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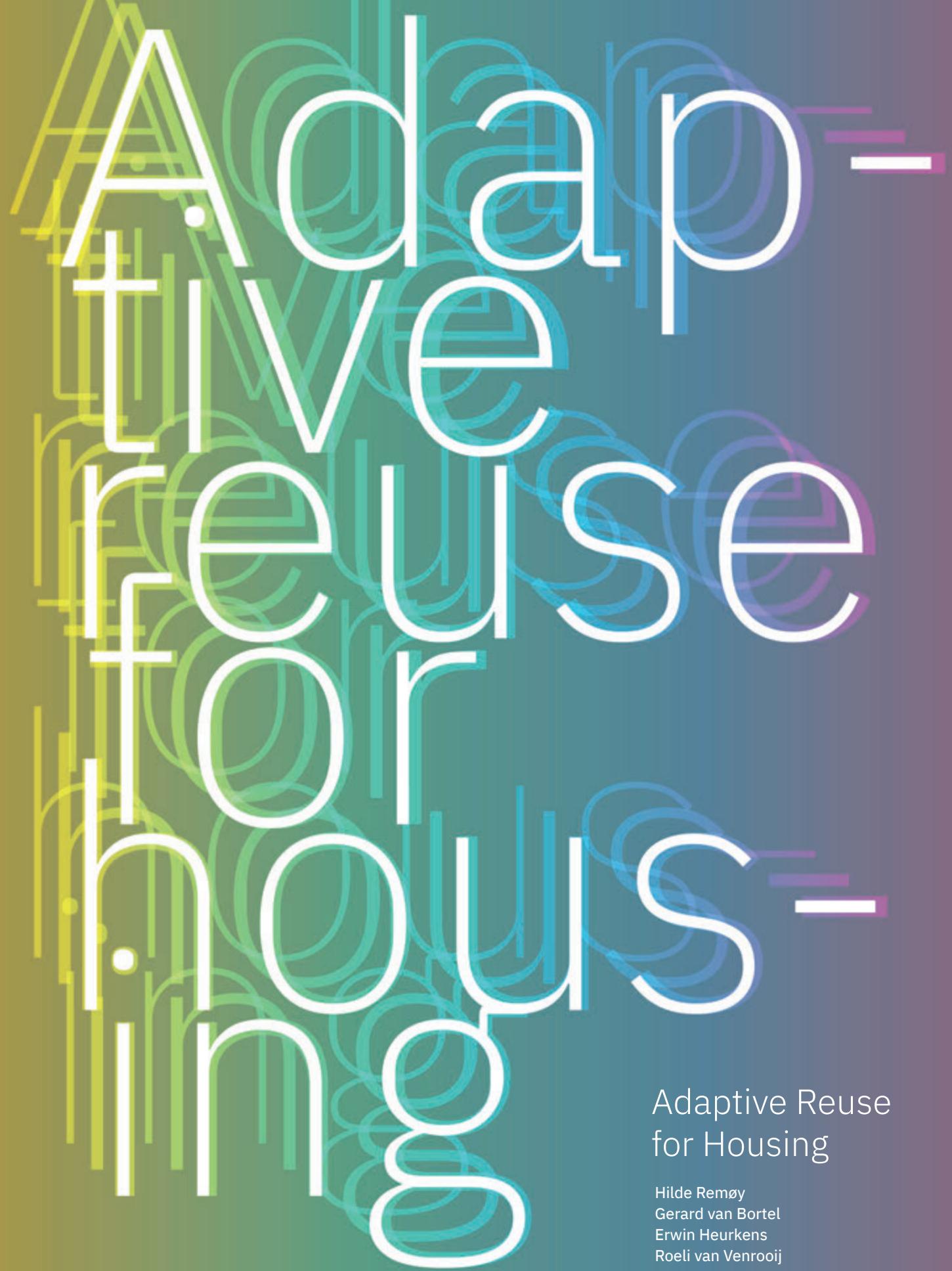
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Adaptive Reuse
for Housing

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Urban manufacturing versus Housing

From Central Business to Central (Re)Manufacturing District?

