

KOCKA bar and restaurant,
Budapest. Architects: Zsolt
Alexa, Donát Rabb, Ákos
Schreck, Tímea Molnár,
Balázs Turai, Pap Szabina,
Ferenc Kís (Minusplus)

KOCKA bar a reštuarácia
Budapešť. Architekti: Zsolt
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Photo Foto: Tamás Bujnovszky

VALUE SAVING AND COMMUNITY USE REGARDING URBAN RENEWAL Protection of Hungarian industrial heritage and possibilities for its reutilization at the turn of the millennium
ZÁCHRANA HODNÔT A VEREJNÉ ÚČELY V KONTEXTE MESTSKEJ OBNOVY Ochrana maďarského priemyselného dedičstva a možnosti jeho opätovného využívania na prelome nového milénia

Nehnutelné pamiatky sú súčasťou univerzálnej kultúry, ktorá poskytuje prehľad o spoločenskej štruktúre obdobia, v ktorom bola vytvorená, o charaktere štátneho zriadenia a technickej a výtvarnej úrovni daného obdobia. Rozvojom priemyslu došlo k významným zmenám v urbanizácii. Továrne situované do prírodných lokalít pritiahli davy obyvateľstva, avšak populačným rastom sa obytné zóny zmenšili a továrne, ktoré sa pôvodne nachádzali v okrajových zónach, sa postupne stávali súčasťou mesta. Zahľtenie vnútorných zón, nárast cien pozemkov a stúpajúca rola funkcií tretieho sektora v rámci mesta viedli k premiestneniu výroby mimo mesta. Po sedemdesiatych a osemdesiatych rokoch 20. storočia bola dôsledkom týchto procesov priemyselná výroba smerovaná do aglomerácií. V súčasnosti je aktuálnou úlohou hľadanie vhodného prístupu k priemyselným stavbám a opusteným továrňam v rámci štruktúry mesta. Príklady ochrany priemyselného dedičstva v postsocialistických krajinách, ktoré sa nachádzajú vo východnej a strednej Európe, majú osobitné, spoločné korene. Priemyselnú činnosť v Maďarsku 20. storočia definovala rýchlá expanzia kapitalistického priemyselného rozvoja, neskôr komunistické plánované hospodárstvo. Tieto dve významné obdobia viedli k architektonickým výtvorom, ktoré sú významné jednak z hľadiska štýlu charakteristického pre dané obdobie a jednak z historicko-stavebnej stránky. Pozostatky priemyslu svedčia o významnej zmene z pohľadu technológie a hospodárskej situácie. Nehnutelné pamiatky, v ktorých bola výroba ukončená alebo násilne likvidovaná, sa v súčasnosti začínajú opäť využívať. Okrem prevažujúcich kultúrnych funkcií iniciovaných štátom, zaznamenávame aj aktivitu súkromného sektora. Príspevok sa zaoberá nielen teoretickým pozadím priemyselných stavieb, osobitným stavebným druhom pamiatkovej ochrany, ale tiež „dobrou praxou“ prostredníctvom príkladov v Maďarsku, ktoré predstavujú úspešné využitie aj v rámci medzinárodného kontextu. Popri analýze stavebných slohov a konštrukčných schém tu hrá dôležitú úlohu situácia, v ktorej sa v rámci mesta tieto budovy nachádzajú.

V rámci Maďarska je prvým a najautentickejším múzeom histórie priemyslu Budinská zlievareň

železa. Švajčiarsky rodák Ábrahám Ganz tu otvoril vlastnú zlievareň v roku 1845, pričom bývalá správa ukončila výrobu v roku 1964.

Malý zásah do pôvodnej priemyselnej pamiatky môže viesť k pomalšiemu, ale dlhodobiejšiemu výsledku. Do v súčasnosti nevyužívaného objektu 30/10 kV transformačnej stanice z roku 1934 bolo situované Múzeum elektrotechnológie. Ku konverzii došlo okamžite po ukončení prevádzky stanice a podarilo sa zachovať niekoľko kusov strojného zariadenia v pôvodnom stave.

Problémom, s ktorým sa často stretávame je, že aj v prípade, že stavebný fond spĺňa funkčné požiadavky, výmenu si žiada strojné vybavenie. Čerpacia stanica MESSER HUNGAROGÁZ sa nachádza v Budapešti, na území bývalej továrne na výrobu kyslíka. Vďaka vnútornému funkčnému usporiadaniu bola pamiatka vhodná pre ďalšie racionálne využitie a výrobu. Zachovanie dvojice hál bolo pokrokovým ekonomickým a súčasne uvedomelým krokom.

Udržateľnosť obnovy možno zaručiť integrovaným prístupom. Najúspešnejším komplexným projektom je príklad kultúrnej štvrte Zsolnay v Pécsi, ktorú sa podarilo realizovať v rámci projektu Európskeho hlavného mesta kultúry v roku 2010. Atmosféru celkovo zrekonštruovanej plochy s rozsahom 42 700 m² a novovybudovaného súboru objektov, umocňujú rozličné detaily pôvodných keramických prvkov. Úspech projektu, ktorý kombinuje návrhy viacerých architektonických ateliérov, je založený na sérii drobných zásahov: k obývateľnosti komplexu prispelo jeho rozdelenie na zrozumiteľné priestory disponujúce ľudskou mierkou.

V adaptívnej recyklácii tkvie určité nebezpečenstvo: pôvodná atmosféra je veľmi zraniteľná. Môže dôjsť k rozporu medzi finančne motivovanými záujmami súkromných investícií a ochrannou pamiatok. Prvá maďarská kancelária pre verejnosť LOFFICE v Budapešti bola založená v jednej z bývalých tlačiarň hudobní hudobnej akadémie. V tomto prípade nedošlo k definitívnemu prispôbeniu priestoru, k zmene funkcie môže dôjsť kedykoľvek. Zmena funkcie často vylučuje možnosť príprav – vzhľadom na vyplývajúce následky je táto skutočnosť akceptovateľná v prípade rozsahovo malých priemyselných

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stavieb, ktoré menej ovplyvňujú miestnu identitu. Bar KOCKA predstavuje výstredný prvok ulice Kazinczy v Budapešti, kde sa búraním priľahlých nájomných domov odhalila kompaktná hmota, ktorá sa stala súčasťou verejného priestoru.

