

to investigating urban form as a key concept and complex urban phenomenon enables consideration of a wide range of topics, including 'grand challenges' (the term used in Horizon 2020), of which healthy environments, climatic change and energy consumption are but a few examples. Professionals engaged with the urban environment, and supposed to solve the problems of today's and tomorrow's cities, have various 'profiles' but those most relevant to the visible results of these activities are those of architects and urban planners. If we assume that they have different starting points, which is usually the case, with the same aims of producing new forms of urban and physical structures, one wonders how long they would wander about until they reach the point where urban morphology has already been?

Reading about 'our common scientific future' in Horizon 2020 (<http://bulletin.sciencebusiness.net/news/76212/Any-questions-A-guide-to-Horizon-2020>), it is hard to resist posing the question of why architects and urban planners cannot deal directly with urban form in all its complexity instead of

putting themselves into the roles of luminaries on climate change, energy consumption, sustainable development and the like just for the sake of surviving in the latest era of 'scientific' funding.

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## The recent economic downturn and fringe-belt creation in Reykjavík, Iceland

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The recent global financial turmoil has left its mark on cities practically worldwide (Reinhart and Rogoff, 2009). The sharp slowdown in economic activity has moved in tandem with a housebuilding slump (Nicholas and Scherbina, 2013). Whitehand (1972a; 1972b) argued that economic slowdowns were major factors generating housebuilding slumps and in turn created conditions conducive of fringe-belt formation. This fits the evidence from a number of cities for much earlier periods (see, for example, Barke, 1974, 1976; Conzen, 1960; Louis, 1936; Whitehand, 1972a, 1972b, 1974, 1977). In Iceland the formation of fringe belts has principally been influenced by physical hindrances to growth, a topic also addressed in studies of fringe belts in other countries. However, at least until now, economic conditions have not played as important a part in fringe-belt formation in Reykjavík as they have elsewhere. The question arises as to whether the recent economic downturn and housebuilding slump will prove to be sufficiently severe and

prolonged to generate a new fringe belt at the current urban fringe of Reykjavík.

## Housebuilding slumps and fringe-belt formation

Fringe belts originate at the temporarily stationary or very slowly advancing fringe of a town and are composed of a characteristic mixture of land uses initially seeking peripheral location (Conzen, 1969, p. 125). During a prolonged halt in the outward advance of the built-up area a varied assortment of land uses normally seeking large, cheap peripheral sites have tended to occupy land immediately beyond the urban fringe, forming a fringe belt. This belt, which tends to include considerable amounts of land occupied by institutions, has become embedded in the urban area during a subsequent resurgence of residential growth (Whitehand, 1988, p. 51).

Whitehand (1972a, pp. 52-3; 1972b) applied the

concept of bid rent to explain why the demand for land for different purposes at the urban fringe varied over time and with distance from the edge of the built-up area. During a boom in housing construction there was a high probability of new housing being located within a broad zone around the edge of the built-up area and for institutions taking up new sites to locate farther out. During a slump in housing construction there was a high probability of institutions acquiring sites close to the built-up area. Over very long periods of alternating booms and slumps, this caused a series of zones characterized by different proportions of housing and institutions to be created (Whitehand 1972a, 1972b).

### **The recent housebuilding slump**

Many Western countries experienced a boom in their residential housing markets during the period from 1997 to 2007. The subsequent slump has, in many cases, been severe. The turning point in this building cycle, experienced at much the same time in many countries, is related to the major financial recession that started in 2007.

Following many years of rapid growth, the economic output in Iceland fell by more than 10 per cent over the 2-year period, 2009-2010. The housebuilding boom started somewhat later in Iceland than in most Western countries, but from 2003 the number of houses constructed grew remarkably rapidly. The subsequent slump in housebuilding was also severe, particularly between 2009 and 2011 (Statistics Iceland, 2013). During the housebuilding boom between 2003 and 2007 the urban fringe was characterized by a forest of building cranes. As building stopped, abandoned and half-built suburbs marked the city's edge. It is interesting to consider whether this sharp turn-around in economic activity, particularly in the housing sector, has laid the foundations for the formation of a new fringe belt. If so, this would be the first time that a fringe belt formed in Reykjavík owing primarily to economic conditions.

