

Major trends in the development of industrial areas of Budapest in the early 21st century

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Abstract

Budapest bore witness to dramatic changes in its industry following 1989, and these have had a major impact on the location of industry and on the use of former industrial areas. The main purpose of this study serves to illustrate the major developments and shifts that took place within the traditional industrial areas during the last decade and is based upon the results of a survey carried out in 2006, in order to reveal the extent of the functional transformation of areas that were traditionally industrial in nature. Over the last decade the former processes (deindustrialisation, rehabilitation, shrinkage of industrial areas, and change in their functions) have developed, albeit at a different pace spatially. As a consequence, the spatial pattern of the Hungarian capital, as well as its functional divisions have undergone significant transformation.

Keywords: industry, restructuring, deindustrialisation, Budapest.

Introduction

The changes in the industry of developed countries that started in the 1970s have had a significant impact on the structural and functional divisions, landscape and social structure of cities. By way of contrast, similar developments only took place in the post-socialist countries after the change of regime in 1989. During the last two decades, parallel changes have occurred in the industry and industrial areas of Budapest, a city that used to be a pioneer of reform in the eastern part of Europe. Research projects carried out by the author in the 1990s have already summarised some of the transition (KISS, É. 1999, 2002a,b), thus, in this study the emphasis is placed on changes that have taken place over the last decade. Based on the survey conducted in 2006, the major developments that took place in the industrial areas of Budapest during the beginning of the 21st century will be illustrated, as will their impacts on the spatial pattern of the city and the different ways that old industrial premises are being put to new uses.

The study consists of three main parts. The first section provides a short theoretical background and methodology. The second section discusses the major trends transforming the industrial districts of Budapest, whilst the third describes the different trends in the changing use of traditional industrial areas of the city.

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Theoretical background and methodology

The development of Budapest (as has already been described by Tibor Mendöl) gave rise to a ring-and-radial urban structure that strongly resembles Burgess' model of concentric zones (MENDÖL, T. 1963; CSANÁDI, G.–LADÁNYI, J. 1992). The four zones have been shaped by natural, social and economic factors. Their regular pattern is broken by topographical features on the Buda side and by the major arterial roads leading out of the city. Each zone has had (and partly has at present) its own specific function. Apart from the fourth zone, the first three (CBD, first residential belt, and second employment zone) have experienced considerable transformation after the regime change, but from a different aspect (BERÉNYI, I. 1994).

The changes that took place in the industry of the Hungarian capital were induced by several factors, and mainly affected the industrial areas located in the second employment zone, or the 'transitional zone'. These changes can be interpreted as the spatial appearance of, amongst others, the radical organisational and structural changes in the industrial sector, as the consequence of functional restructuring (COFFEY, W.–BAILLY, A. 1996). They were particularly significant during the 1990s as a part of the developments that had a profound effect on the industrial areas. Later, other factors came to the fore (e.g. market conditions and a purposeful urban policy), which were no longer confined to industry and industrial development. For the time being, these factors are responsible for the transformation of the industrial zones that is under way; over the past two decades or so, the relative importance of the driving forces at any one time has changed.

Among the capitals of central and eastern Europe, it was Budapest that inherited industrial areas of the greatest extension, which could either serve as a grave handicap or a highly favourable endowment. The former is due to the expense involved with the reclamation of contaminated land, in sharp competition with other big cities, and high costs lay a heavy burden upon the urban economy. Moreover, it might discourage potential investors. On the other hand, the former industrial areas are to be considered valuable reserves for the city, owing to the scarcity of non built-up areas in the inner parts of Budapest, compared with other cities like Warsaw (KISS, É. 2007).

The industrial areas of Budapest are labelled differently (brown zone or rustbelt), reflecting their various characteristics. 'Brown zone' in its strictest sense refers to current industrial land use, but in a wider sense it designates the zone of transition as well, including e.g. transport facilities of considerable spatial extension. Therefore this title denotes a mixed zone with respect to its function, being a mix of industrial and non-industrial functions. Industrial areas are also frequently labelled as the 'rustbelt'. This is a name used for formerly industrial but now abandoned areas or for those operating at reduced

capacity and not yet refurbished. The main features of such zones are the derelict industrial areas and the old industrial building stock (BARTA, Gy. 2004; BELUSZKY, P.–GYŐRI, R. 2004; KUKELY, Gy. *et al.* 2006). According to a different approach, industrial areas together form the rustbelt. The difference between various interpretations is that the transitional (brown) zone refers to its position within the urban pattern whereas rustbelt designates the condition and quality of the industrial environment.