Halové objekty sú vhodné najmä pre inštitúcie, ktoré poskytujú priestor hromadným verejným zhromaždeniam. Cieľom sídla MILLENÁRIS bolo zriadenie vysokokvalitného výstavného a spoločenského centra prostredníctvom aktuálnych trendov obnovy hodnotných stavieb. Zachovaním historických častí bola identita miesta zachovaná.

Úspech zásahu realizovaného prostredníctvom dôkladnej sociologickej stratégie zameriava pozornosť k remeselnej kultúre, ktorá sa hlboko dotýka našej identity. Spoločenský dom továrne na rukavice stojí na hlavnom námestí jednej z najchudobnejších štvrtí Budapešti. Program štvrte Magdolna je zameraný na odstránenie zhoršujúceho sa stavu úpadku územia. Obnova územia nevyhnutne vyžaduje zapojenie miestnych ľudí. Takmer zabudnutá továreň na rukavice sa stala centrom tohto projektu.

Dočasné využitie priestoru môže poskytnúť dočasné riešenie ochrany rýchlo upadajúcich

priemyselných pamiatok. Rola dobrovoľníkov je veľmi dôležitá. Jednou z posledných iniciatív je letná škola HOLIS 2014, ktorá sa zamerala na opätovné využívanie továrne na plst, nachádzajúca sa v západomaďarskom meste Kőszeg.

Prvou otázkou pri rozhodovaní o ochrane priemyselného dedičstva je, pre koho pamiatku obnovujeme. Priemyselné múzeá, ktoré sú vytvorené v chránených priemyselných budovách in situ sú určené pre odbornú spoločnosť. V súčasnej hospodárskej situácii nie je tento typ funkcie udržateľný. Súčasná spoločnosť sa posunula ďaleko od atmosféry priemyselných lokalít 20. storočia a predchádzajúcich storočí, takže účinnejšou môže byť skúsenosť založená na prezentácii. V každom prípade je cieľom nájsť rovnováhu medzi ochranou a adaptívnym opätovným využitím. Pri väčších továrenských areáloch musia byť reflektované potreby širšej spoločenskej vrstvy tak, aby bol súvisle zachovaný celkový súbor objektov. Význam danej priemyselnej pamiatky ovplyvňuje miera architektonického zásahu. Obnova nezávisí od pôvodnej funkcie stavieb; ich využitie sa odvíja od urbanistických výhod ich situovania. Každá budova a územie vyžaduje špeciálny prístup v danej situácii.

INDUSTRIAL CULTURE AND IDENTITY

The culture of manufacture has its roots in everyday life. In the guild manufactories renowned in history, and later within industrial working-class families, traditions of expertise, working methods and special techniques have been passed down from generation to generation. Beside the concentrated placement of factories, capitalist industrial development also brought about residential colonies. The residents of the workers' settlements formed autonomous communities, where close-knit of life involved a strong feeling of togetherness, implying that cultural conventions generally remained within the community. Consequently, it could be interesting to examine these enclosed workers' settlements, since in this way more information can be obtained about the larger industrial area and its operation. The collective memory of traditional industrial towns holds a wealth of still unknown knowledge that could be lost in a short time in case of the closure of the industrial building

or factory zone, and without conscientious collecting work it could vanish ^{/1/}. The exact knowledge of the applied processes and mechanization was linked to specific towns or regions, thus determining their identity for a long time. Industrial heritage protection pays concentrated attention to the protection of immaterial factors alongside protecting the physical manifestation of industrial activity, the building stock. The importance of such factors has grown significantly due to the rapid technological and social change of the 20th century. The memory of the people plays an important role in this study, since the abandoned buildings and machines are difficult to interpret without written or authentic pictorial sources, and provide a less informative picture regarding their use ^{/2/}. Authentic heritage protection covers not only the protection of the localized material remains, but also takes the mobile and spiritual heritage into account ^{/3/}. Thus the industrial area and the industrial building in the narrow sense – compared to other types of

monuments whose usage still haws a living culture – require the application of significantly more complex criteria to be taken into consideration.

THE INTERNATIONAL PRACTICE OF INDUSTRIAL HERITAGE PROTECTION AND THE CHARACTERISTICS OF THE EAST CENTRAL EUROPEAN REGION

Within individual countries, the protection and presentation of national industrial heritage serves to strengthen the national consciousness, because it clearly demonstrates the role of the nation in the industrialization of the world ^{/4/}. The pursuit of industrial heritage protection started in Great Britain ^{/5/}, later, following its successful example, other countries of the world began to pay even greater attention to preserving industrial monuments ^{/6/}. Placing buildings under individual protection has established a social demand that placed these culturally important monuments on the level of general awareness of matters of identity. Because of the complex historic background

of the heritage buildings, in time larger-scale revitalization plans were formed that concentrated not only on the individual structure, but on global-scale, comprehensive rehabilitation programs developed for different regions. The most successful interventions are the revitalization of those port areas that fell into disuse due to changes in ship transport and storage ^{/7/}. The fate of transportation facilities with their related industrial zones resulted in spectacular interventions at a local level, by activating and using the areas given to the public. Rehabilitation of larger coherent industrial areas that, given their technologies ^{/8/}, were established mainly in colonies outside the city, has been faced with more significant problems. However, in the last decade precisely this area of heavy industry, especially projects related to mining areas have been realized – of which the best known is the transformation of the Ruhr region ^{/9/}.

The situation of industrial heritage protection in the post-socialist countries situated in the Eastern part of Cental Europe shows a more complex picture. Special attention is understandable because



Photo Foto: Erzsébet Urbán

Foundry Museum,
Budapest
Zlievarenské múzeum,
Budapešť

of the specificities of the last hundred years' history: capitalist industrial growth of the first part of the century was replaced by socialist industrial development after World War II. In the era of the communist state, beside the ever-changing economic demands, a major difference lay in the aggressively controlled planned economy, not always led by rational decisions, which remained in place for almost 40 years ^{/10/}. Beyond the fate of the individual monuments, we must take into account the specific historic situation that defined not only the economy, but also the theoretical and practical scope of historic preservation. In this region, thanks to the continuous expansion of industry through the planned economy, a dual process can be observed regarding the industrial building stock. On the one hand, a great part of the industrial heritage established in the late 19th century and especially at the time of the industrial development in the early 20th century has managed to survive intact. These nearly 100-year-old properties were formed by the expectations of the artisanal system that established the general system of production after World War II. On the other hand, in the meantime the heroic era of socialist production created huge new industrial areas. The development plans gave priority to the growth of the heavy industry, far surpassing the agricultural development in this region ^{/11/}. Without doubt, it can be stated that during this time the region became relatively advanced industrially, even in the European context ^{/12/}. In the immediate vicinity of the production centres within in the jurisdiction of the Soviet Block, approximately 1000 cities were founded – 11 of which were in Hungary – that functioned as a kind of melting pot, since the workers moved to their new homes from different social layers and different regions of the country ^{/13/}. Currently, these industrial areas established in the Soviet era generate mixed feelings, since during this time the newly created industry did not serve the country's own interest, but was treated as part of the broader economic politics of the Socialist Block, not least as a political tool for a foreign power ^{/14/}.