Karel Van den Berghe

Manufacturing and housing in urban areas are related. The aim of this chapter is to critically contextualize the causality of why we need housing in cities. Causality describes the relationship between cause and effect. In this context, living in the city is seen as an effect of a certain cause, but this cause evolves over time and with geographic development. This chapter proposes that we are at the beginning of a new era where the cause for needing housing in the city is changing. This shift could be particularly significant for Dutch cities. The central message of this chapter is that it is necessary to both acknowledge this potential change and understand its implications for transforming buildings and areas into housing in practice. This leads to the central research question of this essay: What is the role of urban transformation today for the future development of cities?

To answer this question, a brief description will first be provided of how the city can be seen as a causal result of a societal need for added value. This explains why certain cities emerged, disappeared, or adapted for specific reasons. Next, the industrial city will be discussed as a significant turning point for the role of cities in modern society. Following the description of the post-industrial city, it will be explained that the heyday of this era is likely over, suggesting that the reasons for needing to live in the city may change. The chapter will conclude with an answer to the research question.

The city

It is often overlooked that cities originated with a purpose (organically) and, consequently, have not always existed and can also disappear. A comprehensive explanation is that cities emerged as a response to the need for added value (Scott, 2021), a value that could be realised because the necessity of constantly moving around to obtain food became less urgent. This disappearance of necessity could have resulted from the emergence and scaling up of agriculture to produce larger food supplies, or from some parties providing food to others, thus freeing up time for other activities. The (potential) added value then consists of the time that can be used for trade. For example, surplus food or other valuable resources might allow more time for spreading religions. This can lead to, among other things, the development of abbeys, monasteries, pilgrimage sites, or spiritual centres; military purposes; or functions for economic gain such as mining.

All factors contributing to added value have an important geographical element, often referred to as proximity. To realise the added value of trade, developing a religion, military buildup, or extraction, people and activities needed to be close to each other, often for a relatively permanent period. Some of these places grew into what we would today call villages or cities, but many of these places have also disappeared. This process continues today: a city is not a given and can therefore also disappear.

It is often overlooked that cities have been created with a purpose; they can also disappear.

In other words, the existence of a city is driven by added value, usually a societal value resulting from a combination of causes. To achieve this added value, actions are needed. Normally, if not always, these are spatial interventions. Actions such as building a dock or train station, constructing a market hall for trade, a fortress with a moat, or a factory, or establishing a temple or church. Thus, this is a reciprocal phenomenon. On one hand, a city can only exist if there is added value. A city without activity is a ghost town, and these ghost towns from history risk disappearing quickly, physically and eventually from memory. On the other hand, added value is often only realised if there is a city. Throughout history, cities have often been the breeding grounds for art, religion, political movements, financial development, and innovation.

18.2

The Industrial City

The added value of cities has long been rooted in a variety of reasons, some of which have been previously mentioned. Each historical city in the Netherlands has a unique origin story, partly distinguishing it from other cities. Conversely, the existence of cities was often redefined throughout history, for instance, shifting from a military to an economic or religious value. This chapter, however, focuses particularly on the impact of the Industrial Revolution on cities. The Industrial Revolution brought profound changes to many cities. Beginning in the United Kingdom during the late eighteenth century, its major effects soon became evident in cities such as Manchester, Liverpool, Dortmund, Lyon, Osaka, and closer to home in cities like Ghent. The city as a source of added value found a new role. To seize the opportunities presented by the Industrial Revolution, there was a need for labour, capital, trade, infrastructure, knowledge, and political power. Many of these resources were concentrated in cities. It is no coincidence that the first large industrial factories often arose in the heart of medieval centres, sometimes even housed in former abbeys or castles. During the nineteenth century, this growth only intensified, with cities expanding significantly, exemplified by the nineteenth-century 'belt' of workers' houses surrounding the medieval centres of many cities. The (explosive) demand for housing in cities, although the Industrial Revolution had less impact on Dutch cities (see Mokyr, 1974 for more information), was a result of the need for labour required by urban factories. Consequently, urban built environments, such as housing, trade centres, scientific institutions, and ports, became essential for labour, trade, innovation, and coordination during the Industrial Revolution. Simultaneously, many cities gained significant new importance due to the Industrial Revolution.