The extension of zones in Budapest also depends on how the above is interpreted. The largest is the transitional zone, between the city centre and outer districts (BARTA, Gy. 2004; BELUSZKY, P.–GYŐRI, R. 2004). The share of brown zone that includes traditional industrial establishments and land of other use (such as transport and residential) was estimated at 13% (68 square kilometres) of the capital's total land area (KUKELY, Gy. *et al.* 2006). Areas that are exclusively used for industrial purposes are much smaller as their initial extension was less to begin with, and they have shrunk considerably over the past two decades (KISS, É. 1994, 1999).

The present study is based on the survey conducted in 2006 and conceived to identify changes that have taken place in the extension and functions of industrial areas of Budapest. A detailed mapping of these areas by blocks has provided granular information about their use. The survey extended over the whole capital, i.e. it encompassed the industrial areas by district, with the exception of the city centre. The maps of districts (1:7 000 and 1:13 000 produced between 2002 and 2004) served as the base maps. They showed the areas that qualified as industrial zones, and in relation to them, a map showing functional use was drawn in 2006 with an indication of the current activities within these areas. From the base map, the areas that had real industrial purpose were filtered out and inserted into a separate map.

The next phase of the survey involved the resulting map being compared with that of 1998, to analyse the change in industrial areas according to their state in 2006. The result confirmed our hypothesis, which anticipated an ongoing loss of industrial areas over the past ten or so years. This conclusion is valid, even though those objective and subjective factors were also taken into account that might lead to incorrect calculations or estimations.

The process of exact definition and identification of industrial areas of big cities has always given rise to a great deal of methodological issues, in both the distant past (PRINZ, Gy. 1964), as well as over the past ten years. Initially these problems emerged due to the multitude of new firms that after 1989, chose to locate on the industrial estates that were earlier occupied by large state-owned companies. As a consequence, the former industrial areas or buildings were frequently divided among dozens of firms and issues as to ownership became highly complicated. Further, some of the firms could not be accurately classified based on their activity, owing to the fact that besides

industry, they also pursued other activities (repair, commerce, logistics, and other services). Moreover, there were several firms in the area with a non-industrial profile. For all these reasons, the size and functional use of industrial areas at best could only be estimated. The representation of very small firms on the map served as a hindrance too. Therefore the following principle was kept in mind when conducting the survey: the primary activity of the firm was taken as its base and the proportion of areas being used for industrial and non-industrial activities was estimated. Naturally, this might lead to subjective judgement, but it is an acceptable method to indicate the dominant trends.

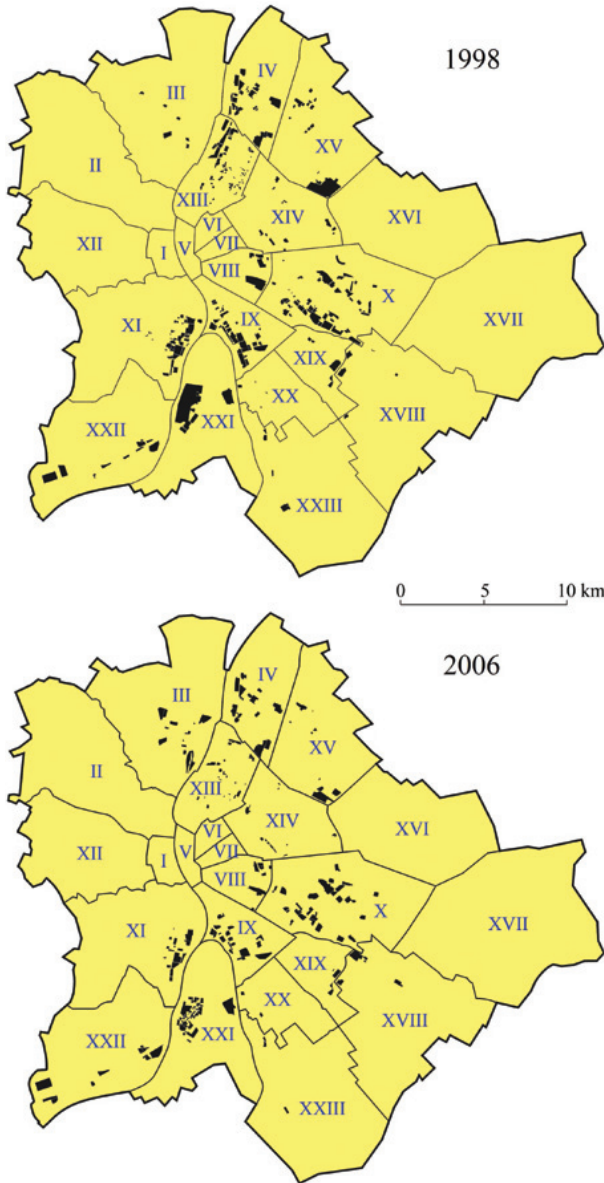
Besides the highly time consuming field work (observations, drawing sketch maps, and taking photographs), data relating to the firms was collected and some interviews undertaken. From the database of CompLex Céghírek information was collected by district on the newly established 6968 industrial firms in Budapest between 2000 and 2005, and on the 4501 firms that ceased to exist during the same period. In the spring of 2006, the author visited the office of the Chief Architect of Budapest and some local government offices of certain districts that possessed large industrial areas, in order to also interview their Chief Architects as to their thoughts towards industrial areas and the future fate of these.