The democratic political change of the early 1990s caused a massive shock in the massively overproducing industrial sector. The economy started to draw upon more realistic demands,

resulting in the abandonment of many industrial areas. At the same time, the post-socialist countries were subjected to a secondary process of colonization – this time by the Western capitalist economy – which was interested instead in the shrinking and liquidation of certain industries by buying up the market, thus creating an area of distribution for its own capacities. A practically direct result of the economic background processes was the revaluation of property values. The private sector, representing its own economic interests, destroyed industrial quarters that became regraded as inner-city properties, piece by piece, and the myopic insistence on the right of further utilization of the land obliterated a great quantity of valuable structures.

Nor did there exist, at this time, any clear social judgement of these values. The industrial heritage of the modern era was considered a burdensome dowry, identified all too strongly with the former political system. With the ideological change, there emerged a public sentiment that the mementos of the communist period were also to be erased. The social indifference was further intensified by the excessive leniency of the political leadership towards major investors, even if this practice can be justified on economic grounds. Under the guise of privatization, a significant quantity of industrial areas arrived into the real estate investors' sphere of interest through various dubious transactions. Abandoned, the factory sites slowly began to decay. First, the soul of the production, the movable machinery and equipment 'disappeared' from the buildings, then the looted factories were condemned to demolition. Even if the legitimate construction authorities intervened in time, monument protection was granted almost exclusively to the industrial buildings themselves, so the structures, components and machinery related to the given technology, as well as the written documentation demonstrating the operation and the history of the factory, remained unprotected and disappeared without a trace ^{/15/}.

The change of industrial technologies, socioeconomic transformation and the geopolitical displacement of the activities are natural processes. However, in connection with this process a series of significant, transnational changes have themselves occurred. The global world economy eliminated industries in

Electrotechnical Museum,
Budapest. Architects:
Ágost Gerstenberg
and Károly Arvé

Elektrotechnické múzeum,
Budapešť. Architekti: Ágost
Gerstenberg a Károly Arvé

several regions or on the contrary, put emphasis on specific areas. Generally we can say that all of these shifts had a negative result regarding the complex heritage of industrial areas. It might not be a coincidence that the first awareness-raising manifesto for the management of these globally recognizable, and serious problems was created precisely in Eastern Europe. In 2003 a TICCIH ^{/16/} Conference was held in a western Russian city where a document was created in the spirit of the Venice Charter ^{/17/} of 1964: the Nizhny Tagil Charter, ^{/18/} which assumed the task of conserving historically valuable ensembles. Furthermore, the charter is useful in further training and education, so that the most important guidelines of industrial heritage protection would be integrated into the public consciousness on a social level ^{/19/}. Subsequently, the Dublin Principles were adopted in 2011, in connection with the principles of ICOMOS: their focus is on the protection of material and spiritual assets of industrial heritage, which affect more possible alternatives for further utilization. Similarly to the TICCIH document, these guidelines consider the social embedding of the heritage as the most important task, beyond that of scholarly investigation, emphasizing it as the location for public activity.

A strong prejudice persists in the neighbouring countries against the industrial monuments of the East-Central European post-socialist region, since industry was one of the most important tools of Communist Party propaganda in this area ^{/20/}. At the same time, the industrial monuments of the countries beyond the Iron Curtain still have a great significance in world heritage as a whole. It is well proved by the fact that the Wieliczka salt mine in Poland was the first industrial site on the UNESCO World Heritage List ^{/21/}, later followed by the silver mines of Banská Štiavnica in Slovakia, and in 2008 the medieval silver-mining town of Kutná Hora in the Czech Republic ^{/22/}. However, if we look through the list, it is apparent that at present, mining areas, buildings of the textile industry or iron metallurgy are considerably under-represented compared to landmark-protected power plants, technological structures, handicrafts and transportation.

Fortunately, over the last decade important progress has been made in his region in the study and protection of our industrial heritage. In 1997,



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Photo Foto: Tamás Bujnovszky

Messer Hungarogáz,
Budapest. Architect:
Géza Kendik (A4 studio)

Messer Hungarogáz,
Budapest. Architekt: Géza
Kendik (A4 studio)

a TICCIH Conference was held in Hungary about the mining and metallurgy heritage of East Central Europe, involving study trips to Slovakia; between 2001 and 2007 four international biennials were held in the Czech Republic, five workshops in Romania, 13 meetings in different areas of Poland and three conferences in the Croatian city of Rijeka ^{/23/}. Due to the effective cooperation of the meetings, the survey of the industrial heritage began in the different countries with establishing a database concerning the former Soviet Bloc.

Because of the changes in power politics, industrial areas that formerly were physically linked are today divided by national borders in many cases, so it is worthwhile to know the coping strategies and the heritage list of the surrounding nations, too ^{/24/}. The ERIH ^{/25/}, the online interface collecting the network of the tourist routes of the transboundary industrial heritage, currently includes more than 1,000 entries from 43 countries. The industrial heritage of these landscapes can be explored by sixteen regional routes. On the thematic routes, beside the diversity of the European heritage, the common roots are also decipherable. Cooperation between nations, organizations

and professions is important in the exploration and documentation of the industrial heritage. The goal is the creation of uniform databases that are clear for all users, and allow fast research ^{/26/}.

The following table summarizes the industrial monuments that were declared protected in Hungary between 1990 and 2014, in four typological breakdowns ^{/27/}. The most recent official list of the protected monuments was published in the December 2013 issue of the Hungarian Gazette ^{/28/}. A mere 7 % of the industrial monuments declared protected as of August 2014 date from the communist era, which is a strikingly low proportion compared to the number of still extant buildings constructed during that time.

