursive practices, as proposed by scholars of discourse (Fairclough 2005; Bacchi and Bonham 2014, Bacchi 2009; Bacchi 2015; Liggett 2003; Laclau and Mouffe 1985) but which have been insufficiently supported with empirical engagement with the public, explaining insufficient theorisation and conflicting conceptualisations that characterize reviews of the official discourse. By nurturing an empirical, pluralist basis for a critique of everyday, the methodological approach hereby proposed counters the risk of the critical reviewer being misled by dominant knowledge: a problematic issue for discourse analysts like Tregidga and colleagues (2018). Moving beyond post-structuralist pre-occupations about the conceptual baits of a post-political jargon (Dutton and Mann 1996; Guy and Moore 2005a), the interpretive approach thus proposed engages with a first-hand pluralist and pragmatic appraisal of *what* is relevant for the public targets of policies and buildings. The latter then permits assessing official representations according to their contradictions, from the perspective of those addressed by these representations.

An analytical focus on framings serves to differentiate official representations that conceal the context of practice from everyday meaning-making. This overcomes an analytical problem because both framings coexist in the narratives of respondents. The former serves to recognise processes of knowledge dominance, and to engage some experts as public, incorporating their experiential insights into building commissioning.<sup>128</sup> The use of framings expands the analytical approach of Janda and Topouzi (2015) that applies “hero”, “caring” and “learning stories” about commercial buildings, by explicitly recognising non-textual representations as bearers of meaning. Each type of story proposed by these authors, combined with the Lefebvrian theoretical framework, inspires differentiation between framings involving a) conceptual coherence, with expert conceptualisations – the hero framing of singular and innovative buildings; b) the material integration of energy-saving practices in other buildings and domains of activity – the caring framing of integration; and c) social integration. The latter can be understood as contributing to a the learning framing of replication but also as a proof of the organisation caring to the extent of being willing to transform the way it relates to the public, by opening to public scrutiny and producing collaborative relations. Engaging in an analytical approach based on an everyday appraisal of consistency and contradictions serves to substantiate the assumptions of Janda and Topouzi and others<sup>129</sup> about official narratives, providing empirical ground for acknowledging the, mostly tacit or taken-for-granted, discursive effect of buildings.

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<sup>128</sup> Engaging experts as publics aligns with ideas in the work of Shove and Walker (2010) and Janda and Parag (2013) who claim the need to compel the participation of these actors, as publics of the energy policy message, in terms of their role as middlemen in the production of practices.

<sup>129</sup> The studies reviewed include the work of Swyngedouw (2010, 2011), Fernández González (2016); March and Ribera-Fumaz (2016); Baccarne et al. (2014); Anttiroiko et al. (2014); Haarstad (2017) and Healy (2014).

A research design based on four cases located in the same city, a review of EU, Spanish, Catalan and Barcelona Council policies, and the contrasting of findings with empirical research from the disciplinary borders of energy saving research (Section 2.9) served to discriminate anecdotal findings, fostering their generalizability. Generalization is considered important given my goal of informing policy-making and countering the dominance of positivist and post-structuralist epistemologies in applied policy formulation, assessment and critique. In agreement with Sánchez-Jankowski (2002), generalization is considered part of meaning-making and interpretation, creating a base on which policy action may be grounded. Some may expect the research design to be restricted to a maximum of two cases, located in a similar context, in order to identify causalities (Schmidt 2008). However, as Guy and Moore claim, a pluralistic account – which a diversity of cases qualifies as – contributes to the formulation of pragmatic principles relating to how meaning is produced (2005b).

A methodological limitation arises from this form of disruptive engagement with the sources of evidence, especially concerning on-the-spot interviews. In asking interviewees about their thoughts about the building, the energy-saving practices deployed therein, and their potential integration into other buildings I could have problematized these matters. Ethnographic methods that rely on less structured, more casual conversations (like those conducted in this research with experts) could have been less invasive, but would have proved more time-consuming and involved ethical and practical issues about the engagement of interviewees, who would not have been informed about the purpose of my research. However, a reflective study of different framings appears to be a reliable analytical instrument for overcoming the limitations of strictly studying meaning by focusing on its production. A fundamental methodological recommendation originates from this study: sensible approaches to understanding the public adoption of energy saving



need to build upon an understanding of how the public makes meaning of the energy-saving practices produced by elites. A pluralist interpretive assessment provides an avenue for further study of the Barcelona City Council policies and practices, because since the end of my field research the former has evolved in terms of its engagement with more transparent and inclusive communication, constituting an opportunity for longitudinal studies.<sup>130</sup> To preserve the essence of radical criticism, I recommend that researchers continue to engage a plurality of publics; a methodological strategy necessary for appraising what is relevant for those targeted by official representations.

## 8.6. Policy contribution

This dissertation provides a novel explanation of why and how the public fails to engage with the consensual principles of energy saving, described as *gaps* in the energy efficiency literature (Sovacool et al 2015; Jaffe and Stavins 1994; Blake 1999). It appeals to a reformulation of these gaps as a public response to the contradictions of the official messages (as argued by Bushell et al. 2016; Jackson 2006, 2009; Shove and Walker 2014; Moezzi et al. 2017; Moezzi and Janda 2014), making explicit the relevance of the internal consistency of practice for the production of everyday meaning and practice. In doing so, this dissertation contributes to shifting policy attention away from residential publics – blamed for failing to re-produce the official practices of energy saving – to questioning the official practices and narratives in and about commercial buildings, as proposed by Lutzenhiser (2014), Moezzi and Janda (2014) and Janda and Topouzi (2015). My research highlights the policy potential for increasing attention to the practices of organisations, which should be assessed according to their capacity to co-produce a practice that is

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<sup>130</sup> Such a longitudinal approach does not appear applicable to the study of EU policies, since the new EU Directive 2018/844 has not clarified the rationale underlying their requirements for exemplary buildings.

credible, replicable and appropriate to the proclaimed purpose of saving energy and compelling to public to engage with related practices.

This study provides an operational theoretical and methodological framework (Sections 8.4 and 8.5) to bridge these gaps by bringing to the fore and exposing to critique the everyday meaning of commercial buildings. Organisations become accountable for the extent their buildings co-produce appropriate practice, as opposed to decontextualised representations which, according to my findings, counter the production of a coherent and credible message, and hence the (re)production of practice. This is important because practice theory, like constructivist approaches, have been critiqued for the limited policy applicability of their calls for transforming the socio-material context first (Stern 2000, 2017; Wilson and Dowlatabadi 2007). Acknowledging that governments and corporate organisations self-appointed as energy saving leaders are accountable for the co-production of appropriate practice implies recognising the production of appropriate practice as a public good. Hence, the meaning co-produced by commercial buildings needs to be re-appraised as a mechanism of policy assessment and civil scrutiny. This is necessary for “good governance”, whereby social capital is construed on “trust” (Weiss 2000; Fukuyama 2001), not on legitimacy. Aligning with Janda and Topouzi (2015), my findings suggest the need of a policy shift away from fostering the *hero framing of singular and innovative buildings* – whose function appears to be a legitimating one – to *caring and learning framings* – that re-incorporate the context of practice to foster credibility, trust, replication and engagement. My findings therefore contribute to understanding the policy potential for re-cognising that the practices represented in commercial buildings as potentially contributing to bridging energy saving gaps and fostering good governance.

Initial policy research calls attention to the consistency between policy narratives and the practice of organisations is reflected in the work of transition theorists who rely on

learning-, practice- (Jackson 2006; 2009), and legitimacy theory (Geels 2010), as well as in the critical reviews of corporate practices (Lyon and Maxwell 2011; Bowen and Aragon-Correa 2014). An apparently positive move in this regard is represented by the German Energy Transition policy of 2010 and the EU policy instruments that require the exemplary function of commercial buildings (EU 2010, 2012). However, the rationale of these instruments is only vaguely described, as shown in Section 5.1, to the extent of requiring a post hoc theoretical review of how government practices contribute to energy transitions (Gailing and Moss 2016). Moreover, these theoretical foundations have not been clarified in the new EU Directive 2018/844, which continues to focus on informative and market mechanisms, leaving untamed an overreliance on singular exemplars of innovation and demonstration, whose function in sight of my findings is a legitimating one. By failing to expose buildings to public scrutiny, the vague drafting and implementation of these policies, as represented in the studied buildings, reproduces the hierarchical relations between those governing and those governed that has been considered to jeopardize the potential for the public to co-produce saving practice(s) (Moezzi and Janda 2014; Lutzenhiser 2014; Shove and Walker 2010).