Major trends in industrial areas

The changes that have taken place in industrial areas have shown spatial and temporal differentiation. The extent of these changes is highly varied across the distinct parts of the city and even within a given industrial estate, due to the latter being in differing stages of transformation and development. This can be attributed to several factors (location of industrial establishments, size of production units, ownership structure, organisational form, and sectoral affiliation). Essentially, these parameters are determinant as to the future prospects of the given industrial area and of the plants therein. There are examples from previous decades of some areas that have survived virtually unchanged (at least in their outward appearance), and some of them are unlikely to change considerably in the future as well. Others have changed to a lesser or greater degree as their manufacturing base has undergone renewal and/or reorganisation and these changes have exerted a positive impact upon the outward appearance of buildings, the use of space, internal layout, etc. Finally, many of the former industrial establishments have completely disappeared, and their locations now provide home to other functions. In addition, new industrial areas have also been established. Similar developments can also be observed in developed cities, but all of them have their individual features (COHEN, P. 1998; DOLING, J. *et al.* 1994; MOULAERT, F. *et al.* 2003; TAKEUCHI, A. 1985). Depending

on the historical preliminaries, economic foundations, the quality of the social and cultural environment, etc., these changes have occurred everywhere but in a differentiated and specific manner (ERNST, M. *et al.* 1996).

Industrial areas in Budapest had reached their maximum extension by the early 1970s. At that time they made up more than 9% of its total area; since then there has been a slow shrinkage. As a result of restrictions on industrial activities in the capital city, relocations from there and owing to technology transfer, by the mid-1980s industrial areas had reduced by 250 hectares. The diminishing size of traditional industrial areas continued into the 1990s, but more intensively and to a different extent in various parts of Budapest.



Industrial activities in the capital city, relocations from there and owing to technology transfer, by the mid-1980s industrial areas had reduced by 250 hectares. The diminishing size of traditional industrial areas continued into the 1990s, but more intensively and to a different extent in various parts of Budapest. In some districts the industrial areas were reduced by 30–50% (Kiss É. 1999, 2002a,b). Lately there has been a general slowdown in this process, yet in certain places it is overwhelming. Surveys dating from 1998 and 2006 testify to these trends over the past ten years or so. At present the traditional industrial areas of the transition zone extend to no more than a couple of percent of the capital's territory (Fig. 1).

In relation to this intense shrinkage of traditional industrial areas,

Fig. 1. Traditional industrial areas of Budapest. Source: Surveys carried out in 1998 and 2006.

the question has arisen whether industrial districts exist anymore at all? The answer should be that they definitely do not, because by now most of them have been dissected and have 'disintegrated'. These days, only some dispersed patches of the old industrial areas still possess the contours of their former appearance. Naturally it should be remembered that these old industrial areas are not the same, as post-1989 the majority of the surviving enterprises experienced huge internal restructuring and changes in their outward appearance.

