



## How central business district developments facilitate environmental sustainability – A multiple case study in Finland



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### ABSTRACT

Sustainability is widely accepted as an important conceptual framework within which to position urban policy and development. Furthermore, urban planning is recognised as an important instrument for promoting sustainable development. The purpose of this study is to examine how Finnish central business district developments are designed to facilitate environmental sustainability. Three recent urban regeneration projects are explored as a multiple case study, firstly to model the central business district development process in Finland, and secondly to analyse how the expected outcomes of such regeneration projects support environmental sustainability. Official plan reports and supplementary case data are analysed qualitatively. A common development process model is identified and environmental sustainability is found to be promoted through higher urban density. However, environmental considerations are made only in the beginning and at the end of the linear planning process. In each of the cases studied, the contribution to environmental sustainability appears to be scarce.

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### Introduction

Both the source of and the solution to the main sustainability challenges of our increasingly urbanized world lie within cities (Grimm et al., 2008; Rees & Wackernagel, 1996; Tan, Wang, & Sia, 2013). In the late 1990s and early 2000s urban development policy and practice has undergone radical restructuring: resources have been redirected towards the development of the inner city and, at the same time, urban sustainability discourses have emerged (Bramley & Power, 2009; Dickinson, 2005; Krueger & Buckingham, 2012). Agendas of urban sustainability have been widely adopted in European and North American cities, and sustainability schemes have emerged, such as BREEAM for Communities, LEED for Neighborhood Development and CASBEE for Urban Development. New planning discourses and practices typically lie at the nexus of higher urban density, improved infrastructure, new city centre retail complexes, mixed use and creative design of public space (Bramley & Power, 2009; Dixon, 2005; Henderson, 2011; Krueger & Buckingham, 2012). Given the competition between cities (Book, Eskilsson, & Khan, 2010; Vigar, Graham, & Healey, 2005; Warnaby, Bennison, & Davies, 2005), central business district (CBD) development projects seek to create

favourable images, and a general expectation is that additional investments, employment and even environmental improvements will simply follow on from the flagship development projects (Henderson, 2011; Rousseau, 2009).

Urban development strategies based on higher urban density are often claimed to support *environmental* sustainability: dense urban structures and improved infrastructure can cost-effectively facilitate sophisticated sewer systems, waste collection, material recycling, and reduced per capita demand for occupied land; waste process heat from industry and power plants can be used for space-heating in dense urban developments; and use of motor vehicles can be reduced by facilitating walking, cycling, and public transportation in denser urban areas (Holden & Norland, 2005; Kenworthy, 2006; Van der Waals, 2000). However, the potential of the compact city policy to contribute to environmental sustainability is actually very limited when the environmental impact of consumption is considered (Holden & Norland, 2005; Neuman, 2005; Van der Waals, 2000). Cities are concentrated centres of consumption, dependent on the productive capacities of ecosystems well beyond their city boundaries, and responsible for a host of local and global environmental problems. These problems occur not just in cities themselves, but also in the rural and industrial areas that supply them with the energy and materials demanded by urban lifestyles and that absorb their waste (Bithas & Christofakis, 2006; Grimm et al., 2008; Paloheimo & Salmi, 2012). This notion is not new: almost 20 years ago, Rees and Wackernagel (1996) concluded

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that urban policies should strive to massively reduce the energy and material consumption associated with cities. Similarly, Grimm et al. (2008) have stated that as our ecological footprint expands, so should our perception of environmental issues of a greater scale, and of the broader impacts of our individual and collective life-styles, choices and actions.

A common European approach to *social* sustainability, within the context of urban planning, is that sustainable communities are places that meet the diverse needs of existing and future residents, or more specifically, that they are places where people *want* to live and work and that contribute to a high quality of life: they are safe and inclusive, well planned, built and run, and they offer equality of opportunity and good services for all (Dempsey, Bramley, Power, & Brown, 2011). Urban developments that focus on higher density have the potential to positively impact social sustainability: to improve access to services and facilities, to decrease car-dependency (a social excluder for those without a personal vehicle), to increase the potential for spontaneous interaction and to create the sense of community in neighbourhoods (Burton, 2000; Nasar & Julian, 1995; Talen, 1999). Compact urban structures may also demonstrate a mixed usage pattern and host a less segregated urban population, even if it is not axiomatic that social mix or use mix correlates with urban density (Burton, 2000; Dempsey et al., 2011; Sharifi & Murayama, 2013). It has however also been reported that compact urban forms can worsen neighbourhood problems and related experiences of insecurity and can cause stress and dissatisfaction (Bramley & Power, 2009; Burton, 2000; Kyttä, Broberg, & Kahila, 2011). According to some (case) studies in the United Kingdom, the United States and New Zealand, people may actually prefer low-density suburban living, with medium density areas seeming to be optimal for social interaction and participation in neighbourhood activities (Bramley, Dempsey, Power, Brown, & Watkins, 2009; Gordon & Richardson, 1997; Vallance, Perkins, & Moore, 2005).