Re-appraising the everyday meaning of commercial buildings and overall elite practices implies increasing public engagement and countering ongoing de-politicisation. This is important because the de-politicisation of energy saving and the resulting alienation of the public has been found to be common to a) global climate and environmental governance (Swyngedouw 2010, 2011; Healy 2014), b) EU policy (Talus 2013; Torfing 2006; Jordan 2005), c) the smartification of cities like Barcelona (Fernández González 2016; March and Ribera-Fumaz 2016; Baccarne et al. 2014; Anttiroiko et al. 2014; Haarstad 2017), d) energy efficiency (Wilhite and Norgard 2004; Wilhite and Shove 1998), and e) energy-saving commercial buildings (Lutzenhiser 2014; Moezzi and Janda 2014;

Janda and Topouzi 2015). Re-appraising everyday meaning amounts to “opening up” concepts and practices to debate that have otherwise been “closed down” by expert knowledge (Stirling 2007; see also Mouffe 1993; 1999) in processes of “participation”, “representation” and “institution” problematized by Lefebvre ([1978] 2003, 99). This overreliance on expert knowledge and limited mechanisms of participation are considered to underlie the EU crisis of legitimacy (Habermas 2012). Re-cognising everyday meaning-making and re-engaging the public involves, accordingly, exploring the “social potential” as proposed by Moezzi and Janda (2014). This implies fostering a “horizontal circulation of elements” of practice and hence a transformation of the hierarchical relations between those who claim to produce and those who are called on to reproduce practice (Shove and Walker 2010).

The policy contribution of this dissertation, therefore, cannot be isolated from its contribution to social critique. The former provides an operable instrument for social critique and accountability, and thereby responds to the principles of good governance. It makes operable social-constructivist and, most particularly, practice theory contributions to producing an appropriate practice of energy saving that accounts for the necessary transformation of the social relations in which energy consumption is embedded, and which commercial buildings – in sight of my findings – contribute to reproduce. By exposing the epistemological and political causes of reductionist conceptualisations of exemplary buildings, this dissertation provides an opportunity for re-cognising their everyday meaning in processes of policy making, implementation and assessment. This amounts to reengaging with the ultimate goal of energy saving policies which, in attempting to raise awareness amongst the public, have failed to produce an appropriate practice and to compel the public to save energy to the extent expected.

## Chapter 9. Reflection and engagement

The purpose of this dissertation has been to re-cognise the everyday meaning of commercial buildings, unveiling the epistemological and political reasons for its marginalization in the energy saving policy and practice of organisations. This dissertation demonstrates the divide between the official representations (in commercial buildings) and the everyday meaning-making of energy saving practice. It presents suggestive evidence that a framing of practices decontextualised from practice – which I find counters the everyday production of meaning and practice – responds to vested interests and to the positivist knowledge of experts.

In the absence of explicit recognition of everyday epistemologies, multiple publics appraise official representations as a sign that a consistent and hence appropriate practice is being produced, hence legitimating organisations, expert knowledges, and the practices they co-produce. Energy saving practice is thus reduced in the collective imaginary to conceptually and technologically reductionist conceptualisations of energy saving as efficiency, self-sufficiency, and smart, as deployed technologically innovative and singular exemplars, which Lefebvre calls “monuments” (1991). Simultaneously with this uncritical acceptance, a latent radical critique originates from the appraisal of contradictions between the practices represented in commercial buildings and the practice of organisations. The appraisal of such contradictions supports then public claims about the underlying interests of organisations, which are revealed as contrary to socially accepted principles and proclaims, fostering scepticism. The direct outcome of both the uncritical acceptance and the radical critique of the official practice being represented is the widespread alienation of laymen publics from saving energy. This outcome counters official claims about the buildings under review fostering energy-saving practices amongst the public. It offers

suggestive evidence about the need for and the potential of re-cognising and re-politicising commercial buildings according to everyday epistemologies.

As discussed in Chapter 8, the theoretical, methodological and policy contributions of this research intertwine to produce a fundamentally radical but pragmatic approach to reframing official practices, whereby commercial buildings contribute to (re)producing appropriate practice – in this case, of energy saving. The novelty and relevance of this approach needs to be regarded in a contemporary context whereby revolving policy efforts framed in expert knowledge have failed to ensure the public adoption of energy-saving practices to the extent expected. The originality of this dissertation is related to the policy and research recognition of practices as discursive, particularly from the perspective of the plurality of publics making meaning and expected to reproduce practices in their everyday lives. The proposed approach crystallizes in the policy and political significance of this research, and in a series of policy and research recommendations which I expound in the upcoming sections.

## **9.1. Wider policy and political significance**

The transformative capacity of this dissertation originates from its radical engagement with the problem. According to the dominant explanation, citizens are responsible for failing to abide by economic and value-based expectations concerning their adoption of practice (Lutzenhiser 2014). Instead, my explanation of the energy saving gap addresses the failure of policy-making and building-commissioning organisations to produce an appropriate practice, which is conceptually, materially, and socially consistent, and overall credible and replicable. This explanation fundamentally shifts the focus of research and policy from the citizens expected to save onto the organisations which represent the official practice of energy saving practice in their commercial buildings. The problem lies no longer in the

limited rationality of the residential public, but in the epistemological limitations of the dominant knowledge (and critique) to incorporate the everyday processes of meaning-making. This is important because bridging the gap between – on the one hand – consensual values and expert knowledge-based models and – on the other hand – everyday practices constitutes a fundamental challenge to those willing to foster the reproduction of energy-saving practices (See Sovacool et al. 2015 for a recent review). It is also important because commercial buildings have been benevolently addressed by research and policies that assume the rational motivation of organisations to save energy (Lutzenhiser 2014), and disregard the importance of legitimisation and marketing issues for organisations (Geels 2010; Porter 1998). Such appears to be the case of the exemplary function of buildings in EU Directives and its implementation by the national, regional and local governments studied in Chapter 5. In re-appraising meaning as produced in everyday life, this dissertation constitutes and enables a radical critique whereby regulating policy-makers and commissioning organisations become accountable for the meaning and practice co-produced by the commercial buildings they regulate and commission.

The study of everyday contradictions as appraised by a plurality of publics furthers the potential and legitimacy of civil and scholarly critique, paving the way for scholarly recognition of everyday meaning-making and for the public to re-appropriate energy saving practice. Theoretically and analytically sustained with an understanding of the context of practice inspired by Lefebvre's unicity of space (1991), practice theory becomes an operable mechanism of social critique that addresses the transformation of social relations. This is important, because for practice theorists social relations embed energy consumption and their transformation is necessary for any attempt to make significant savings (Shove 2003; Shove and Walker 2010, 2014; Wilhite 2014) – and because thus far the policy operability of practice theory is limited (Wilson and Dowlatabadi 2007; Stern 2000, 2017).

Hence, making operable a practice approach for policies to compel the public to save energy has significance beyond the domain of energy saving, because it implies social transformation. The proposed approach to transforming practice goes beyond the “spill over” claimed by social-psychologists (Thøgersen 1999; Thøgersen and Ölander 2003) to engage a diversity of pro-social and pro-environmental behaviours, and thus involves a social transformation that is inherent to the bottom-up epistemological, methodological and policy approach to which this dissertation contributes.

In addition to the social transformative potential that results from improved understanding and critique, this research constitutes an invitation for organisations, both in their role as regulators and as building commissioners, to nurture trust instead of legitimacy and to contribute to good governance (Weiss 2000; Fukuyama 2001). Re-incorporating the context of practice through caring and learning framings that transparently refer to how the organisation integrates the practice of saving and promotes its reproduction amongst the public (Janda and Topouzi 2015) amounts to re-politicising energy-saving practices. Moreover, by shifting from legitimacy-seeking to trust-building, organisations would avoid exposure to changing public values and priorities which are considered to deter some of the former from conducting and publicizing pro-environmental activities (Geels 2010). By increasing the scrutiny of organisations and engaging them in transparently and consistently co-producing practice, this research opens the way to good governance as proposed by Weiss (2000) and Fukuyama (2001). This is important, because it counters the populist, legitimating function and de-politicising effect of policies that rely on conceptually-reductionist technological problematisations of the energy saving problem and practice found to be common in the EU and in Barcelona, and reported in global governance (Swyngedouw 2010, 2011). Ultimately, re-engaging public and scholarly critique with the meaning of energy-saving buildings and other practices implies re-



politicising debates about the consensual policy goals common to environmental debates, “closed down” through expert conceptualisations (Stirling 2007). Re-politicising energy-saving practices is particularly relevant amidst the contemporary rise of post-politic narratives and populist politics.

Far from intending to construct a romanticizing conception of laymen public and knowledge in the production of practice, the theoretical framework inspired by Lefebvre’s *Production of Space* (1991) supports a dialectical understanding of the underlying relations. These dialectics involve: a) public demand for responses to contemporary energy concerns; b) populist utilization by organisations of socially accepted values, which finds the way paved through the “energy addiction” of the public (Healy 2014).<sup>131</sup> These dialectics result in the legitimation of official practices and knowledge that reduce energy saving to the deployment of innovative technology in singular exemplars (i.e. Lefebvrian monuments). The prevalence of positivist epistemologies and public unwillingness to engage with a practice represented as burdensome explains how the appraisal of contradictions does not result in widespread and explicit social criticism. On the contrary, the study of official representations in and about the case-study buildings shows the risk that organisations increasingly rely on empty of meaning values of aesthetics and technological innovation instead of politicising – by putting into the context – their energy-saving practices. Activating the epistemologies and practices of everyday therefore requires re-politicising the practice of energy saving and countering its populist utilization by organisations.