In the 1990s, the extension of industrial areas was determined by two processes that went on parallel to each other but with changing intensity. One of them was deindustrialisation resulting in the disappearance and functional transformation of industry, whereas the other was rehabilitation aimed at the survival of the old industrial establishments through a total or partial renewal. The former was typical of the northern and north-eastern parts of Budapest and the latter mainly characterised the southern and south-eastern parts. In some cases the two processes took place in neighbouring areas or within one contiguous area. Besides the two main trends, a third one – reindustrialisation – also occurred. The three proceeded to differing degrees in various industrial spaces, however the main development witnessed has been deindustrialisation.

As reflected by the survey results of 2006, the same and partly contrasting trends experienced by industry in the Hungarian capital until 1998, continued for the following ten or so years. Deindustrialisation had proved to be the dominant factor and it expanded spatially. This is obviously the consequence of a reduction in the number of 'vacant' industrial estates located relatively close to the city centre, so as a result of high demand for similar plots, even those to be found further away and/or in less accessible locations became sought after. For this reason deindustrialisation has come to the fore in those northern and especially southern industrial areas, where it was less typical during the 1990s. It seems these areas are trying to catch up with the successful functional restructuring that has taken place far in the north of the capital. The expansion of the City also contributes to this. The so called 'centre functions' expand along the sectors from the CBD to outlying neighbourhoods.

In the 1990s, deindustrialisation proceeded most rapidly in the northern half of Budapest (13th district) and after the turn of the millennium the process shifted even further northward and has become a characteristic feature of those industrial areas. As a result of this, a formerly industrial district has vanished in this part of the capital. A rapid shrinkage in the 13th district is primarily due to the closure of firms (between 1990 and 1995 only 65 firms were closed down, but ten years later already 345 suffered the same fate), and those still operating occupy small plots (*Fig. 2*).

In the beginning of the 21st century, with a view to the long term, manufacturing is viable only in the eastern part of Budapest with a remote location from the city centre, unfavourable accessibility and a specific sectoral pattern



Fig. 2. Functional transformation of industrial areas in the 13th district of Budapest. *Source:* Surveys carried out in 1998 and 2006.

of industry. Perhaps this is the explanation for the high share of industrial areas in the 10th district during the 2006 survey, an area that has shown only moderate deindustrialisation. Investments aimed at rehabilitation were purposed for modernisation of the industrial estates which is not so spectacular from the outside spectator (*Fig. 3*).

Parallel with deindustrialisation, a reindustrialisation process is also under way. One of the visible identifiers of this trend is the considerable growth in the number of industrial firms. However, a restricted expansion in industrial areas seemingly contradicts this trend. The reason may be caused by a minimal share of the new establishments partnered with the ongoing decrease in the traditional ones. One might have the impression that most of the new firms do not add to a real enlargement of the industrial areas, seemingly as if their activities did not need much physical space. As a result, these new enterprises barely have any impact upon the extension of industrial areas and spatial pattern of manufacturing. Another factor affecting this outcome is that among the new firms there are many small enterprises based in the old industrial establishments, frequently occupying only some of their rooms or a single premises. Consequently, there are a growing number of firms located within a defined space, i.e. the density of firms is increasing. At the same time, as indicated by the survey of 2006, there is an as yet slow shift in the main area of industrial production from the central districts towards the outer districts.

In summary: as a result of several trends, traditional industrial areas have recently tended to shrink, so that many of them have become redundant and available for alternative use and further development.

Types of reutilisation

The way derelict industrial buildings and areas can be redeveloped depends on several factors: their size, location, accessibility, extent of contamination, quality of their environment, urban policy considerations, the wishes of their proprietors, etc. Even though these areas are very important from the perspective of urban planning and development (as restructuring has a strong impact upon the future urban pattern and functional structure) local government and planners have a rather limited ability to interfere in their utilisation (e.g. through the regulation of the height of buildings). The municipality of the City of Budapest and district governments do not always agree upon the development of former industrial estates. Another handicap has been the lack of a master plan for Budapest for around ten years. As a result, development frequently took place in a spontaneous and sometimes unsuccessful manner, because many of the investments failed to be carried out at all, or were not executed in such a way as they should have been. As industrial areas are, as a