The Post-Industrial City as a Result of (Hyper)globalisation

The impact of the Industrial Revolution on cities was not exclusively positive. The negative externalities became so significant, due to issues such as exploitation, diseases, and pollution, that various changes rapidly followed. Socialism, which emerged as a major political movement, and the development of spatial and urban planning are examples of responses to these negative externalities. In other words, spatial planning was the twentieth-century answer to the problems of the nineteenth century. The spatial separation of functions such as industry and housing were proposed to ensure that the city and the Industrial Revolution could continue to reinforce each other positively, rather than negatively affecting one another. Until around the 1970s, this reciprocity between city and industry remained strong, and diverse types and processes of urban planning were developed in cities around the world (e.g., CIAM).

However, from that time onwards, everything began to change rapidly, especially in the West. Following the collapse of the Bretton Woods system in 1971 (Williamson, 1985), the international agreement from 1944 that established fixed exchange rates against the US dollar and organised the world by country, cross-border networks began to emerge. Many national airlines, postal services, and car companies ceased to exist or became multinationals, often retaining names that reflect their national origins. The period that followed is characterised as the era of globalisation, which can be interpreted in several ways. Here, globalisation is explained by the relative value (percentage of the total absolute value) derived from trade activities (Van Bergeijk, 2022). Figure 18.1 shows that for decades, this relative value hovered around 20%. There was a first peak just before World War I, but due to the world wars, protectionism during the interwar period, and the difficult reconstruction after World War II, it was only from the 1970s, when the Bretton Woods system fell apart, that an increase began. This increase became exponential from the 1990s and 2000s, peaking between 60% and 70%. Today, we refer to this period as hyperglobalisation (Brakman & van Marrewijk, 2022). Several factors contributed to this, including the fall of the Iron Curtain, the establishment of the European single market, China's entry into the global market, container standardisation, and digitisation, all of which led to a tremendous increase in international trade and the relative value derived from it.

Openness of the World Economy (global trade in goods, 1880–2023, as a percentage of GDP)

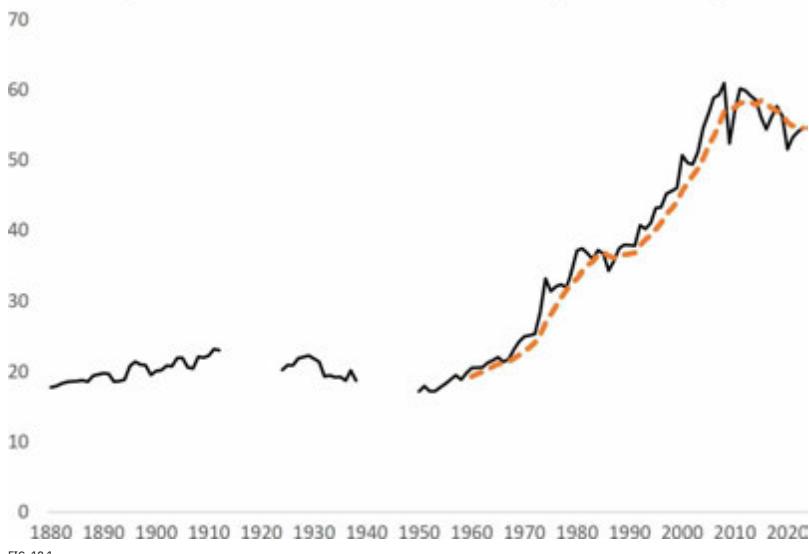


FIG. 18.1



FIG. 18.2

FIG. 18.1 Globalisation over time, explained by the relative value derived from trade activities

Source: Van Bergeijk, 2022

FIG. 18.2 *Time Magazine A Tale of Three Cities, January 2008*

Source: Elliott, 2008

Due to the optimisation of production networks across borders, so-called global production networks (GPNs) emerged (Coe et al., 2004; Henderson et al., 2002). The automobile sector is illustrative, as are the clothing sector and, more recently, the computer chip sector. Before final products are made, components travel countless times across borders. These global production networks became so complex that there was a great demand for services to set up, manage, and maintain these networks. Firstly, there is a material demand for services, such as ed coordination. Examples include rapidly scaled-up container ships or the expansion of huge canals, railways, highways, and distribution centres. Secondly, there is an immaterial demand for services, such as insurance, specialised banks with available capital, research centres, or legal support. These services are referred to as advanced producer services (APS).