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<sup>131</sup> Healy (2014) explains the process of elite legitimation as closely related to laymen alienation. Laymen are prone to believing that elite practices are sufficient because this belief relieves them of the responsibility of engaging with practices that are represented as burdensome. A similar claim is part of arguments by Talus regarding the EU’s reliance on energy efficiency as the main conceptualisation of energy saving (2013).

## 9.2. Recommendations for exemplary building policies

The empirical evidence presented herein shows that a challenge for the policies studied is to foster the everyday (re)production of meaning and practices. From policy-making and building-commissioning, this involves framing buildings and practices in a context of practice. Such a reframing would potentially expose public policies and the practices of commissioning organisations to public scrutiny. As a result, the following policy recommendations require valiant policy engagement with fostering an appropriate practice that involves transforming the relations between organisations and the public. To this contributes, as shown in Section 9.1, the social critique proposed herein, and is incentivised by the potential advantages of fostering trust and good governance, ultimately contributing to develop the social capital of organisations.

The epistemological and practical implications of contextualising energy-saving practices continue to be disregarded in EU Directive 2018/844 that amends EU directives on the Energy Performance of Buildings (2010), and on Energy Efficiency (2012). For instance, there is no requirement for the Certificate-related labels – intended for public display – to contextualise the current consumption as compared to that of other buildings nor to state the potential savings, as resulting from recommendations in the certificate (Figure 10 and Figure 11). This constitutes a missed opportunity to enable comparison with the credentials of other buildings and to ponder the magnitude of the potential savings in the building, overall, enabling meaning-making. Comparability is also countered by limited monitoring and control of the certification processes. As shown in Section 5.2, this has resulted in the depreciation and limited credibility of the instrument, along with low assessment costs and distorted ratings in Spain, making future official and quotidian comparison unreliable. Also counter to the interests of comparability, during the research period there was no publicly available database about the certificates and practices in the

buildings of the Catalan Government and Barcelona Council (Sections 5.2 and 5.3).<sup>132</sup> New requirements on monitoring and database maintenance, introduced in Article 6a of amending Directive 2018/844, continue to lack epistemological recognition of everyday meaning-making. The restriction of communication requirements to the display of certificates in the interior of regulated commercial buildings is also problematic. This has enabled, for instance, Endesa to withdraw information about its building's performance when found to perilously attract public attention towards its practice (Section 6.1). There is therefore the potential for policies to further regulate the communication and especially the contextualisation of practices.

The following five recommendations address the contextualisation of practices. They are applicable to the formulation and implementation of the EU requirement that commercial buildings should exert an exemplary function, but also to the policies of governments and corporations in terms of their fostering the role of commercial buildings in co-producing the meaning and reproduction of an appropriate practice of energy saving:

1. *Explicitly acknowledge the role of commercial buildings in co-producing meaning, and hence everyday epistemologies.* Saving energy and protecting the environment are central shared values of the EU, and a core justification of the EU directives regulating the exemplary role of buildings. Policies like the EU exemplary requirements need to appeal to the *consistency of practice* as part of the principles of good governance – fostering transparency, accountability and positive social change, hence framing practices in their material and social *integration*, and their *replicability*. By contextualising energy-saving practices, the resulting policy

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<sup>132</sup> The capacity of comparative databases to make organizations accountable was shown in Chapter 5 for the Catalan Government which has postponed the development of these databases. Reasons put forward by expert publics (Chapter 7) include avoiding scrutiny regarding the limited performance of its buildings, the limited implementation of energy saving measures, and diverting attention from the ongoing privatisation of government buildings during the financial crisis.

instruments would overcome the problematic confusion (discussed in Section 2.3) with those of procurement and demonstration. This epistemological change would require intensive communication to organisational cadres and experts in charge of building commissioning, integrating energy-saving practices, and communication.

2. *Include provisions on communication.* Most laymen publics and multiple experts are unfamiliar with exemplary regulations and the policy efforts of coherence, integration and replication. These are not referred to in the reviewed awareness-building campaigns of the Barcelona City Council (Section 5.3.3). These campaigns should include reflection on the practices conducted by organisations, thereby boosting credibility, trust, and replication, whilst opposing reliance on legitimating strategies based on singular buildings and innovative technologies. Also, the rationale of exemplary policies and practices (Recommendation # 1) could be the standfirst of certificates and label documents. To address non-user publics, labels should also be displayed outside buildings and on official online communications about the buildings and the energy saving practice of organisations.
3. *Enforce certificate verification and redesigned databases and labels.* These measures would foster the credibility of energy saving claims, enabling sensible comparison between buildings and hence public meaning-making and scrutiny. Databases and label requirements could compare the building exemplar to average commercial buildings of the same typology and year of construction to other buildings from the same organisation, and to residential buildings, hence contextualising ratings to enable meaning-making.<sup>133</sup> A display using labels of comparable units like energy consumed per square meter and year would also ease comparison. Overall, by

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<sup>133</sup> Adding contextual information to certificates and labels could be criticized for overcrowding the public with information. However, the new Directive shows that there is room for additional criteria by introducing new provisions like “rating the smart readiness of buildings” (Article 8, paragraph 10).

enabling comparison, these tools would counter the legitimating function of unverified and decontextualised claims about singular buildings (i.e. *hero stories* and *greenwashing*), and the resulting public alienation demonstrated in this research.

4. *Communicate actual consumption, which could be detailed per energy use and involve the display of current consumption.* Periodically contrasting the certified ratings with the readings of consumption and generation meters would improve the credibility of saving claims, like those in EU Energy Performance Certificates, and could feed in to their verification (Recommendation # 3).<sup>134</sup> Moreover, breaking down forms of energy use – as available on the certificates of some countries (Figure 11), but not in the displayed labels and not required by the EU directives – would help the public to learn about: a) the domains in which there is significant potential for saving in the building, and b) what practices are relevant in this, ultimately facilitating c) learning and replication. There is also the potential for displaying current and annual consumption and generation in commercial buildings, as initiated by the Barcelona City Council, and expected by some publics.<sup>135</sup> These measures would make experts and commissioning organisations accountable for their rating claims, hence fostering appropriate managements, behaviours and designs, potentially replicable by the public<sup>136</sup>
5. *Incorporate interpretive assessment into the deployment of policies.* Interpretive assessment would acknowledge everyday epistemologies, fostering epistemological transformation in policies and allowing them to address what is important for the publics thus targeted. However, the public opinion on the deployment of policies like

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<sup>134</sup> The cost of this measure could be low if based on meter readings of consumption and generation (where feed-in tariffs are in place) that are available on energy bills.

<sup>135</sup> This measure was timidly carried out in some Barcelona Council buildings during the field research and later integrated with the arrival to office of a leftist party which further deployed monitoring screens and made available online the energy consumption and generation of monitored buildings.

<sup>136</sup> In the cases that were studied, adequate designs would involve avoiding translucent southern facades, maladjusted to the local climate of Barcelona, and adequate space allocation and partitioning.

EU Energy Performance Certificates and exemplary buildings has not been not assessed in Eurobarometer reports, nor in research commissioned to inform amending Directive 2018/844 (European Commission 2017; Boermans et al. 2015).

Some of these recommendations have already been addressed in amending Directive 2018/844 – such as increased verification and the production of databases. Also, the Barcelona City Council has improved, during the Leftist turn initiated in 2015, the integration of the transparent communication of existing practices into overall and educational communication, thereby creating an opportunity for longitudinal study (Section 8.5). However, the EU directives, as with the studied buildings and local policies in place during the field research, show that there is room to frame the related buildings in the context of practice, fostering the (re)production of an appropriate practice instead of granting a patina of legitimacy to organisations and to reductionist conceptualisations and practices.

My recommendations can be summarized as addressing the production of a consistent practice, framing energy-saving practices in a context that enables everyday meaning making, as well as more transparent governance. In addition to commissioning buildings that are coherent with accepted energy saving values, the related practices need to be integrated into the material and social practice of the organisation, showing that the organisation cares, thereby fostering credibility and trust, and in the context of replication to foster learning. Instead of assessing and communicating the technological means that are in place, disregarding actual consumption and savings, and fostering a practice from which the public is alienated, commercial building policies need to engage with the everyday production of meaning to enable the (re)production of an appropriate practice.