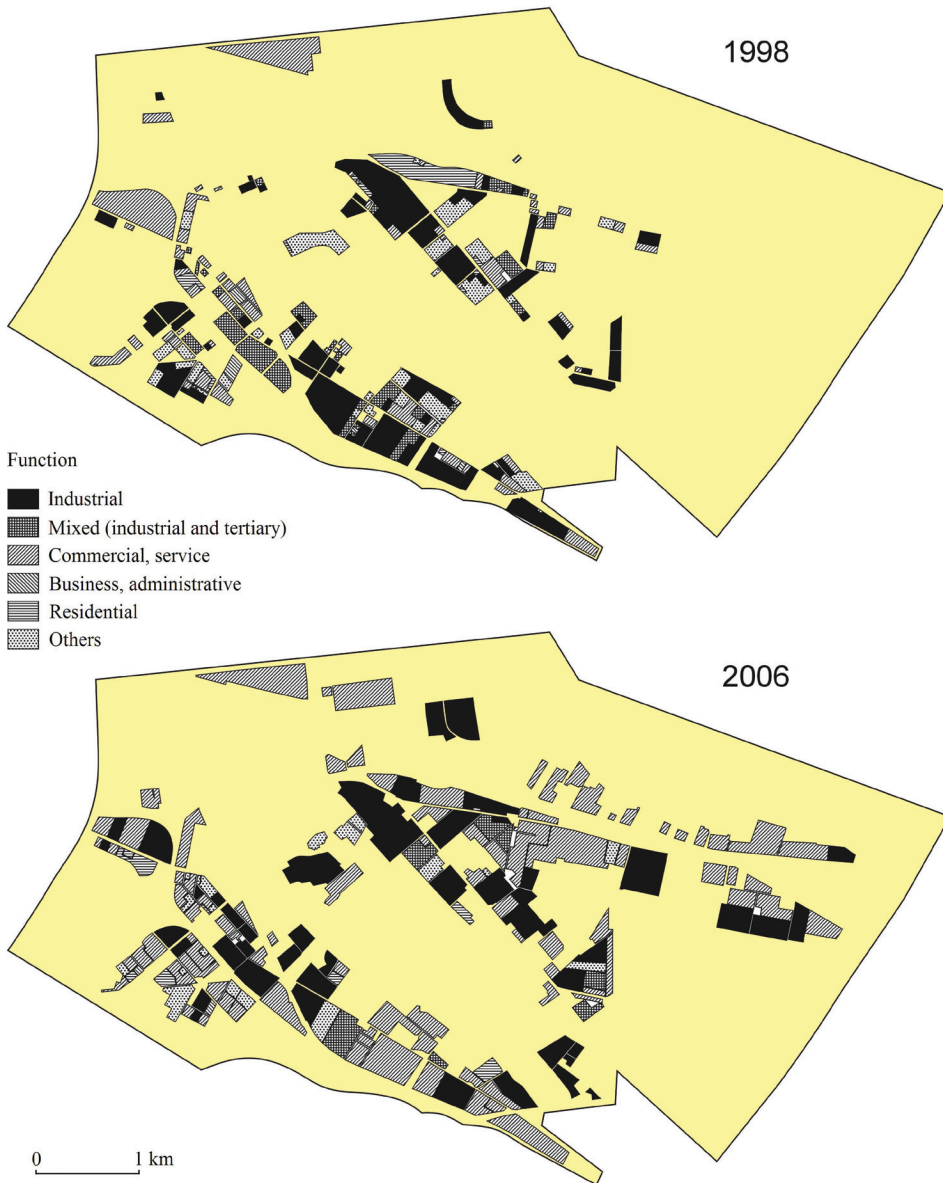


Fig. 3. Functional transformation of industrial areas in the 10th district of Budapest. *Source:* Surveys carried out in 1998 and 2006.

rule, in private ownership and this is of prime consideration, urban planners in reality have very little influence. The decisive factors are market forces and the intentions of owners and investors.

In an environment of general confusion following the regime change, abandoned industrial plots and buildings could be easily bought for a relatively low price. This fact can be explained by the almost concurrent appearance of similar plots on the property markets of central and eastern European capitals, and this sudden oversupply was used by foreign investors to buy-up industrial establishments cheaply, these areas now being at their disposal. In the phase of passive urban development it was governed by the investors and owners who felt free to decide about the use of their land (SZIRMAI, V. *et al.* 2003). Similar to the practice in western cities, active urban development has been a more recent development in Budapest. In essence, local governments take decisions about the location of future facilities and they seek investors for its implementation, not vice-versa.