THE SITUATION OF INDUSTRIAL HERITAGE IN HUNGARY

Parallel to the region's common history, there exists a particularly valuable stock of industrial architecture in Hungary. Our study affects two historical categories of industrial heritage created by two typically differing eras and power politics. From the capitalist development occurring in the decades of the turn of the century, a huge quantity

of building arose concentrated in Budapest, in the second major urban area of the Austro-Hungarian Empire, but significant industrial centres evolved in the rural areas of the country too, mainly for processing agricultural products^{/29/}. Most of these buildings were still used after World War II, and are now considered to be the most endangered monuments on the basis of their age. After 1945, the Communist regime concentrated on developing heavy industry. During the socialist era, the realization of these industrial centres always enjoyed priority from the early 1950s^{/30/}. With the spread of modern construction technologies, the building of these industrial sites led to an internationally acknowledged industrial architecture appearing in Hungary^{/31/}. The physical aging of these monuments was less significant compared to the buildings of the previous boom, and these are usually still in use today – even if after their economic restructuring. However, it can be generally said that the abandoned industrial sites of both periods resulted in irreversible processes of decay.

Research and documentation of Hungarian industrial architecture is relatively undeveloped. The ambitions towards documenting the buildings that acquired the centre of attention because of the realized transformations as a result of the economic and social changes, began in the last decade. However, the number of the remaining buildings is gradually declining, and the constant change of industrial production, as well as the final termination of specific domestic industries, has

put the last significant building ensembles in danger. Recognizing this, researches were initiated by historians, sociologists and architects, hence documentation with the appropriate context has expanded in Hungary, too. At last the international attention has turned towards Eastern Europe, where the homogeneous economic environment of 20th century industrialism and the associated architectural aspect of industrial production can still be found^{/32/}.

For the monuments generated by capitalist industrial development, which fall within the general typology of Historism, studies covering the broader history of architecture have only touched upon the topic briefly. Beyond the presentation of structural development, historians have not placed much emphasis on these moderately articulated industrial buildings^{/33/}. The two decades following World War II included not only the renewal of these industrial buildings, but even more notably the dynamic building process of socialist industrialisation. Considering its strong political representation, this building stock was frequently published, thus granting both their establishment and their concomitant historic evaluation special attention^{/34/}. Since postwar industrial architecture was at first briefly characterized by the historical survival of Modernism, then by the mandatory idiom of socialist realism, then again by the style adapted to international modern architecture, the historic writings in this period had a clearly identifiable source^{/35/}.

Type of the monument and area	Established between 1947-1989	Declared protected between 1990-1999	Declared protected between 2000-2011	Declared protected between 2012-2014	All protected monuments
1. Industry	1	6	56	8	70
Agriculture and Food Industry		(4)	(36)	(6)	(40)
Heavy Industry	(1)	(1)	(5)	(1)	(7)
Other Industry		(1)	(15)	(1)	(17)
2. Transportation	4	4	17	5	26
3. Water Infrastructure			9	4	13
4. Technology	3		2	4	6
All	8	10	84	21	115

Industrial and technical monuments of Hungary declared protected between 1990 and 2014
Priemyselné a technické pamiatky Maďarska vyhlásené za chránené od roku 1990 do 2014



Photo Foto: Erzsébet Urbán

Because of the applied construction technologies, more attention was turned towards the monuments built during the turn of the century, as well as during the socialist era ^{/36/}. However, for a systematic scholarly evaluation of industrial architecture as a coherent entity, we had to wait till the turn of the millennium ^{/37/}.

While the indifference of the greater part of Hungarian society treated the disappearance of the industrial monuments (whether the building stock, artefacts or the intangible assets of collective memory) with an understandable reluctance because of questions of political ideology, the authorities, in turn, inexplicably failed to pay attention to the fate of this huge wealth of property ^{/38/}. Neither the architecture of socialist realism nor modernist architecture are viewed as valuable, and the architecture of the 1950s and 1960s is linked to a political period generally regarded as worthy of little more than contempt. At the same time in historical and architectural circles, a process of exploration and salvage began ^{/39/}. For the time being, the protection processes of uniformly preserved built environments have been launched only in the bigger socialist industrial cities (Dunaújváros in Central Hungary, formerly known as Sztálinváros ^{/40/} (= „Stalin Town”), or Miskolc and Salgótarján in terms of mining and heavy industrial metal production in the North Hungarian Mountains) – in fortunate cases the associated industrial monuments also came into the centre of attention. But generally speaking, the appreciation of the socialist realistic architecture of the 1950s and the modernist built heritage have not yet been incorporated into the public consciousness.

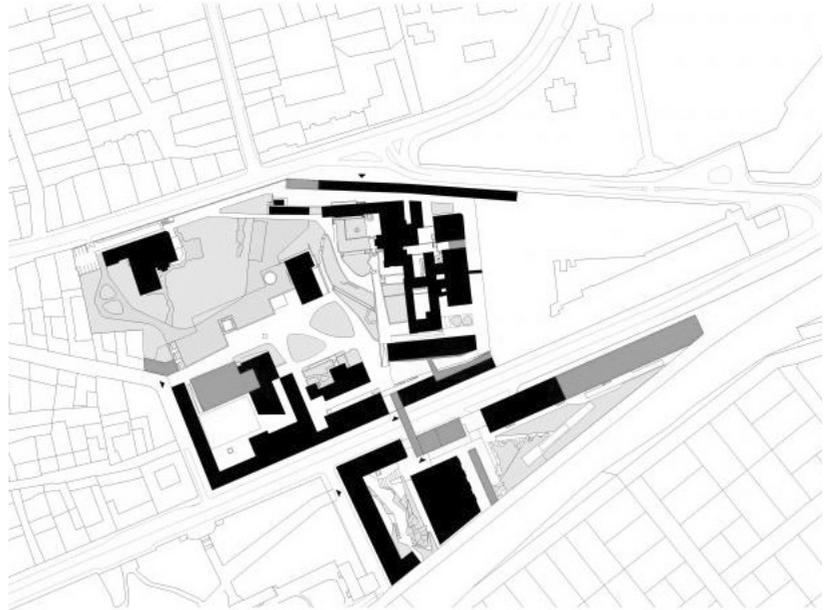
The Hungarian situation is formed by a complex layering of historical heritages, each with a specific and controversial economic-political background. However, the worldwide recession following the economic recovery has wrought considerable changes on the architecture of the turn of the millennium. While previously an abandoned industrial site had its only value in terms of real estate, in the last couple of years the number of new buildings has decreased significantly, and thus the issue of rehabilitation has come to the fore. This tendency is not only progressive, but particularly beneficial for the preservation of industrial heritage, because due to their character these buildings allow for