### 9.3. Avenues for further research

My study constitutes a novel avenue for studying commercial buildings as co-producers of the practice that residential consumers and other publics are expected to reproduce. It constitutes an exercise of *reframing* (van Hulst and Yanow 2014) the energy saving problem, shifting attention away from the public for failing to reproduce certain practices towards policy-makers and organisations for failing to produce appropriate practice (Lutzenhiser 2014). The theoretical, methodological and policy contribution of this dissertation (Sections 8.3-8.6) enables such scholarly engagement with the policy and practice of organisations; one that is necessarily critical. The critique proposed herein is legitimate, pragmatic and powerful because, as opposed to most applied critique which relies on scholarly assumptions about the discursive effects of official narratives and expert conceptualisations, it engages empirically with the epistemology of those targeted by policies and practices. In doing so, it amplifies the critique of everyday that remains tacit within the epistemological dominance of positivist and post-structuralist knowledge that denies the role of the public in meaning-making, and which I find underlies the public alienation with the official practice which expert knowledge co-produces and communicates.

Scholarly research that assesses and informs energy saving policies and practices should address how everyday meaning-making appeals to the consistency of practice. The study of consistency is operable through the study of the conceptual, material and social domains of practice. There is also an avenue for critical research to push organisations to produce appropriate practice by making them accountable for the meanings their buildings co-produce – further contributing to countering the epistemological grounds of assuming that practices are politically neutral. This sort of critique can make organisations accountable for failing to produce a consistent and hence compelling practice. This implies

generating horizontal, participative and transparent mechanisms of public scrutiny and engagement. It makes organisations accountable not for what they represent, but for how they are appraised, allowing a critique of representations that potentially mislead the public into assuming a consistency of practice that for Lefebvre (1991) is illusory. Analytically, addressing the contradictions of practice as appraised in everyday would encourage organisations to pursue trust and positive social change, instead of legitimacy, by demonstrating that they care about saving energy and about fostering learning.

The avenues for assessment and critique that this dissertation enable are important because organisations are currently not liable for the meaning of their buildings and energy-saving practices. The latter speaks for voluntary action, aligned with socially accepted values regarding saving energy, while there is presently no social movement or policy approach to changing this situation because there is no convention about how practices co-produce meaning. As a result, critical reviews of corporate social responsibility would benefit from explicitly engaging with everyday meaning-making. This would serve to incorporate and apply the definition of greenwashing to those practices that produce an illusory consistency of practice by relying on a hero framing of singular buildings and innovative practices. The contributions of discourse analysis, urban geography, marketing studies and architecture are expected to benefit from the analytical approach hereby proposed and to leverage the will of corporations and local governments to produce added value for their products, services and cities. These avenues of research need to maintain the pluralist and interpretive basis that is proposed to maintain their epistemological legitimacy. This is necessary for furthering policy-informative empirical knowledge about what contradictions matter, how they deter public engagement with practice, and how illusory coherence is produced. They need to maintain a radical stance towards the



epistemological and political causes that are at the roots of everyday meaning-making being marginalized in official representations of energy saving practice.

## 9.4. Final reflections

This thesis has described, in short, my journey as an engineer working as a sustainable energy policy analyst. It started with an introspective analysis of my reaction to what seemed to me to be contradictory messages about what normal energy consumption is in the practices and communications of governmental, non-governmental and corporate organisations. The policy instruments of demonstration and procurement seemed then to me, like now, to fall short in reflecting on and addressing these contradictions and thereby had the effect of countering efforts to convene a compelling message for the public. The official policy message about saving energy seemed contradictory, with the practices of government buildings, infrastructure projects and public TV messages normalizing current and even higher energy needs (as argued also by Shove and Walker 2014). I also found contradictory the practices of corporate and non-governmental organisations like those contacted in the preliminary research stages whose core activities or corporate responsibility claims involve caring about the environment and fostering pro-environmental values and practices. Through my research, I was able to understand that the silences and contradictions in the official representations that are indifferent to everyday meaning-making are not coincidental. This exclusion appears to respond to deep-rooted epistemological and political factors, and is relevant for a diversity of publics – both laymen and experts – which can become alienated from, if not critical of, official practice.

In my understanding, if there is one problem that is receiving limited attention, and one that needs to be prioritized in any sensible policy attempt to compel the public to save energy, it is the marginalization of everyday meaning-making, because this alienates the

public and counters the (re)production of an appropriate practice. As far as exhortations to the public to save energy are contradicted by policies and practices in government buildings, infrastructure projects and public TV; as far as non-government organisations consider that their practice(s) of energy saving – and other practices outside of the pro-social and pro-environmental scope – are neutral; and as long as corporate organisations understand that they are not accountable for the meaning co-produced by their practices, the credibility of energy saving messages will potentially be found to be hypocritical in the inner fora of the public (in consonance with Jackson 2009, 11). There is therefore a need and potential for scholars and citizens to engage with everyday critique to make organisations more accountable for the misleading and counterproductive meaning of their practices, to counter dominant knowledges, to displace contradictory messages, and for *practice* to escape the realm of a *representation*. The current momentum that has its roots in environmental, energy security, climate and social inequality concerns need not be dismissed by scholarly, policy and civil criticism as means of pursuing significant energy savings through social transformation – i.e. of practice. The tools that are hereby provided should contribute to re-politicising practices beyond the domain of energy saving by unleashing the transformative power that lies in everyday meaning-making to push and enable organisations, policy-makers and experts to consistently foster positive change. This is of fundamental importance amidst the current rise in populism, and its reliance on post-political representations

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# Appendices

## 1. Public events attended: local workshops, conferences and guided visits

### Public presentation of the *Efficient Block* competition – BB Construmat (Construction Congress). Barcelona 13 May 2015

	Presenter name	Organisation	Position	Speaks about
1	Lorenzo Viñas	Col·legi d'Administradors de Finques de Barcelona-Lleida	Manager	<i>Efficient Block</i>
2	Carles Sala	Generalitat de Catalunya, Agència Habitatge	Secretary	<i>Efficient Block</i>
3	Lorenzo Viñas	Col·legi d'Administradors de Finques de Barcelona-Lleida	Manager	<i>Efficient Block</i>

### Debate for experts: Government strategies to revitalize the city – BB Construmat (Construction Congress). Barcelona 20 May 2015

	Presenter name	Organisation	Position	Speaks about
4	Miguel Ángel Díaz	Facultad de Tecnología y Ciencia UCJC	Dean	Urban sustainability
5	Multiple participants			Urban sustainability

### Debate for experts: Project Build UPON – BB Construmat (Construction Congress). Barcelona 20 May 2015

	Presenter name	Organisation	Position	Speaks about
6	Emilio Miguel Mitre	GBCe (Green Building Council España)	Director International Affairs	Energy certification
7	Dolores Huerta	GBCe (Green Building Council España)	Technical secretary	Energy certification
8	Dan Sztaniaszek	BPIE, Project Build Upon	Senior Researcher	Energy certification

**Debate for experts: Financial Support to Rehabilitation (in Spain) – BB Construmat (Construction Congress). Barcelona 20 May 2015**

	Presenter name	Organisation	Position	Speaks about
9	Fernando García	Spanish Ministerio de Fomento- IDAE (Energy Institute of Energy)	Head residential and buildings unit	Spanish policies
10	Lluís Morer	Catalan Government- ICAEN (Institut Català de l'Energia)	Head of energy efficiency unit	Spanish policies
11	Ivan Capdevila	Estudi Ramon Folch	CEO	Spanish policies

**Conference for experts: Catalan Government Strategies for Energy Efficiency – BB Construmat (Construction Congress). Barcelona 22 May 2015**

	Presenter name	Organisation	Position	Speaks about
12	Mercè Rius	Catalan Government - ICAEN (Institut Català de l'Energia)	Director	Catalan policies
13	Marta	Catalan Government- ICAEN (Institut Català de l'Energia)	-	Catalan policies
14	Àlex Ciurana	PGI-ACTECIR	Engineer	Catalan policies

**Debate for experts: Dissemination of good practices in architecture – Congress Architecture and Health, COAC. Barcelona, 22 May 2015**

	Presenter name	Organisation	Position	Speaks about
15	Toni Solanas	Group Sustainability and Architecture (AUS) of COAC	Co-Founder, Architect	Architecture and health
16	Celia Galera	Habitat Futura	Coordinator of the <i>Efficient Block</i> project	Efficiency gap, <i>Efficient Block</i>
17	Toni Marín	Ecohabitar (Magazine)	Director	Residential housing, bioconstruction

**Workshop for *Efficient Block* dwellers – Secretaria de Joventut. Barcelona 25 May 2015**

	Presenter name	Organisation	Position	Speaks about
18	Celia Galera	Habitat Futura	Coordinator of the <i>Efficient Block</i> project	<i>Efficient Block</i>
19	Lorenzo Viñas	Col·legi d'Administradors de Finques de Barcelona-Lleida	Manager	<i>Efficient Block</i>
20	Carles Sala	Generalitat de Catalunya, Agència Habitatge	Secretary	<i>Efficient Block</i>
21	Victor Barbastre	Barcelona Gestió Urbanística (Council Company)	Technical architect and organisational expert	<i>Efficient Block</i>
22	Multiple participants (26 attendees)		Dwellers at the <i>Efficient Block</i>	<i>Efficient Block</i>