Usually, the redevelopment or reutilisation of those redundant industrial areas that have a favourable geographical setting, good transport connections and less contaminated land have taken place at a faster rate. These relatively clean places were preferred by investors, because reclamation is an expensive and time consuming intervention.

There are two basic ways to reutilise former industrial establishments. In the event the new function is intended to be carried on within the old facilities (that may have previously undergone some rehabilitation and transformation), this internal change is less spectacular, and was labelled by Cohen as 'adaptive reuse', as the old buildings are being adapted to the new function(s) (COHEN, P. 1998). The second possibility, after removal of the structures that previously stood on the plot, a brand new complex (in internal architecture, design and outward appearance) is erected, typically being used for non-industrial activities. These constructions can leave a spectacular imprint on the urban landscape, so this type can be labelled urban renewal (*Fig. 4*).

The two paths to reuse have much in common with one another. No expressed differences can be detected even if some of the former are feasible with one of the cases (e.g. loft apartments can only be built inside of industrial buildings). A general trend is that the reuse and functional change of smaller industrial establishments takes place more rapidly than larger ones.

Formerly industrial areas and buildings are most frequently reused by (in no order of importance) commercial, service, office, residential, storage and logistics functions. Research points out a temporal shift between the above functions, in relation to investor preference. In the 1990s commercial, service, and office usage dominated, and functional change took place along these lines (KISS, É. 2002a,b). This was associated with a rapid privatisation of trade, a sore deficit in shopping centres and a lack of modern office blocks; at that time there was a high demand for similar facilities. By the turn of the millennium the national economy was taking flight following a deep crisis after the regime change, and with this came stabilisation, growing incomes

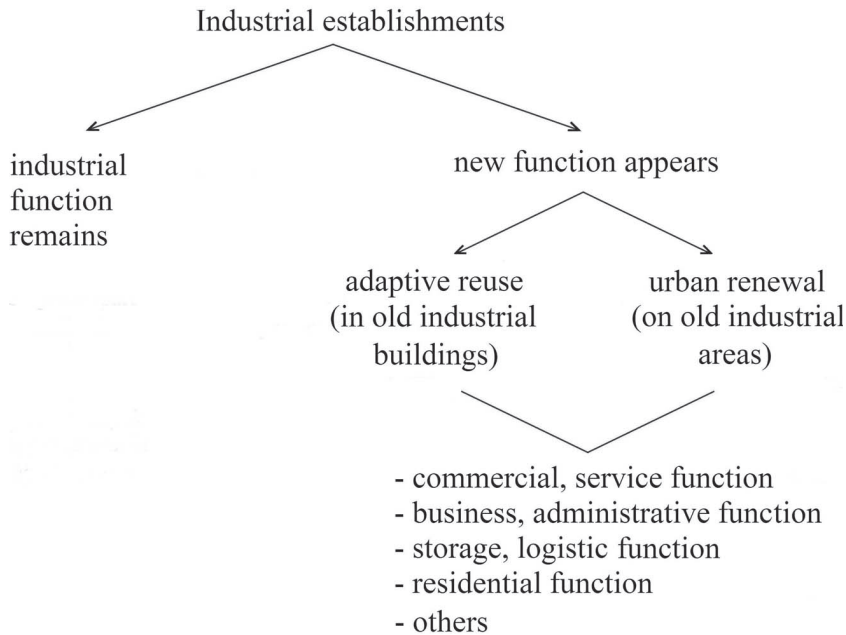


Fig. 4. Major types of reutilisation of traditional industrial establishments
 Source: Edited by author.

and rising demand for quality housing that stimulated residential construction. Storage and logistics functions gained importance more recently, perhaps as a result of major developments becoming localised (along the main thoroughfares), only after the adoption of the new mid-term concept for the urban development of Budapest. Naturally enough, the weight of the individual functions might change within a short period of time, depending on market forces and conditions. These days residential and logistics functions are the most popular, and attractive for investors who seem to be willing to support these developments.