Here, a link can be made to the potential added value of the city. To benefit from globalisation, a specific built environment was needed. On one hand, large air and seaports were necessary; on the other hand, cities became important again. It is notable that between the need for cities during the industrial revolution and the need for cities in globalisation, cities in many parts of the world, including the Netherlands, became less popular (van Meeteren, 2020).

In the early days of globalisation, heavy industry soon began to lose out to heavy industries from other parts of the world. Shipbuilding, mining, and basic chemicals are examples of sectors that faced difficulties, closed, or reorganised to other parts of the world (Van den Berghe, 2018). Unemployment rates peaked during this time in cities like Amsterdam and Rotterdam. The higher unemployment in cities led to a vicious cycle of reduced income, less maintenance, and a faster departure of more anticipated residents from the city.

Since the 1980s, but especially during the 1990s and 2000s, there has been a gradual shift. The enormous demand for specialised services led to a significant spatial effect, an effect first described by John Friedmann (1986) and later by Saskia Sassen (1991) as world cities or global cities, respectively. These geographers observed a worldwide concentration of APS (Advanced Producer Services) in a limited number of cities (Hanssens et al., 2012). Unlike during the industrial revolution, these services, which cater to demand as the term suggests, did not spatially cluster around the factory for which the service was provided. The competitive advantage of sharing knowledge became more important, so much so that it became more crucial for these APS to be close to each other and to develop knowledge and expertise (cf. competitive colleagues) than to be near their clients (Florida et al., 2017).

The key input variable for these APS to remain competitive is knowledge—knowledge held by highly specifically trained individuals, who from the 1980s onwards were referred to as yuppies (cf. Young Urban Professionals) (Beaverstock & Hall, 2012). Yuppies, besides their salary, could be attracted by companies that could offer specific work and living environments. At that time, central business districts emerged worldwide, often characterised by gleaming high-rise buildings. But the living environment of cities, at least those that successfully capitalised on their potential added value in this global era, also improved rapidly—something that is still ongoing today. The increased importance of airports for quick travel between these global cities, the greater importance of culture, top hotels and conference centres, specific associations, extensive public transportation, green spaces, sports, etc., all influenced how cities began to transform. Gradually, just as in the coordination world, rankings began to emerge (Beaverstock et al., 2000). The top global cities, which increasingly began to steer global production networks, included cities such as Tokyo, New York, London, and Hong Kong (see, for example, the cover of Times magazine, figure 18.2), followed by cities like Paris, Frankfurt, and Amsterdam. The yuppie (r)evolution had a remarkable side effect: these global cities progressively had more in common with each other than with the places surrounding them.

The Netherlands can be seen as a champion of globalisation, though there is always debate over who, what, and were benefited from it. The Netherlands, which emerged from a complicated economic period in the 1980s (CPB, 2023), a tougher period than its neighbouring countries (for more information, see Jongsma & de Lange, 2023), actively focused on facilitating globalisation through its built environment. Examples of active policies include the Mainport policy, which focused investments on the Port of Rotterdam and Schiphol Airport (RLI, 2016), as well as policies for developing Central Business Districts (CBD) on one hand and creating beautiful and attractive urban environments, particularly in the Randstad, on the other. The Netherlands distinguished itself from other countries by deliberately profiling itself as a service economy, both materially and immaterially. Illustrative of this is the fact that many Dutch architecture and urban planning firms, such as OMA, Mecanoo, and MVRDV, which began designing and shaping the often large-scale (transformative) development of CBDs and residential environments in the Netherlands and neighbouring countries, became an export product during globalisation, developing such ideas worldwide. In short, a successful city became one that could combine a high-quality commercial area with a high-quality living and experience environment.

In this era, urban living has become important. The causality behind this lies in the need for high-quality jobs, which are concentrated in cities. Conversely, if a city, or even a country, wanted to be successful during this (hyper) globalisation era, it could achieve this by actively focusing on attracting highly educated, internationally, and culturally oriented workers who are essential for APS companies that need these individuals. Therefore, attention to providing high-quality living environments in cities for these workers is crucial. It's a kind of chicken-and-egg situation. There is certainly an economic and even societal reason for the need for more housing in cities. In some cases, spatial policies may choose to transform certain buildings or areas into residential spaces. In other words, in this era, it is logical for other land uses in the city that do not sufficiently contribute to attracting yuppies, such as urban industrial areas, to be transformed into residential or commercial functions.