**Guided visit for citizens: Solar panels at the Cemetery of Les Corts – Barcelona Energy Week. Barcelona 17 June 2015**

	Presenter name	Organisation	Position	Speaks about
23	Sandra Rodríguez	BCN City Council- <i>Fabrica del Sol</i>	Education official	Renewable generation
24	Elisabet Gallardo	BCN City Council - Agència de l'Energia de Barcelona	Technical officer	Technical and policy problems generation
25	Two anonymous staff members	BCN City Council- Cemetery de les corts	Staff	Renewable generation

**Workshop for citizens: Use of renewable energies at home – *Fabrica del Sol*, conference hall  
- Barcelona Energy Week – Barcelona 17 June 2015**

	Presenter name	Organisation	Position	Speaks about
26	Sandra Rodríguez	BCN City Council - <i>Fabrica del Sol</i>	Education official	<i>Fabrica del Sol</i>
27	Josep	BCN City Council- <i>Fabrica del Sol</i>	Education official	<i>Fabrica del Sol</i>
28	Aniol Esquerra	Ecoserveis	CEO	<i>Fabrica del Sol</i> – Spanish policies

**Guided visit for citizens: Use of renewable energies in the Olympic swimming pool – Piscines Picornell – Barcelona Energy Week – Barcelona 18 June 2015**

	Presenter name	Organisation	Position	Speaks about
29	Fermí Muñoz	BCN City Council- Agencia de l'Energia de Barcelona	Technical officer	public buildings

**Guided visit for citizens: Solar Pergola at the Parc del Forum – Barcelona Energy Week – Barcelona 19 June 2015**

	Presenter name	Organisation	Position	Speaks about
30	Llorenç Escudero	TERSA (Metropolitan RES energy and residue valuation public company)	Engineer	Renewable generation in Barcelona

**Guided visit for citizens: Smart city systems in Passeig de Gracia - Barcelona Energy Week – Barcelona 19 June 2015**

	Presenter name	Organisation	Position	Speaks about
31	Cristina Miró	BCN City Council- Institut Municipal d'Informatica	Technical expert	Smart city operation

## 2. Protocol pre-arranged interviews



**Doctoral research of Sergi Moles – Central European University (Budapest)  
Citizen perception of energy use and policies in commercial buildings**

Respondent: \_\_\_\_\_

0. *Only in case I don't have background information on the respondent:  
What is, in your opinion, the future of energy saving in buildings?*
  
1. *Why efficient/ sustainable/ self-sufficient/else (mention the one used by respondent or in their organisation communications) buildings?*
  
2. *How do efficient/ sustainable/ self-sufficient/ else (mention the one used by respondent) buildings communicate energy management values to users and citizens?*
  
3. *What is, in your opinion, the role of government buildings in current energy management practices? And the role of corporate buildings? How could it be improved, if at all?*
  
4. *Why exemplary/ demonstration/ else (mentioned) role in XY buildings? (only if mentioned above or in organisation site)*
  
5. *Why certification? Why this type of certification? (if mentioned above or in organisation site)*
  
6. *How does this building represent current or past energy policies?*

## **Project description and use of the evidence provided**

The research object of this invitation is my doctoral research project, funded by the Central European University (CEU) in Budapest. The research topic is the role that buildings play in people's understanding of energy use and policies, in Barcelona and in the European Union. Your opinion as decision maker, expert, user and/or citizen related to a reduced group of selected buildings would be crucial for this research.

The ultimate product of this research is a PhD thesis. Other potential forms of publication are papers -in academic journals and conference proceedings-, as well as presentations in academic conferences. I will only use the information you share with me, your name or any other personally identifiable details with your consent, and only for the purposes stated above. Please also note that you may opt to withdraw this consent at any stage. These and other considerations are part of the CEU Ethical Research Guidelines (available in: [http://archive.ceu.hu/sites/default/files/G-1012-1v1211\\_Ethical\\_research\\_guidelines\\_final.pdf](http://archive.ceu.hu/sites/default/files/G-1012-1v1211_Ethical_research_guidelines_final.pdf)), to which I subscribe.

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## **Consent to use the evidence accessed for the purposes described above**

\_\_\_ You may share the information just as I provided it. No details need to be changed and you may use my real name when using the evidence provided in publications or presentations

\_\_\_ You may share the information just as I provided it; however, please do not use my real name. I realize that others might identify me based on the evidence provided, even though my name will not be used

\_\_\_ You may share the information I provided; however, please do not use my real name and please change details that might make me identifiable to others.

Respondent's name and signature \_\_\_\_\_ Date \_\_\_\_\_  
Contact \_\_\_\_\_

### 3. Protocol on-the-spot interviews

Respondent's relationship with building \_\_\_\_\_

1. What do you think about this building?

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2. What do you think about energy use in this building?

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How do you think *this* (refer to respondent's answer) is revealed in the building?

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3. Do you believe that these/ other energy management measures/features should be widely introduced in...

a. ...government buildings? Which measures and why?

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b. ...corporate buildings? Which measures and why?

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c. ...private housing? Which measures and why?

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## **Project description and use of the evidence provided**

The research object of this invitation is my doctoral research project, funded by the Central European University (CEU) in Budapest. The research topic is the role that buildings play in people's understanding of energy use and policies, in Barcelona and in the European Union. Your opinion as decision maker, expert, user and/or citizen related to a reduced group of selected buildings would be crucial for this research.

The ultimate product of this research is a PhD thesis. Other potential forms of publication are papers -in academic journals and conference proceedings-, as well as presentations in academic conferences. I will only use the information you share with me, your name or any other personally identifiable details with your consent, and only for the purposes stated above. Please also note that you may opt to withdraw this consent at any stage. These and other considerations are part of the CEU Ethical Research Guidelines (available in: [http://archive.ceu.hu/sites/default/files/G-1012-1v1211\\_Ethical\\_research\\_guidelines\\_final.pdf](http://archive.ceu.hu/sites/default/files/G-1012-1v1211_Ethical_research_guidelines_final.pdf)), to which I subscribe.

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Respondent's name and signature \_\_\_\_\_ Date \_\_\_\_\_  
Contact \_\_\_\_\_

## 4. Interviews conducted

### 4.1. Pre-arranged interviews

No.	Primary role	Location	Date	Refers to
1	Four transition activists	Cafe	2-Jan-14	Council buildings
2	Sabadell Council official from sustainability	Phone	3-Jan-14	Council buildings
3	Sabadell Council communication official and smart city coordinator	Phone	3-Jan-14	Council buildings
4	Province official of sustainability	Phone	23-Jan-14	Council buildings
5	Expert EU energy and climate policy	Conference site	8-May-14	Exemplary policies, commercial buildings
5	Expert local building energy policies	Conference site	9-Sep-14	Exemplary policies, commercial buildings
6	Expert energy-efficient building policies	Restaurant	10-Sep-14	Exemplary policies, commercial buildings
6	Senior Expert EU energy policies	Conference site	11-Sep-14	Exemplary policies/ commercial buildings
7	Senior expert EU Policy	Conference site	11-Sep-14	Exemplary policies, commercial buildings
8	Council official from the Barcelona Energy Agency #1	Offices of the Barcelona Energy Agency	8-Aug-14	<i>Fabrica del Sol</i>
9	Council Official from the Barcelona Energy Agency #2	Offices of the Barcelona Energy Agency	8-Aug-14	<i>Fabrica del Sol</i>
10	Education official of <i>Fabrica del Sol</i> #1	<i>Fabrica del Sol</i>	13-Aug-14	<i>Fabrica del Sol</i>
11	Education official of <i>Fabrica del Sol</i> #2	<i>Fabrica del Sol</i>	13-Aug-14	<i>Fabrica del Sol</i>

No.	Primary role	Location	Date	Refers to
12	Senior expert renewable energy policy and practice in Spain	Restaurant	4-Jun-14	Commercial buildings
13	Education official of <i>Endesa</i>	Endesa Educa	23-Sep-14	<i>Endesa</i>
14	Communication official of <i>Endesa</i>	Endesa Educa	23-Sep-14	<i>Endesa</i>
15	Independent architect	Interviewee's offices	24-Sep-14	Residential buildings
16	Senior official of the Barcelona Housing Institute	Interviewee's offices	25-Sep-14	Social housing (Council)
17	Architect involved in Endesa Pavilion (2011)	IAAC	25-Sep-14	Commercial buildings
18	Independent architect and PassivHaus proponent	Parking lot	25-Sep-14	Commercial buildings
19	Architect involved in <i>Endesa</i> building	Interviewee's offices	25-Sep-14	<i>Endesa</i>
20	Architect organizing Endesa Awards to sustainable buildings (2007-2014)	Bar	25-Sep-14	Commercial buildings
21	Barcelona Council official from logistics and maintenance	Meeting room at their offices	26-Sep-14	Council buildings
22	Barcelona Council official from logistics and maintenance	Meeting room at their offices	26-Sep-14	Government (Council) buildings
23	Architect involved in <i>Fabrica del Sol</i>	Interviewee's home-office	26-Sep-14	<i>Fabrica del Sol</i>
24	Renewable energy activist and expert #1	Bar	26-Sep-14	Government (Council) buildings
25	Renewable energy activist and expert #2	Bar	26-Sep-14	Government (Council) buildings
26	Local Council architect, Senior representative of the Group of Architects in Public Administration Service (part of Catalan Architect Guild)	Viber call	1-Oct-14	Government buildings
27	Academic expert on smart cities	Interviewee's office	5-Mar-15	Government buildings
28	Expert involved in the exhibition design at <i>Fabrica del Sol</i>	Skype call	9-Oct-14	<i>Fabrica del Sol</i>