The various functions are visible to a differing spatial degree in the traditional industrial areas. Commercial and service functions have dominated in places with favourable transport accessibility. The size of individual developments might be very different, but these 'high-tech' buildings have a floor space of just under ten thousand square metres on average and a different outward appearance. They are dissimilar to commercial developments beyond the capital's borders which have little architectural merit and are mostly 'market halls' with a simple structure.

Commercial and service functions may appear in both old industrial buildings and in newly built shopping centres in place of former industrial es-

tates. An example of the first are the workshops of the former screw factory along Váci út, where after its reconstruction and renovation a number of units of different size in retailing, repair and service have moved in. A typical representative of the second is Duna Plaza, the first western-style shopping centre in Hungary, which was built on a traditional industrial estate (dockyard), i.e. as a brown field investment. It was opened in 1996, and since then has been followed by a couple of similar shopping centres. The stores accommodated in these centres sell high quality commodities and provide sophisticated services (*Photo 1*).

Offices and buildings for administrative activities were mainly developed in the 1990s, due to the sudden increase in demand after the change of regime. At that time it was a frequent phenomenon to use the old industrial buildings for office and administrative purposes without renovation or modernisation. Leasing out the premises of old factories that were suitable for offices was a source of revenue and supported the survival strategy of companies in the state sector. Later with changes in economic circumstances and a more abundant supply of offices, this practice became less widespread, and the development was accompanied by the emergence of a high demand in modern, well equipped offices with extra services. Following the initial boom, the demand in office space had decreased by the early 21st century. In 2002 there were 15 office blocks under construction in the brown zone, partly on factory sites; only a fraction of similar developments were registered in the following year (ONGJERT, R. 2003). This could be explained by the saturation of the market and the consequent drop in demand, though offices of a high standard are still sought after. Among the stock of office space there are utterly modern, administrative offices built upon traditional industrial sites as brown field investments, through the rehabilitation of the old workshops.

The new office blocks are mainly to be found in the city centre whereas the offices on rehabilitated industrial estates are away from the central areas. These circumstances are somewhat compensated by good transport accessibility and infrastructure. As the rents are lower in the latter, many fledgling businesses choose them as headquarters. Dorottya Yard is a good example of a complete renewal and reconstruction of spacious internal expanses of an old factory in the early 2000s. This is the best example of a loft-office building (*Photo 2*).

A boom in residential construction started with the advent of the new millennium. The former industrial areas, especially the non-contaminated plots with favourable accessibility became the scene of these massive projects. The survey of 1998 reported that residential investment was an infrequent way to redevelop. There were housing projects in the 13th district – formerly part of the northern industrial zone of the capital – as early as the 1990s, but most of them were doomed to failure (Kiss, É. 1999). By the early 21st century, however, due to deindustrialisation and a functional restructuring of the district, the



Photo 1. Duna Plaza built on the site of a former shipyard was the first shopping and entertainment centre in Budapest in 1996 (Photo by Kiss, É.).



Photo 2. This building, called Dorottya Yard, was originally established as a textile factory in the beginning of the 20th century. In the last decade it was reconstructed and has become a modern office block (Photo by Kiss, É.).

townscape and its image had changed completely. This might explain why by 2005 it had become the leader in residential construction (with 3250 flats) among all the districts of the capital city. An annual average of 80 apartments were being built here in the second half of the 1990s, whilst 1349 apartments were constructed between 2000 and 2005. The rate of residential construction also accelerated in the southern and eastern industrial areas of Budapest, e.g. in the 9th district 88 apartments were built in 1995, whilst 1008 were built ten years later. The new developments are financed both by Hungarian and foreign capital. Besides the German, British, Dutch, and Austrian investors, there has been a growing participation of Spanish, Irish and Israeli capital. The newly built apartments as a rule are well equipped, with several rooms, and are frequently found in the 'residential park' format.

Loft apartments appeared in western Europe and North America much earlier than in the eastern half of Europe (COHEN, P. 1998). These days, examples are already to be found in Budapest. These renovated buildings with large floor areas and interior space are highly suitable to meet specific requirements (e.g. matching residential and workplace functions). In many places, mainly confined to the southern and south-eastern industrial areas they are occupied by artists, musicians and painters (SÜTŐ, A.B. *et al.* 2004). Loft apartments frequently wedge in residential areas, and more of them were in planning in several quarters of Budapest (in the 3rd, 9th and 13th districts) in the summer of 2006. One of the largest investments will be the redevelopment of the former Gizella flour mill, where around 100 apartments are to be constructed. Nevertheless, the residential function is by no means likely to be found in polluted or contaminated traditional industrial areas and/or in unattractive and deteriorated environments.