18.4

From Central Business District to Central (Re-)Manufacturing District?

There are, however, signs that this era is ending or at least changing. As shown in figure 18.1, since the 2008 crisis, there has been a decline in the relative value derived from trade in services, a period now known as "slowbalisation" (EPRC, 2020). More recently, although it remains a major topic of debate in the literature, we have seen a levelling off or, in some cases, even a decline (Van Bergeijk, 2022) in the relative value derived from trade and services. This does not necessarily mean, though in many cases it does, that the absolute demand for material and immaterial services is decreasing, but rather that their relative value is declining. In other words, the relative value of other activities, particularly specialised industries (e.g., ASML, see Hijink, 2023), is increasing.

In this 'new' era, the added value of cities could be fundamentally different. If the relative value of specialised innovative manufacturing industries is indeed increasing, it would mean that these business activities need to be facilitated. The same will be required as with APS during the post-industrial era, namely that these innovative industries need specific workers who want and need to live in a specific spatially nearby environment. As illustrated by developments in the circular economy, this trend not only requires the attraction of highly educated and specialised workers but also a growing need for skilled labour (Burger et al., 2019). The question arises whether these workers will have a similar demand for housing, both in quantity and quality, as the yuppies of the post-industrial era.

The other effect of this new era on cities, however, is likely to be even more significant. If there is increasing demand for high-quality, innovative, circular, and socially diversified activities, this will also lead to a change in the demand for urban functions that these new workers require. Where high-rise office buildings once provided the supporting urban environment for APS, this new era may require a different form (Ferm & Jones, 2017). If the new added value of the city is to be derived from socially driven, innovative, high-quality industries, it is likely that a central business district (CBD) will no longer be necessary, but rather a central (re)manufacturing district (CMR). A CMR would be situated close to, or even at the heart of, its key input variables: specifically diversified workers. A parallel can be drawn here with the early days of the Industrial Revolution when factories were similarly established in the middle of cities because they could only innovate and operate there.

However, it is hoped that, unlike in the past, these developments will not be accompanied by the same negative externalities. The book *Industrious City* (Hosoya & Schaefer, 2021) demonstrates that there are already examples today of centrally located manufacturing industries in cities that, on the one hand, house, in some cases, even heavy industrial and logistical activities, while on the other hand, being close to residential areas. Note, this is a fundamental difference from the "win-win" living/working adaptive reuse currently underway in the Netherlands. The causality is different. In the Netherlands, the combination of living and working is primarily based on enabling residential functions in business areas (van Bueren et al., 2022), whereas the causality described by Hosoya and Schaefer (2021) is focused on enabling high-quality work first, with living potentially following later.

The Netherlands can be seen as a champion of globalisation, though there is always ongoing debate about who, what, and were benefited from it.

FIG. 18.3 Conceptual representation over time and hypothetically towards the future of the causal relationship in which the demand for urban living is a consequence of the industrial and/or service sector

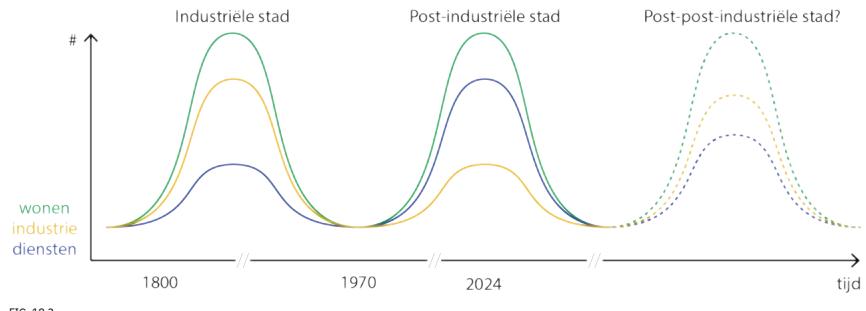


FIG. 18.3

18.5 How to Reach the Next Peak?

The central message of this chapter is that housing is a derivative of the societal needs of cities, and that this changes over time. Figure 18.3 illustrates this causal relationship during the most recent "peaks" of urban prosperity: the industrial city and the post-industrial city. The demand for housing during the first peak arose from the industrial functions that emerged in cities, driven by key input variables such as proximity to workers, infrastructure, and capital. The demand for housing during the second peak came from the service sector (cf. APS), which sought specific workers concentrated in cities. Between these two peaks, there was a decline in the popularity of the city, which occurred in the Western world around the 1970s and 1980s. This hypothesis also partly explains why certain cities were successful during the first peak but less so during the second (e.g., Charleroi), and vice versa (e.g., Singapore).