No.	Primary role	Location	Date	Refers to
29	Communication official of a supplier company of the <i>Endesa</i> building	Skype call	30-Sep-14	Endesa
30	Architect participant in the <i>Efficient Block</i> #1, member of the Energy Efficiency Cluster of Catalonia	Meeting room in interviewee's office	11-May-15	<i>Efficient Block</i>
31	Architect participant in the <i>Efficient Block</i> #2, member of the Energy Efficiency Cluster of Catalonia	Meeting room in interviewee's office	11-May-15	<i>Efficient Block</i>
32	Architect participant in the <i>Efficient Block</i> #3	Meeting room in interviewee's office	13-May-15	<i>Efficient Block</i> , other commercial buildings
33	Council Official for <i>Fabrica del Sol</i>	Offices of Urban Habitat	13-May-15	<i>Fabrica del Sol</i>
34	Architect at a supplier company #1	Construmat Exhibition	19-May-15	Commercial and residential buildings
35	Internationally recognised architect	Meeting room at Construmat Exhibition	20-May-15	Commercial buildings
36	Independent technical architect	Construmat Exhibition	19-May-15	Commercial buildings
37	Engineer- Energy Auditor PassivHaus	PassivHaus stand at Construmat	21-May-15	Commercial buildings
38	Commercial director of building material supplier company	Interviewee's company stand at Construmat	20-May-15	Commercial buildings
39	Engineer representing the Green Building Council Spain (GBCe)	GBCe stand at Construmat	21-May-15	Commercial buildings
40	Sales official of material supplier company	Company's meeting room	21-May-15	Commercial buildings
41	Building administrator at condominium in the <i>Efficient Block</i>	Company's meeting room	23-May-15 & 29-May-15	<i>Efficient Block</i> , residential buildings
42	Representative of Habitat Futura	Phone call	25-May-15	<i>Efficient Block</i>
43	Architect at a supplier company #2	Interviewee's office	26-May-15	Commercial buildings, <i>Media-ICT</i> , <i>Fabrica del Sol</i> , Endesa, commercial buildings
44	Sustainability expert at commercial building supplier company	Company's meeting room	28-May-15	Commercial buildings
45	Renewable energy expert at <i>Fabrica del Sol</i> #1	Opposite <i>Fabrica del Sol</i>	28-May-15	<i>Fabrica del Sol</i> , government buildings

No.	Primary role	Location	Date	Refers to
46	Architect participant in the <i>Efficient Block</i> competition #4	Terrace	29-May-15	<i>Media-ICT, Efficient Block, government buildings</i>
47	Local sustainable transition expert and activist	WhatsApp call	2-Jun-15	<i>Fabrica del Sol, government buildings</i>
48	Architect involved in <i>Fabrica del Sol</i>	Interviewee's office	15-Jun-15	<i>Fabrica del Sol, commercial buildings</i>
49	Council Official from Urban Habitat #1	Urban Habitat	16-Jun-15	Council buildings
50	Council Official from the Barcelona Energy Agency #1	Offices of Barcelona Energy Agency	17-Jun-15	Council buildings, <i>Fabrica del Sol</i>
51	Council Official from the Barcelona Energy Agency #2	Offices of Barcelona Energy Agency	17-Jun-15	Council buildings, <i>Fabrica del Sol</i>
52	Architect involved in <i>Media-ICT</i>	<i>Media-ICT</i>	17-Jun-15	<i>Media-ICT</i>
53	Senior representative of the Catalan Housing Agency #1	Offices of the Catalan Housing Agency	19-Jun-15	<i>Efficient Block, government buildings</i>
54	Senior representative of the Catalan Housing Agency #2	Offices of the Catalan Housing Agency	19-Jun-15	<i>Efficient Block, government buildings</i>
55	Engineer, Senior representative of the Energy Efficiency Cluster of Catalonia	Cafe	22-Jun-15	<i>Efficient Block, Endesa, Council buildings</i>
56	Renewable energy expert at <i>Fabrica del Sol</i> #2	Lunch room	22-Jun-15	<i>Fabrica del Sol, Efficient Block, Media-ICT</i>
57	Senior education executive at <i>Fabrica del Sol</i>	<i>Fabrica del Sol</i> educational facilities	23-Jun-15	<i>Fabrica del Sol</i>
58	Council Official from Urban Habitat #2	Urban Habitat	23-Jun-15	Council buildings
59	Senior engineer involved in design of <i>Media-ICT</i> and <i>Endesa</i>	Meeting room at interviewee's office	25-Jun-15	<i>Media-ICT, Endesa, commercial buildings</i>
60	Senior efficiency representative from the Catalan Institute of Energy (ICAEN)	Meeting room of ICAEN	25-Jun-15	Government buildings, <i>Efficient Block</i>
61	Senior representative of the Barcelona Electricians' Guild	Interviewee's office	26-Jun-15	Commercial buildings
62	Senior representative of the Guild of Licensed Property Administrators of Barcelona and Lleida	Interviewee's office	30-Jun-15	<i>Efficient Block</i>



## 4.2. On-the-spot interviews

No.	Primary role	Location	Date	Refers to
1	Frequent user of <i>Media-ICT</i> #1 (and industrial engineer)	Opposite the building	11-May-15	<i>Media-ICT</i>
2	First-time user of <i>Media-ICT</i> #1	Opposite the building	11-May-15	<i>Media-ICT</i>
3	Passer-by who works near <i>Media-ICT</i> #1	Opposite the building	11-May-15	<i>Media-ICT</i>
4	Frequent passer-by at <i>Media-ICT</i> #1	Opposite the building	11-May-15	<i>Media-ICT</i>
5	Frequent passer-by at <i>Media-ICT</i> #2	Opposite the building	11-May-15	<i>Media-ICT</i>
6	User-worker at <i>Media-ICT</i> #4	Opposite the building	11-May-15	<i>Media-ICT</i>
7	Maintenance operator of <i>Media-ICT</i>	Opposite the building	11-May-15	<i>Media-ICT</i>
8	Passer-by who works near <i>Media-ICT</i> #2	Opposite the building	11-May-15	<i>Media-ICT</i>
9	User-worker at <i>Media-ICT</i> #5	Opposite the building	11-May-15	<i>Media-ICT</i>
10	First time user of <i>Fabrica del Sol</i> #1	Opposite the building	13-May-15	<i>Fabrica del Sol</i>
11	Frequent passer-by at <i>Fabrica del Sol</i> #1	Opposite the building	13-May-15	<i>Fabrica del Sol</i>
12	Frequent passer-by and neighbour of <i>Fabrica del Sol</i>	Opposite the building	13-May-15	<i>Fabrica del Sol</i>
13	Frequent passer-by at <i>Fabrica del Sol</i> #2	Opposite the building	13-May-15	<i>Fabrica del Sol</i>
14	Frequent passer-by at <i>Fabrica del Sol</i> #3	Opposite the building	13-May-15	<i>Fabrica del Sol</i>
15	First time passer-by at <i>Fabrica del Sol</i>	Opposite the building	13-May-15	<i>Fabrica del Sol</i>
16	User working at the 3D Printing Space of <i>Fabrica del Sol</i> #1	3D Printing Space in La Fabrica (Ground floor)	13-May-15	<i>Fabrica del Sol</i>
17	User working at the 3D Printing Space of <i>Fabrica del Sol</i> #2	3D Printing Space in La Fabrica (Ground floor)	13-May-15	<i>Fabrica del Sol</i>
18	User working at <i>Fabrica del Sol</i> for a subletting organisation #1 and former worker at the <i>Media-ICT</i>	Interviewee's office and meeting room La Fabrica (1 <sup>st</sup> Floor)	13-May-15	<i>Fabrica del Sol</i> ; former user <i>Media-ICT</i>