The growth of Reykjavík is guided by its master plan which is intended to apply for roughly 2 decades, although subject to reviews. Since the 1960s the city has grown by the addition of new satellite neighbourhoods, and more were planned and being built during the recent boom. These latest additions to the city fabric were left at various stages of completion as development came to a stand-still in late 2008. These abandoned neighbourhoods are monuments to better times, built

according to local plans reflecting the state of the economy, tradition and culture.

It will take some time before it becomes evident whether this housebuilding slump will result in the formation of a new fringe belt. For now it must suffice to consider some short-term indices. The most recent neighbourhoods at the city edge were designed as separate units beyond the previous edge of the city, surrounded by green areas (Kristjánsdóttir, 2007). Housebuilding has resumed in the past couple of years at a significantly slower pace than during the boom. In several cases adjustments have been made to plans, allowing for plots and apartments smaller than originally planned (Kristjánsdóttir and Sveinsson, forthcoming). The focus has shifted to 'densifying' the city, notably with an emphasis on increasing the number of apartment buildings in more centrally located older areas. In some cases institutional and industrial operations are moving to planned areas, industrial satellite neighbourhoods, even farther beyond the city edge.

### **Reflections**

The newest neighbourhoods in Reykjavík, which were beginning to be constructed shortly before the 2007 crisis and were still under construction when the crisis occurred, were planned as complete neighbourhoods, and they were located outside the previously built-up area of the city. Building of virtually all types came to a halt in the years following the crash. Subsequently, there has been a tendency to build at higher densities, with green areas and other uses in older neighbourhoods being replaced by apartment buildings. At the same time industries and institutions are moving beyond the city edge, to new areas planned entirely for uses other than residential. The economy has started to show signs of renewed growth and residential building is being revived in the newest neighbourhoods. The plans, however, are being adapted, allowing for buildings and apartments smaller than previously intended.

It is difficult to apply conventional fringe-belt analysis to a city surrounded by ample land and where new neighbourhoods are being planned that are separate from the main built-area of the city. It appears, however, that the forces identified in the formation of fringe belts are working, albeit at a larger scale, as institutions are moving to dedicated satellite areas separate from the residential neighbourhoods, and even farther from the city edge than the latest of those neighbourhoods.

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## Further thoughts on research and practice in urban morphology: a British perspective

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An ambiguous attitude prevails in the UK with respect to academics. On the one hand, they are often sought out as experts on particular matters. On the other hand, in the planning and urban development field in particular, they are also considered as managerially incompetent and politically potentially dangerous (Healey, 2008, p. 873).

This observation draws attention to one of several dilemmas facing the closer integration of academic study in the field of urban development (including urban morphology) in the UK. In relation to urban design, Marshall and Çalışkan (2011) argue that there are three 'applications' of urban morphology:

- As an investigative or exploratory technique to find out 'what happened' within an area and where change in form is studied to better understand urban change more generally;

- As a diagnostic or evaluative tool – a way of studying 'successful' or 'unsuccessful' kinds of urban fabric;
- As a means of identifying examples, types or elements of urban form that could be used as units of design.

Leaving aside the issue of in whose terms 'successful' or 'unsuccessful' may be defined, some of these applications – especially the last – resonate with the ISUF Task Force (Samuels, 2013) conviction that a lack of morphological understanding can lead to poor design. But urban design and the management of change in existing built environments are rather different things. In conceptual terms (if not always in practice, see McCormack, 2013), the relationship between urban morphology and urban design is a close and potentially creative one (Ding, 2013; Scheer, 2013). The relationship between urban morphology and