versatile architectural utilization – with the reconstruction of their current values – and can provide a special built environment. The rehabilitations are not determined by the former function of the buildings: their further use would instead depend on the urbanistic advantages of their location. This is part of a natural urbanizational process: the former industrial sites find themselves inside residential zones because of the expansion of the city, or the former yet spatially integrated manufacturing culture acquires a further use. These monuments attract much more attention than the heavy industrial heritage of the communist era, typically found at the peripheries of the settlements, so that further utilization is more difficult.

In our case studies, we wish to give a broad picture of the millennial situation of the Hungarian industrial heritage. Now, 25 years after the fall of the Iron Curtain, the buildings of the industrial heritage are no longer considered merely to be discarded relics^[41]. Our investigations touch upon monuments established in the periods of both capitalist and the socialist industrial development. Thus, a wide range of styles and building structure systems can be examined from the aspect of utilization. A far more important factor is the urbanistic situation of the building, which significantly affects the potential from the investors' point of view. A diverse image has developed about the role of the private sector and the government – typically regarding the question of the new function. Thanks to specific examples, we examine the target audience, too – since the most important effect on the survival of the industrial heritage is how it is incorporated to the public consciousness. Those utilizations that only partially involve values – typically linked to architectural characteristics – however play an important role in this process. Through the intensive utilization of these 'objets trouvés', a bridge is created in the communication of the cultural legacy of the industrial heritage.

IN SITU INDUSTRIAL HERITAGE

Hungary's first industrial history museum is the IRON FOUNDRY OF BUDA. In the 19th century, several industries were established to the north of the foot of Buda Castle because of the good transport conditions: first by ship from the Danube, then by the construction of the railway,



Source Zdroj: plan by MCXVI architects

which made every part of the Austro-Hungarian Empire accessible. The Swiss-born entrepreneur Ábrahám Ganz opened his own foundry in 1845 in this territory; the part of the foundry that today functions as museum was built in 1858. Due to the production of railway wagon wheels, then the huge developments for the grain-milling industry, this small centre grew into a huge factory, yet in the 1930s the dynamically developing city reached the plants that were originally located on the outskirts. In the midst of continuous demolitions, the ancient centre of the works ceased production in 1964. Not much later, the functioning machinery was assigned conservation status and the foundry museum was established. In addition to the display of the devices, a collection was created about the development and the heroic age of the industry, along with a research centre that collects and presents the related products. One of the most authentic Hungarian industrial history museums,^[42] the Iron Foundry is also one of the most popular specialized museums in the capital today. Its expansion has regularly been proposed, but beside the economic questions, the system

Zsolnay Cultural Quarter,
Pécs. Site plan – new
interventions. Architect:
MCXVI architects

Kulturna štvrť Zsolnay, Pécs.
Situácia – nové zásahy.
Architekt: MCXVI Architekti

Zsolnay Cultural
Quarter, Pécs. Architect:
MCXVI architects

Kulturna štvrť Zsolnay,
Pécs. Architekt:
MCXVI Architekti



LOFFICE, Budapest.
Architects: Péter Kis,
Csaba Valkai, Gábor
Balázs (Atelier Peter Kis)

LOFFICE, Budapešť.
Architekti: Péter Kis, Csaba
Valkai, Gábor Balázs
(Ateliér Peter Kis)

Photo Foto: LOFFICE

of cultural institution management has always thwarted it. The professional renovation of the hall is the outcome of preserving the machinery of the museum: in the case of some units, the elements could be replaced only on the site using the correct historical technologies. Today, one segment of the hall functions as an event area as well: it hosts the shows of local communities and cultural institutions.

With a small intervention to the original industrial monument, a slower but usually long-term effect can be achieved, and a more securely based and sustainable institution can be set up. A good example for this attitude is the MUSEUM OF ELECTROTECHNOLOGY in the centre of Budapest, located in the former transformation station building. A 30/10 kV transformation station that was put into operation in 1934, this structure was designed by architects Ágost Gerstenberg

and Károly Arvé following the characteristics of the Bauhaus style between the two world wars. Into the surrounding continuous building line, a tight building of reinforced concrete structure was placed. The spaces of the direct-current transformer set opened up from the stairway each level, where the appliances were placed to concrete-walled cells. The building opened to the public in 1976, in 1987 it was granted historic protection, and today is included as a protected landmark on the list of Hungarian industrial monuments. The exhibition spaces were converted from transformer areas and named after outstanding personalities of Hungarian electrical engineering. After the termination of operation, the station was immediately transformed into a museum, and several items of equipment were successfully preserved in their original state. Furthermore, the maintenance of the building has been continuous, so the

exhibition about industrial history can present an authentic image in a complex way. Beyond the scientific research, the museum considers education and preservation of the memory of industrial culture to be important as well. In addition to hosting professional conferences ^{/43/} it serves as a permanent meeting point for the groups of former industrial engineers and workers.