The storage and logistics functions within traditional industrial establishments date from recent years and the number of buildings used in this way is growing steadily. They are functions with a large requirement for space and have expanded over industrial areas further away from the city centre, mainly in those areas with favourable transport connections, especially along the main arterial roads. Lately there has been strong activity in speculative developments in the storage and logistics spheres in Budapest which is a trend that is widely found in the developed cities. In the case of Budapest, this appeared only a couple of years ago and is partly connected with old industrial areas (SZIRMAI, V. *et al.* 2003).

Storage and logistics frequently occur in obsolete old premises of factories. An example is the former Csepel Works, featuring buildings with the inscriptions 'warehouse' or 'warehouse to let'. These premises are of differing sizes and owing to their deteriorated and obsolete state, can be leased much cheaper than the newly built warehouses or those located along the major transport corridors (*Fig. 5, Photo 3*).



Fig. 5. Industrial areas by function in the 21st district of Budapest
 Source: Survey carried out in 2006.



Photo 3. During the socialist era Csepel Works was the largest company in Budapest. Nowadays its area and buildings are reutilised in different ways. The storage function is very common (Photo by Kiss, É.).

Developments of a different nature are not too frequent and make up a very small portion of traditional industrial areas and/or buildings. In this category belong car parks, recreational areas including parks and playgrounds and cultural establishments. They occur in patches and are not likely to considerably expand in the future.

However, the category of 'miscellaneous' requires two additional remarks. Firstly, the storage-logistics function was put into this category for the sake of clarity on the map, thus avoiding additional categories. At the same time it means, however, that most of the areas classed into this bracket perform these two functions and other areas are negligible. During the mapping of the 2006 survey, for this same reason the vacant industrial areas (prior to redevelopment) were classed here because their designation was unknown at that time. The same is true of areas of factories that have closed down and are facing ambiguous futures. Their extension was also very limited in 2006.

The surveys evidenced a direct restructuring, i.e. most of the industrial areas subsequently acquired either a commercial or administrative function immediately after their industrial use. In other cases, functional change was indirect in the sense that the ultimate function was preceded by some other activity. For instance, industry was followed by commerce or storage, changing afterwards into a residential function. So it seems that most of the industrial areas followed a specific path of development.



Photo 4. MOM Park was built on the site of a former optical factory at the beginning of the 21st century. This is a good example for the complex reutilisation. On the left, modern office buildings, whilst on the right, residential buildings can be seen (Photo by KISS, É.).

Today former industrial areas often acquire several functions, and it means that their complex use is generally accepted by the proprietors and planners. MOM Park (located in the 12th district) is a good example, where residential space, commercial and service units coexist with administrative and office space, all built on the site of a former industrial company (*Photo 4*).

As a result of the functional change, a considerable portion of the traditional industrial areas of Budapest have been put to use again by commercial and service functions, but residential, storage and logistics also occupies significant and rapidly growing expanses. A most spectacular example of restructuring is the 13th district, turning from an industrial quarter into a business district over the past 20 or so years. This is the most dynamic district of the capital and is still the scene of huge development projects (e.g. the revitalisation of the Danube bank). Due to the functional change the formerly relatively homogeneous industrial areas have also become more heterogeneous in the other industrial districts of Budapest, but of its three main industrial districts, this process was the least intensive in the eastern one.

Conclusions

The developments that were anticipated to take place from the end of the 1990s have made considerable progress up until now. Notably, traditional industrial areas continued to shrink, functional change acquired new dimensions, new functions have come to the fore and structural and functional renewal of the city became even more apparent. The employment arena has also changed profoundly. In many places, the industrial function has been replaced by a multi-functional pattern of workplaces. Moreover, functional change cannot be considered to be a finished process. In fact we are witnesses to a new city in the making, with manufacturing continuing but without traditional industrial areas. This will have a deep impact on the physical environment, the urban living space and local societies.

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