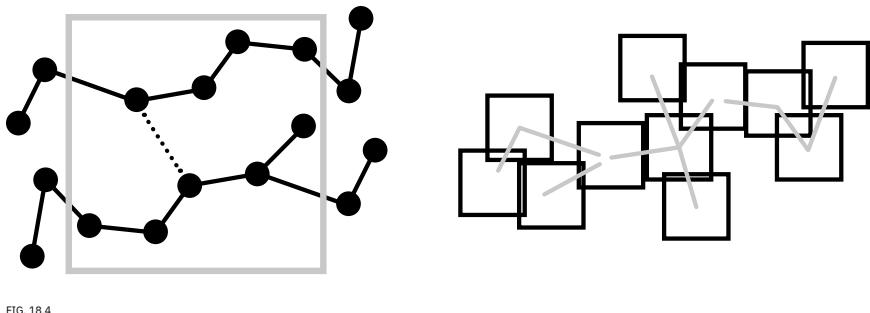
The proposition of this chapter is that the post-industrial peak has likely passed, and we are moving toward a new societal role for cities. This new role will be much more focused on facilitating the manufacturing industry, particularly high-quality manufacturing. Cities will certainly still be needed, as will urban living, but the underlying cause for this will likely shift partly towards industry. This industry, like Central Business Districts (CBDs) during the post-industrial city, will want to establish itself in or near the city centre, referred to in this chapter as Central (Re-)Manufacturing Districts (CMDs).

The answer to the central research question is that the adaptive reuse of buildings and areas in cities into housing, particularly urban industrial buildings and areas, has been a relatively logical practice during the post-industrial era. However, this could become a problem as we shift towards the next peak, referred to in Figure 18.3 as the post-post-industrial city. This serves as a partial warning for the current dominant urban planning practices. For cities, and more broadly for any space and infrastructure, it is often a clever idea to preserve activities and added value for the longer term.

FIG. 18.4 Two interdependent perspectives for urban policy

The perspective of a building or area where different individuals or companies come together or are located, and whether or not they collaborate (left), and the perspective of a relational network, such as a community or a production process of a company or a group of companies that emerges through the collaboration between different buildings and areas (right).

Source: Van den Berghe, 2023



In the future, these developments could serve as a catalyst for the creation of dependent functions. If not, previous investments, often public investments, may significantly decrease in societal value. If a shift in spatial-economic policy is once again needed, it will often require a disproportionately large investment. In other words, looking beyond the peaks and ensuring that the troughs are not too deep is likely a wise long-term strategy to effectively allocate public resources.

In addition to the critical note about an overly narrow focus on the transformation of buildings and areas into housing, this chapter also proposes a new approach to urban planning and area transformation practices. It is likely that understanding and guiding the derivative demand for urban living will become more complex than in recent decades. During the polycrisis we are currently facing, transitions such as climate change, the circular economy, biodiversity, geopolitics, (in)equality, and more will interact with each other and often move in unexpected directions. The Netherlands, and especially its cities, may directly experience the consequences of these transitions. Figure 18.4 illustrates that, in response to the transitions of our time, it may be useful to formulate and implement urban policies for specific spaces—such as a building, area, city, or even region—from two interdependent perspectives. On the one hand, there is the perspective of a building or area with interdependent and collaborative actors within it (left side of Figure 18.4). On the other hand, there is the perspective of a relational network of actors collaborating across spatial boundaries for their business activities (right side of Figure 18.4). Urban spatial policies and area transformation practices that integrate horizontal perspectives (across spatial boundaries) with vertical perspectives (through spatial scales) can help to guide spatial interventions more effectively, ensuring that the development of societal value continues to be supported.

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