No.	Primary role	Location	Date	Refers to
19	User working at <i>Fabrica del Sol</i> for a subletting organisation #2	Interviewee's office and meeting room La Fabrica (1 <sup>st</sup> Floor)	13-May-15	<i>Fabrica del Sol</i>
20	User-worker for the Council's environmental education services in <i>Fabrica del Sol</i>	Interviewee's workspace in La Fabrica (Ground floor)	13-May-15	<i>Fabrica del Sol</i>
21	Frequent passer-by who lives near <i>Endesa</i> #1	Opposite the building	18-May-15	<i>Endesa</i>
22	Frequent passer-by who works near <i>Endesa</i>	Opposite the building	18-May-15	<i>Endesa</i>
23	Frequent passer-by who studies near <i>Endesa</i>	Opposite the building	18-May-15	<i>Endesa</i>
24	Frequent passer-by who lives near <i>Endesa</i> #2	Opposite the building	18-May-15	<i>Endesa</i>
25	Frequent passer-by who lives near <i>Endesa</i> #3	Opposite the building	18-May-15	<i>Endesa</i>
26	Frequent passer-by at <i>Endesa</i>	Opposite the building	18-May-15	<i>Endesa</i>
27	User-worker at <i>Endesa</i> #1	Opposite the building	18-May-15	<i>Endesa</i>
28	User-worker at <i>Endesa</i> #2	Opposite the building	18-May-15	<i>Endesa</i>
29	User-worker at <i>Endesa</i> #3	Opposite the building	18-May-15	<i>Endesa</i>
30	User-worker at <i>Endesa</i> #4	Opposite the building	18-May-15	<i>Endesa</i>
31	Tourist passing-by <i>Endesa</i>	Opposite the building	18-May-15	<i>Endesa</i>
32	User-worker at <i>Endesa</i> #5	Opposite the building	18-May-15	<i>Endesa</i>
33	User-worker at <i>Endesa</i> #6	Opposite the building	18-May-15	<i>Endesa</i>
34	Neighbour of <i>Fabrica del Sol</i> , member of a civil organisation #1	Opposite the building	27-May-15	<i>Fabrica del Sol</i>
35	Neighbour of <i>Fabrica del Sol</i> , member of a civil organisation #2, visited <i>Media-ICT</i> in the past	Near the building	27-May-15	<i>Fabrica del Sol</i> ; former user <i>Media-ICT</i>
36	Neighbour of <i>Fabrica del Sol</i> , member of a civil organisation #3	Near the building	27-May-15	<i>Fabrica del Sol</i>

No.	Primary role	Location	Date	Refers to
37	Neighbour of <i>Fabrica del Sol</i> , member of a civil organisation #4	Near the building	27-May-15	<i>Fabrica del Sol</i>
38	User-worker at Endesa #7	Opposite the building	22-Jun-15	Endesa HQ
39	User-worker at Endesa #8	Opposite the building	22-Jun-15	Endesa HQ
40	User-worker at Endesa (external expert in network efficiency)	Opposite the building	22-Jun-15	Endesa HQ
41	Frequent passer-by at Endesa, who does sport nearby	Opposite the building	22-Jun-15	Endesa HQ
42	First time user of <i>Fabrica del Sol</i> #2	Opposite the building	23-Jun-15	<i>Fabrica del Sol</i>
43	Passer-by walking dog and sitting opposite <i>Fabrica del Sol</i>	Opposite the building	23-Jun-15	<i>Fabrica del Sol</i>
44	Passer-by at <i>Fabrica del Sol</i>	Opposite the building	23-Jun-15	<i>Fabrica del Sol</i>
45	Teacher who visits <i>Fabrica del Sol</i> with interviewee's students	Opposite the building	23-Jun-15	<i>Fabrica del Sol</i>
47	User who works and lives in the <i>Efficient Block</i>	The staircase and rooftop of the building in <i>Efficient Block</i>	25-May-15	<i>Efficient Block</i>
48	User who works at the <i>Efficient Block</i>	Interviewee's office in <i>Efficient Block</i>	25-May-15	<i>Efficient Block</i>
49	User who lives in the <i>Efficient Block</i> #1	Entrance of building in <i>Efficient Block</i>	25-May-15	<i>Efficient Block</i>
50	User who lives in the <i>Efficient Block</i> #2	Staircase of building in <i>Efficient Block</i>	25-May-15	<i>Efficient Block</i>
51	User who lives in the <i>Efficient Block</i> #3	Entrance of building in <i>Efficient Block</i>	25-May-15	<i>Efficient Block</i>
52	First-time user of <i>Media-ICT</i> #2	Opposite the building	26-May-15	<i>Media-ICT</i>

No.	Primary role	Location	Date	Refers to
53	Frequent passer-by at <i>Media-ICT</i> #3, who works nearby	Opposite the building	26-May-15	<i>Media-ICT</i>
54	First time user of <i>Media-ICT</i> #3	Opposite the building	26-May-15	<i>Media-ICT</i>
55	Frequent user of <i>Media-ICT</i> #2	Opposite the building	26-May-15	<i>Media-ICT</i>
56	User-worker at <i>Media-ICT</i> #1	Opposite the building	26-May-15	<i>Media-ICT</i>
57	User-worker at <i>Media-ICT</i> #2	Opposite the building	26-May-15	<i>Media-ICT</i>
58	User-worker at <i>Media-ICT</i> #3	Opposite the building	26-May-15	<i>Media-ICT</i>
59	Tourist visiting <i>Media-ICT</i>	Opposite the building	26-May-15	<i>Media-ICT</i>
60	Tour-guide of BCN Activa, frequently visits <i>Media-ICT</i>	Opposite the building	26-May-15	<i>Media-ICT</i>
61	Frequent user of <i>Media-ICT</i> #3	Opposite the building	26-May-15	<i>Media-ICT</i>
62	User-worker for a start-up at <i>Media-ICT</i>	Opposite the building	26-May-15	<i>Media-ICT</i>
63	User, receptionist at <i>Media-ICT</i> #1	Interviewee's desk ( <i>Media-ICT</i> ground floor)	28-May-15	<i>Media-ICT</i>
64	Receptionists at <i>Media-ICT</i> #2 & #3	Their desk at Cibernarium ( <i>Media-ICT</i> first floor)	28-May-15	<i>Media-ICT</i>
65	User-worker at a council library	His office at the library	30-Jun-15	City Council Library
66	User and maintenance manager of a council library	Interviewee's office at the library	30-Jun-15	City Council Library
67	President of a condominium at the <i>Efficient Block</i> #4	Phone call	30-Jun-15	<i>Efficient Block</i>

## 5. List of initial codes

EMERGING THEMES- EMPIRICAL	Pol. Admin Financial Barriers	Prob. Health
Building award winning	Pol. Bureaucracy	Prob. Information
Building beauty	Pol. Capital coherence	Prob. Intrinsic value of technologies
Building benchmarking	Pol. Capital responsible for impacts	Prob. Knowledge
Building Climate	Pol. Coherence	Prob. Leadership
Building design	Pol. Coherence-time	Prob. Life cycle
Building automatism	Pol. Dec. making technocratic	Prob. Lim. Admin resources
Building E. Management	Pol. financing	Prob. EU Energy Performance Certs
Building envelopment	Pol. Implementation	Prob. Market effects sustainable actions
Building Experimental	Pol. lagging ES Politics	Prob. Market value efficiency certs.
Building function	Pol. Legitimacy	Prob. optimization
Building Lighting	Pol. Outsourcing, privatization, rental	Prob. Participation
Building Maintenance	Pol. Public investment	Prob. Private Financing
Building Materials	Pol. Regulation	Prob. Procurement
Building Monitoring & measure	Pol. Responsible administration	Prob. Productivity
Building Passive tech (not PassivHaus)	Pol. Transparency	Prob. Rational decision making
Building show	Pol. Trust by citizens	Prob. Rhythm
Building Reference	EMERGING THEMES- EMPIRICAL: PROBLEMS	Prob. top down space prod
Building systems: lighting, HVAC...	Prob. Awareness	Prob. User (citizen or owner)
Building tractor project	Prob. Branding-Greenwash-Marketing	Prob. Vested interests
Building Use	Prob. Building Quality	Prob. Visibility
Building Vernacular	Prob. Comfort	Prob. Vocal citizens
Building public processes	Prob. Communication	Prob. responsible
Buildings Iconic	Prob. Complexity	EMERGING THEMES-EMPIRICAL: SOLUTIONS
Citizen alienation	Prob. Consumption-consumerism	Term Building energy sustainability
Citizen collaboration	Prob. Culture	Term Reference
Citizen cow	Prob. decision-benefits divide	Term. Bioconstruction
Citizen deception	Prob. Econ. Decision-making	Term. Demonstration
Citizen freedom	Prob. Education	Term. Efficiency
Citizen knows/ responsible decision-maker	Prob. Energy and environment	Term. Energy demand man.
Citizen limited resources	Prob. Energy dependence	Term. Energy retrofitting
Citizens engaged	Prob. Energy poverty	Term. energy saving