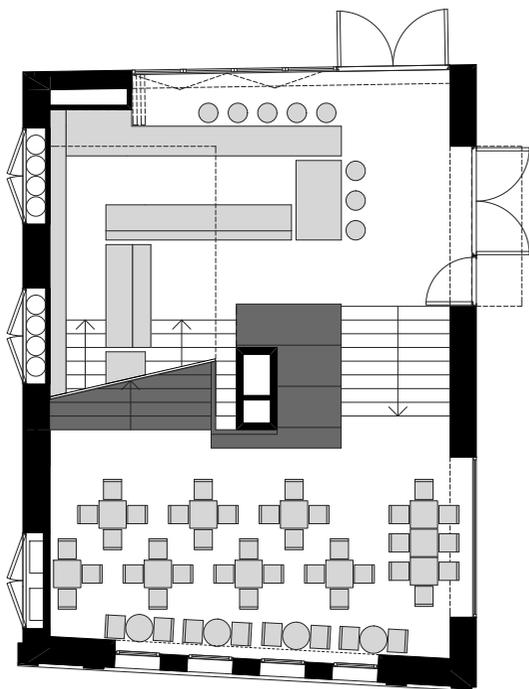
FURTHER USE OF INDUSTRIAL HERITAGE

In the case of currently operational industrial plants, a frequently encountered problem is that although the building stock would meet the utilization needs, the machine pool needs replacement to increase production potential or reflect the development of the technology. The autonomy of architecture becomes questionable: can the itself industrial building be considered a 'tool of production' or it should be handled as an independent architectural artwork? The common public attitude regards these buildings more as containers enclosing production space than valuable engineering works that need to be protected. As a result, the responsibility of the architects is exceptionally high to ensure that the new machine pool required by the technical development should not be solved simply by erecting new buildings. The design group charged with the renovation of the MESSER HUNGAROGÁZ station treated the assigned industrial buildings sensitively, and making economical use of the existing spaces and structures, they gave another chance to the old industrial plant. The company operating in the premises of the former Oxygen Works regarded it as necessary to replace all the buildings of the factory and the filling station from the early 1950s. However, the architects saw an opportunity in these historically unprotected buildings: they successfully integrated the new technological program into the 3500 m² of the existing building stock. At the same time, with the conversion of the inner functional arrangement, they recommended the reconstruction of the buildings, so the investor decided to preserve the building stock. New technologies were placed into the two-aisled main building, while an outdoor working zone was formulated in front of one of the facades of the great hall. The connected smaller hall was configured as the storage area and the public area with the reception.

For the new office and laboratory functions, a new building unit was raised. The contrast between the existing and the new construction was strongly emphasised, ensuring that the main building with its brick architecture from the 1950s has a striking visual separation from the anthracite-grey metal facade of the new wings ^{/44/}. The filling station is an authentic example for the rational further utilization of industrial monuments that are made to be suitable for production again. Rescuing the two halls was important not only from the structural and historic point of view, but it also counted as an economically progressive, conscious step.

DEVELOPMENT OF INDUSTRIAL HERITAGE WITH INTEGRATED NEW ELEMENTS

The revitalization of extensive industrial sites can be set in motion by a well-concentrated initiative, and even sustainable renewal can be achieved by an integrated approach ^{/45/}. Those initiatives can be successful for the disused areas that retain a narrowed production potential and involve functions that meet the needs of the age, but are partially related to the original profile at the same time. We find in this respect the ZSOLNAY CULTURAL QUARTER in the South Hungarian city of Pécs to be the most successful complex project. Since its foundation in 1853, the Zsolnay factory has become a symbol of not only the city of Pécs but also a greater Hungarian national identity; it has attained the status of an architectural and social reference point. Zsolnay Porcelain, eosin and pyrogranite are the most memorable results of the experiments that started in 1870. Because of the constant reduction in production after World War II, the recycling of the vacated industrial buildings for the long term became the mutual interest of the factory and the city as well. Production still goes on at the factory, and the manufactured product is well known: ceramic orders from the original factory not only serve the purpose of monumental renovations but new procedures can be found parallel to the old technology, so the inner development and modernization of the once prosperous industry can be observed too. The reduced manufacturing area and the modern museum display, however, are incapable of filling the 5.5 ha area of the factory's heyday. Within the European Capital of Culture 2010 program, faculties of fine and



KOCKA bar and restaurant,
Budapest. Architects: Zsolt
Alexa, Donát Rabb, Ákos
Schreck, Tímea Molnár,
Balázs Turai, Pap Szabina,
Ferenc Kis (Minusplus)

KOCKA bar a reštuarácia
Budapešť. Architekti: Zsolt
Alexa, Donát Rabb, Ákos
Schreck, Tímea Molnár,
Balázs Turai, Pap Szabina,
Ferenc Kis (Minusplus)

Source Zdroj: Minusplus

creative arts were situated next to the production of glazed ceramics closely connected to the remaining manufacturing activities. Complemented with further design and social-scientific institutions providing a scholarly-theoretical medium, artistic institutions (music, literature, theatre) and exhibition areas (contemporary and local historic collections), a constantly busy cultural quarter was formed. The spirit of the totally renovated 42 700 m² area and the newly built ensembles has been determined by the diverse and sophisticated varied details of ceramics due to the original function. The success of the project, which combines the cooperative design of several architectural offices, is presumably due to the series of small interferences: there is not a single element that clearly dominates the whole factory area, but instead there are comprehensible spaces of human scale that make the building complexes livable. At the

same time, the moderate contemporary interferences make these otherwise unknown industrial technologies more understandable for the general public. Beside the spaces used by the educational institutions, an intensive organization of programs has been implemented, so that the quarter is full of activities even on the weekends – with the purpose of making the factory area that was isolated for decades more comprehensible, and allowing the history of ceramic manufacturing to become a living tradition for the residents and the tourists as well.

LOFT SPACES PRESENTING INDUSTRIAL HERITAGE

While in Pécs a balance was created between the old and new architectural elements, and the associated network of institutions placed physically alongside the continuity of the historic use, it has to be stated that the adaptive recycling has its own dangers as well. The original atmosphere and spirit of the building are very vulnerable if the reconstructive intention is not sincere. This unfortunate result is mainly found in the case of private investments, when the balance between the profit orientation and heritage protection is not provided. In case of the creation of lofts – whether with a residential or an office function – there is a risk that as a result of the renovation the industrial character becomes hollow backdrop filled with luxury.

Since the turn of the millenium, there has been a noticeable trend that the companies moving to the industrial buildings use the industrial aesthetics with marketing goals. One of the contemporary design-culture trends related to the world of the start-up companies is the use of former industrial environments with a flexible space modulation. For example, we could list the first community office of the LOFFICE, established in one of the former print-shops for sheet music in the Music Academy of Budapest renovated by the Inarchi Design Studio. A new-generation community office, a meeting room, a conference room and an exhibition space were all established in the restored six-storey factory building. The different spaces were formed in the aspect of environmental consciousness, ergonomics and the integration of contemporary art to the work space.

The typically austere use of materials and the logical engineering aesthetics of the industrial buildings provided a great background: the characteristic large and transparent spaces stimulate communal activities – the trend of today's workplace design, to provide space for team work and individual retirement at the same time. However, here the main factor is the wide range of possibilities for connections. Instead of the definitive conquest of the space, the occupation can be reversed at any time.