From the *economic* point of view, the development of city centres is expected to bring much-needed investment to the urban core (e.g. Krueger & Buckingham, 2012). Given that cities aspire to become and to remain attractive places to live, work, visit and to do business, a goal has been set for urban policies to present cities as attractive products (Rousseau, 2009; Van den Berg & Braun, 1999; Warnaby et al., 2005). The target market of these developments is typically the middle classes given the anticipation that their consumer power and consumption habits will overcome any wider economic decline (Rousseau, 2009). The tastes and consumption preferences of this audience thus tend to largely impact the design of current CBD developments. The marketing of urban places as a process whereby urban activities are related to the demands of targeted customers has been widely studied already in the 1990s (Ashworth & Voogd, 1990; Griffiths, 1998; Ward, 1998). In the 2000s several authors have studied the potential contribution of the retail industry to the regeneration of deprived urban areas (Mitchell & Kirkup, 2003; Warnaby et al., 2005; West, 2002). However, Dixon (2005) still sees it as vital to accurately assess the real economic contribution that retail development makes in municipalities if, as seems to be the case, retail is a core element of CBD regeneration programmes (e.g. Balsas, 2001).

Sustainability is widely accepted as an important conceptual framework within which to position urban policy and development, and urban planning is recognised as an important instrument for promoting sustainable development (Grimm et al., 2008; Holden & Norland, 2005; Musakwa & Van Niekerk, 2013). Even if the evidence of a positive link between developed urban structures and improved sustainability is relatively scarce and incoherent (Burton, 2000; Heinonen, Kyrö, & Junnila, 2011; Liu, Song, & Arp, 2012), urban infill developments are typically seen

as being favourable. Given that centralist principles have been incorporated into sustainability oriented urban planning frameworks in Europe and North America, the ability of municipal authorities to argue against decentralised and out-of-town forms of development has strengthened (Cullingworth & Nadin, 2007; Henderson, 2011; Valler, 1996). In this sense one might even consider sustainability principles to have been enrolled to bolster the case for large-scale city centre flagship projects, and thus to intensify urban entrepreneurialism (Henderson, 2011).

The purpose of this study is to examine how CBD developments are designed to facilitate environmental sustainability in Finland. The primary aim of the study is to build a general model for the Finnish CBD development process through the study of three case developments. Secondly, a cross-case analysis of the economic, social and environmental considerations of each of the case developments aims to discover how sustainability is integrated into the process and how, in considering environmental sustainability, the planning process and the approved development are impacted in each of the case areas. Furthermore, it is briefly considered whether the economic, social and environmental aspects are considered competently and with impartiality in each of the case areas. Given that the case cities are relatively small (45,000–200,000 inhabitants) on a global scale, the results are likely to be applicable only for cities and towns of a comparable size. However, each city is unique, and a case study only reveals what may occur in a similar context elsewhere.

The paper is structured as follows: the next section introduces the research methods and the material used. 'Results' models the Finnish CBD development process and presents the findings of the sustainability analysis. The results are discussed in the following section. Finally, conclusions are presented in the last section.

## Study design

The study utilises a mixed method strategy with a two-phase linear qualitative analysis structure. Two separate qualitative content analyses were conducted using data collected from three separate case projects. The primary data consisted of the textual and pictorial documentation of the land use planning process, which were supported by interviews to confirm the interpretation of the documents. All the data were commensurate between the three developments studied, ensuring that the same information was available for each of the cases.

## Data

The official plan reports were the main source of data for both analyses. A data set for qualitative content analysis usually consists of purposively selected texts that can inform the research questions being investigated (Zhang & Wildemuth, 2009). A plan report typically contains detailed information on all major elements of the land use plan and provides a comprehensive summary of the results of all impact assessments conducted during the planning process. The subject areas for the impact assessments include (1) spatial structure and the potential for utilising the old infrastructure; (2) housing supply and technical service networks; (3) traffic volumes, public transport system, networks for bicycle and pedestrian traffic and the general flow of traffic; (4) municipal economy, jobs and the operational preconditions for businesses; (5) landscape, cityscape, cultural environments and building heritage; (6) nature, natural resources, soil, bedrock, ground water and other environmental issues; and (7) living conditions, environmental health and safety, and the recreational opportunities for different population groups.

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