Pol Control capital	Prob. EU drive	
Pol.-enterprise network	Prob. governance	
<b>EMERGING THEMES-EMPIRICAL: SOLUTIONS</b>	Theor. prob. Divide abstract-citizen	
Term Exemplary (+) explicit	Theor. prob. Divide life-profession	Citizen User rep by building expert
Term Exemplary (+) implicit	Theor. prob. Divide Pol- Physical	Citizen user rep by citizen
Term Exemplary as Identity building-organisation	Theor. prob. Divide Pol-abstraction	Expert b rep by pol expert
Term. En. Generation	Theor. prob. Divide Pol.-citizenship	Expert rep by Building expert
Term. Innovation	Theor. prob. belief: unity abstract pol	Expert rep by citizen
Term. Intl. certificates and standards	Theor. prob. Divide Building everydaylife?	Pol Capital Rep by Building expert
Term. Life cycle	Theor. prob. Divide Social-environment	Pol Capital rep by citizen
Term. modern	Theor. term belief: unity abstract pol	Pol Capital rep by civil soc./ sust. expert
Term. Network	<b>PROCED. CODES... WHO REPRESENTS WHAT?</b>	Expert rep by citizen
Term. NZEB	Building corp. Rep by corp.	Term Exemplary (-) explicit
Term. Renewables	Building rep by civil soc./ sustainability expert	Term Exemplary (-) implicit
Term. Replicability	Building: other (not public)	Pol Capital rep P expert
Term. Self-sufficiency	Buildings corp. rep by building expert	Pol. Cap. Rep Corp
Term. Simulation	Buildings corp. rep by citizen	Pol. Capital Space production
Term. Smart	Buildings corp. rep by civil soc. /sust. expert	Pol. Rep by Civil soc./ Sust.expert
Term. Social benefit	Buildings corp. rep. by policy expert	Pol. Rep. By Building expert
Term. Super technology	Buildings offices rep by building expert	Pol. Rep. by Citizen
Term. Sustainability	Buildings Govt rep. by civil s/sust expert	Pol. Rep. by Citizen rep by expert
Term. Technology	Buildings Govt Rep by Building expert	Pol. Rep. by pol expert
Term. Transition	Buildings Govt Rep by citizen	Rep. by citizen
Term. Transp., recycling, water...	Buildings Govt Rep. by P. expert	Rep. by expert
<b>EMERGING THEMES- THEORETICAL CODES</b>	Buildings Rep by Building expert.	<b>BUILDING CASES</b>
Building as Production of space	Buildings rep by citizen	<i>Efficient block</i>
Building phys. space divide	Buildings res rep b expert	<i>Endesa</i>
Building Space fracturing division	Buildings res. rep by civil society/sust expert	<i>Fabrica del Sol</i>
Building space production	Buildings res. rep by P. Expert	<i>Media-ICT</i>
Citizen/civil s. spatial prod	Buildings resid. rep by citizen	Building private: other
Two-level game discourse??	Citizen-user rep by corp.	Building government: other
Pol space abolishes civil	Citizen Rep by Building expert	<b>PROCEDURAL CODES, ADDITIONAL</b>
Pol. Abstract space fracture	Citizen rep by buildings	do not quote
Pol. Space (production)	Citizen rep by civil soc./ sust. expert	check quoting reservations
Pol. Space Fracture	Citizen rep. by Pol. Expert	Explicit question

## 6. Government periods in Spain, Catalonia and Barcelona (1983-2017)

	Central Government of Spain (Lead party and Prime Minister)	Regional Government of Catalonia (Lead Party and President)	Local Government of Barcelona (City Council) (Lead Party and Mayor)
1990	PSOE Felipe Gonzalez 1 Dec. 1982 – 4 May 1996	CiU Jordi Pujol Apr. 1980 – Dec. 2003	PSC, Pasqual Maragall 1 Dec. 1982 – 26 Sept. 1997
1995			
2000			
	PP Jose M. Aznar 4 May 1996 – 16 Apr. 2004	PSC Pasqual Maragall Dec. 2003 – Nov.2006	PSC, Joan Clos 26 September 1997 – 8 Sept. 2006
2005			
	PSOE Jose L. Rodriguez-Zapatero 17 Apr. 2004 – 21 Dec. 2011	PSC José Montilla Nov. 2006 – Dec. 2010	PSC, Jordi Hereu 8 Sept. 2006 – 1 Jul. 2011
2010			
	PP Mariano Rajoy 21 Dec. 2011 – 1 Jun. 2018	CiU Artur Mas Dec. 2010 – Jan. 2016	CiU Xavier Trias 2 July 2011 – 13 June 2015
2015			BCN en Comu Ada Colau 13 Jun. 2015- present
2016	PP	CiU Carles Puigdemont Jan. 2016 – Oct. 2017 <sup>137</sup>	
2017			

PSOE: Spanish Socialist Party and PSC: Catalan Socialist Party (part of PSOE)- members of the Party of European Socialists

Barcelona en Comú: Civil Society-based party, associated to Podemos-Podem, member of the European United Left–Nordic Green Left

CiU: Convergence and Union – Catalan Nationalist Christian Democrats, member of the Alliance of Liberals and Democrats for Europe

PP: Popular Party – Spanish Christian Democrat, members of the European People's Party

<sup>137</sup> CiU was refunded as PDeCAT in 2017 - Catalan European Democratic Party– and became an overtly independentist party after scission from Unionist party (UDC), with close ties with Endesa, including the presence of its founder and leader Roca i Junyent in the board of directors.

## 7. Composition of the Barcelona Council Government and major policies during the period 1991-2018

Source: Government composition timeline from Lozano and Manchobas (2017). List of policies elaborated by the author.

Deputy mayors of each party and their attributions in environment <sup>138</sup>	Policies and practices
2 PSC 1 IC (1991-1995)	1985-2007 Program “Barcelona get pretty” building (energy) renovation 1992 Olympic Games, Olympic pool with solar thermal supply 1994 Declaration of Heidelberg to reduce CO2 emissions in 2005 in 20%
3 PSC 1 IC-V 1 ERC (1995-1999)	1995 Signature of Aalborg Charter (to promote Agenda 21) 1996-1999 Local action plan? 1997 Partner of Klima Bundis to reduce CO2 emissions by 2010 in 27% (respect to 1997) 1998 Creation Council of Environment and Sustainability to develop Agenda 21
3 PSC 1 IC-V Comm. of Sust. & Urban Ecology 1 ERC-EV (1999-2003)	1999 <i>Fabrica del Sol</i> 2000 Solar thermal bylaw for buildings enter into force; District 22@ plan 2002-2003 “Barcelona get pretty” focus on environment and sustainability 2001 Government Measure on the Greening of Council Services; Green Office Programme and Guide 2002 Barcelona Energy Improvement Plan (BEIP) & Agenda 21 (Citizen Commitment towards Sustainability), Barcelona Energy Agency (2003):
3 PSC 1 ICV Council of Health & Env., Comm. of Sust. Urban Services & Env., B. Energy Agency 1 ERC-EV (2003-2007)	2004 International Forum of Cultures & Photovoltaic Pergola; 2006 Design of <i>Media-ICT</i> ; Government Measure on the Greening of Local Authority Contracts; + Sustainable City Council Programme; Revision of the Solar thermal bylaw
3 PSC 1 ERC 1 ICV-EUiA- Environment (2007-2011)	2008 Covenant of Mayors; Government Measure on Responsible Contracting 2009/2010 + Sustainable City Council Convention Council Buildings Energy Improvement Plan 2009-2011 (CBEIP) <i>Media-ICT</i> (2011), Plan for Energy, Climate Change and Air Quality of Barcelona 2011-2020 (PECQ March 2011)
5 CiU- Urban planning, infrastructures, housing, environment and information and telecommunication systems (2011-2015)	2011 Macro-department of Urban Habitat encompasses environment and informatics; Basic guide for energy efficiency in Council buildings 2012 Citizen Commitment to Sustainability 2012-2022; Smart City Strategy 2012. Endesa new HQ in Barcelona 2013 Government Measure and Instruction by the Mayor’s office for Responsible Public Procurement with Social and Environmental Criteria 2014 European Capital of Innovation Award; 2014-2015 Debates and renovation in <i>Fabrica del Sol</i> ; 2015 <i>Efficient Block</i> Project; Technical instructions for the application of sustainability criteria
1 Proces C. (BCN en Comu) 3 ICV (BCN en Comu) 2 Podem (BCN en Comu) 1 PSC (after May 2016)	2015 Dept. of Urban Ecology substitutes Urban Habitat Online map of photovoltaic production in Council buildings 2017 Approval of new Sustainability and Building Guidelines

<sup>138</sup> PSC: Catalan Socialist Party (federal part of the Spanish Socialist Party); IC Iniciativa per Catalunya, and ICV Iniciativa per Catalunya-Verds (Eco-Socialists); ERC Esquerra Rep. de Catalunya, and ERC-EV Esquerra Rep. de Catalunya-Els Verds (ERC-EV); CiU: Convergence and Union (Catalan Christian Democrats); BCN en Comú (coalition of Leftist-Green).