The change in the function typically removes the possibility of preserving the preliminaries – however, because of their inducing effect it is still an acceptable change of fortune in the case of small-scale industrial buildings that affect the regional identity less. The bar known as KOCKA (The Cube), is an eccentric element of the well-known area of Kacinczy utca in Budapest that lately became famous through its ruin pubs. The survival of the more than 100-year-old building is partially due to the halting of the proposed demolition for the promenade of Madách sétány in the early 1990s. Before its complete abandonment, the building was the home of food preparation works, then a print shop, and finally as a warehouse and office. Its compact mass was revealed by the destruction the surrounding tenement houses, and with the disappearance of the fence it joined the public square. When transforming the building to a new function, the architects intended to maintain the rough characteristics of the small-scale manufacturing volumes. The striking black steel staircase and the plastered surfaces resembling raw concrete effect became complementary design elements, and are clearly visible from everywhere because of the half-storey shift. The reconstruction of the main facade reflects something from the solid but generously composed industrial milieu, though the smooth white tiles, made visible by breaking the side facades down, indicates that the building is an 'objet trouvé'.

These few examples clearly reveal how the spatial effects of industrial architecture and the aesthetics of structural systems, even if forced out of fashion through the international design approach, have begun to permeate into the public consciousness. In the aspect of heritage protec-



Photo Foto: Tamás Bujnovszky

tion, these temporary uses mean only a transitional period in the life of a monument, yet with the cessation of the functional continuity the related industrial history will probably be discarded. The greatest fear of the historical and archeological community lies in this assumption. In these cases, the monument is ascribed only a secondary role, and the primary goal of the visits are entertainment, consumption and fashionable, with no interest expressed in the history and spiritual heritage of the building. However, with these buildings that become fashionable meeting points, perhaps the possibility of a shift in attitude can be achieved. Instead of a one-time visit, the audience returns repeatedly, so that first the aesthetic experience

KOCKA bar and restaurant, Budapest. Architects: Zsolt Alexa, Donát Rabb, Ákos Schreck, Tímea Molnár, Balázs Turai, Pap Szabina, Ferenc Kis (Minusplus)

KOCKA bar a reštaurácia Budapešť. Architekti: Zsolt Alexa, Donát Rabb, Ákos Schreck, Tímea Molnár, Balázs Turai, Pap Szabina, Ferenc Kis (Minusplus)

and then the related history will also be recognised. Overall, the visits only form part of a slow process, but generally the attention of the users will turn towards the culture of the buildings, too. Naturally, not every building with industrial history can be treated as an inviolable preservation, but at least the physical appearance of these saved buildings can be educational examples.

COMMON USE OF INDUSTRIAL HERITAGE

Respecting the spatial capabilities of industrial buildings with a well-chosen functional repurposement can provide a good base for value saving. A sensitive rehabilitation can be realized in the case of interferences with cultural purposes, because in these cases basically the goal is always to mediate values to the public. The massive scale of industrial buildings was a necessity not entirely because of the size of the machinery, but more importantly because of the frequent rearrangement. The periodic community events of museums and event centres needed just this flexibility. The special environment (beyond the structural compliance) involves progressive possibilities in the aspect of determining unique identity. With the logical and rational utilization of the typical characteristics of the industrial heritage – strong structurality and materiality – the historic background of the renovated building can be even more strongly emphasized.

The factory group founded by Ganz – the first element of which, the iron foundry, was already presented – expanded to include an electrical department in 1878. The main part of the building stock was established between 1897 and 1912. During World War II, more than half of the machinery and the building stock was destroyed or became unusable, but the factory was rebuilt and became a stronghold of the socialist state-owned industry. After the expansion of the city, followed by the crisis of economic transformation, the factory was gradually destroyed. Investors building commercial malls immediately appeared in the area of the boulevard connected to the adjacent multi-medial transport intersection, the urbanized, busy square of Széll Kálmán tér, but the utilization of the inner territories did not appear profitable. After a long period of neglect, government intervention took place with a more developed and

sophisticated concept of land use. The goal of the environmental settlement of the MILLENÁRIS complex was the establishment of a high-quality exhibition and event centre involving the up-to-date reconstruction of the valuable buildings. Before the demolition works, tens of thousands of liters of oil had to be safely removed from the territory, and because of the soil contamination some of the buildings could be kept only partially^{146/}. The current entrance block provides serving and catering functions, but is suitable for exhibitions and hosting events as well. The Small Hall is the oldest building of the park: it functions as an exhibition and performing space. The Great Hall was formed by the partial demolition of two factory buildings and construction of a new connecting bridge. The 'Teatrum' works as a 600-set theatre where different musical, theatrical and dance events are held. A special unity is prevalent between the contemporary and the historical architecture. While the historical structures were kept and the structural reinforcements were addressed with standard products, the element use of the contemporary architecture adapts, but authentically complements the buildings constructed 50 – 100 years earlier. Alongside the brick, cast-iron and steel structures, aluminium and glass curtain walls appear. The buildings that served as the outer line of the factory area were kept to a significant degree; as for the inner part of the factory area, partial demolitions were effected and cleaning implemented, to create a large and coherent public park. One of the secrets of the successful project has, in fact, been to keep some parts of the past for preservation of the identity of the space, but with an entirely new land use to allow a modern urban form to emerge. Due to the intensive development of the historical city core in the 19 – 20th centuries, it was not possible to create a public open space of a park in the neighbourhood. The success of this area is that it is used not only by the residents of this part of the city, but it is a popular urban tourist point, especially for families with children. As an effect of the global economical crises, the investors who once had plans about expanding along the boulevard dropped their intentions of development. In response, the government has planned to make the territory more livable with a new interference last year. The goal of the Millenáris Széllkapu project is



Photo Foto: Erzsébet Urbán

to open the territory towards the inner city core – it would create a natural, airy relation between city parts, though on the other hand a direct interface could be created with the better unfolding of the rehabilitated area^[47].

Beyond the industrial buildings of monumental scale, we should not forget those smaller remnants of manufacturing culture that have slowly started to disappear in the urban development of our cities. These small plants had only local importance, but their constant presence was an economic and social given even during the centralized production of state socialism. The success of the contemporary intervention with the help of a thorough sociological strategy would call attention to such architectural heritage that deeply relates to our identity, but is of negligible historical importance. The KESZTY GY R (GLOVE FACTORY) COMMUNITY HOUSE stands on the main square of one of the poorest quarters of Budapest. With

the Magdolna Quarter Program, the local government is aiming towards the elimination of the ever-worsening impoverishment and social exclusion of the territory and the reduction of street crime. A re-organization of public space attempted at the turn of the millennium was unsuccessful: the inhabitants felt the elements of the urban common park unfamiliar, and the space thus quickly declined. The further rehabilitation of the area inevitably demands the involvement of the local people. Towards this end, the almost forgotten former glove factory in the courtyard of the two-story tenement house next to the public square became the centre of this project.

Launched in 2005, the new program encouraged active participation in the planning among the people living in the neighbourhood. In addition to the contributors of different professions, university students and volunteers, the cooperation of the students of the adjacent primary school played

Millen ris (Millennium
Exhibition and Programme
Centre), Budapest

Millen ris (Vystavn 
a programov  centrum
Millenium), Budapešť



HOLIS, Kőszeg
HOLIS, Kőszeg

Photo Foto: Gábor Czerkl

a sizeable role in the successful transformation of the elements of the common park. Another important outdoor element of the project is the forecourt that connects the public space with the institute established in the industrial building itself. It provides a transition, indeed a test of trust for the locals: a kind of gesture for change and exploration of the willingness for cooperation. It is surprising that the original character of the courtyard to hide to the factory building is now turned around to become a transfer element that helps communication. The strategy of the designers is clear: reconstruction of the industrial building forms a free interplay between the visually transparent spaces and the community rooms that ensure seclusion. Beside the industrial characteristics, the employment of colours and materials closely linked to Roma cultural traditions, since the Hungarian Roma minor-

ity represents a large percentage of the residents of the area, is another factor to ensure that the building would be communicative beyond maintaining the history of the architectural heritage. The understanding of the environmental culture of the users cannot be proved better than the degree to which the transformation of the industrial building indicates the success of the architectural intervention. The family and mentor programs are continuous, job search trainings are usual events in the house, and the locals are becoming more open to participation in these programs.

ADAPTABLE STRATEGIES FOR INDUSTRIAL HERITAGE

Instead of immediate renovation, temporary utilisation of former industrial spaces could provide a temporary solution for the protection of

rapidly decaying industrial monuments. These small interventions usually take place with the participation of the local residents, which is fortunate because at the time of the actual restoration the place is regarded more positively on the people's mental map. Urban anthropology examines the connection of the industrial sites and the neighbouring residents in extensive detail, and in the case of restoration considers this aspect as well ^{/48/}. The role of volunteers and the participation of active civilians are very important in this field. It is a general social belief that the preservation of the heritage is the exclusive task of the state, so in many cases there is a high level of passivity on the part of the people. The passivity towards these temporary value-saving interferences, as a broad social phenomenon noticeable in the East Central European region, is due to the long-term Soviet supremacy when every internal, self-organized project was unimaginable because everything was centrally supervised by the state. Fortunately, there are some positive examples for such initiations, in which these projects were successfully carried out with the involvement of young activists and the co-operation of professional experts. One of the most recent, though still in its infancy, is the HOLIS 2014 Summer School initiated by The Design Terminál, which focused on the reutilization of the felt factory in the western Hungarian city of Kőszeg. The Design Terminál NKK is a state agency responsible for promoting the creative industries of Hungary. The organizers invited university students and recent graduates for the one-week program to work together on finding solutions for specific tasks regarding the area. The motto was that of "holistic design", in other words the development of a viable strategy with the collaboration of representatives of different fields of profession and science. Economists, designers and engineers sought a new function, one progressive even in international terms, for the abandoned factory. For long-term maintenance, beside the architectural aspects, the economic and environmental conditions of the future operations and functions should be taken into consideration. The participants dealt with not only the building and its immediate environment, but were introduced to the economic operation

models, and the proposed environment-friendly new technological solutions ^{/49/}. The obvious purpose of the experiment is to find an opportunity for the sustainable rehabilitation of our industrial heritage in the East Central European, specifically the Hungarian economic conditions, considering the values of the international charters.

SUMMARY

The first question to decide in case of the industrial heritage protection is for whom the given monument is to be restored ^{/50/}. Industrial museums created from industrial buildings conserved in situ are established for a relatively narrow professional community. This kind of complex intervention, implemented with the aim of caring for the total complex of physical and spiritual heritage, is an ethical decision primarily, or exclusively, responsible to the heritage itself. In the current economic state, this type of institute will not be sustainable at all, but the most significant sectors of a country's industrial culture are deserving of preservation even at this cost. The society of our age has moved far away from the atmosphere of the industrial sites of the 20th and earlier centuries, so an experience-based presentation could be more effective and could reach a wider range of audiences. It is important to note that in every case the goal is to find the balance between conservation and adaptive reutilization, since a thoroughly gutted and stylishly refurbished industrial building loses all its authenticity.

Assuming a territorially smaller scope and single directed interventions usually results in a slower development, and generally the needs of a less wide social layer have to be met so that the complete ensemble could be coherently preserved. The importance of the given industrial monument can influence the level of the architectural intervention. Every building and territory require specific situation-based handling, but in the case of the factories that still relates to the everyday life of the locals, or possibly that still remain in operation, much less extensive changes are needed to make the place livable again.

Beside the interpretation of the theoretical background, the study has tried to provide space for 'good practice' through citing Hungarian examples involving industrial buildings, the special

architectural type of heritage protection that made successful utilizations on even an international level and met the general expectations as well: 'The industrial heritage is a source of learning which needs to be communicated in its multiple dimensions. It illustrates important aspects of lo-

cal, national and international history and interactions over times and cultures. ... Public and corporate awareness and understanding for the industrial heritage are important means for its successful conservation.' (The Dublin Principles 2011. (IV.) 13.)

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31 The state project office for industrial buildings (IPARTERV) was awarded the Perret Prize of the UIA in 1961 for its site – made prefabricated concrete structures developed throughout the 1950s. WIEBENSON, Dora – SISA, József (eds.): *The architecture of historic Hungary*. Cambridge – London, MIT Press 1998. p. 284. and SZENDRŐI, Jenő: *Ipari építészetünk*. Budapest, Műszaki Kiadó 1965.

32 HABA, Péter: Zur Geschichte des IPARTERV. In: PETER, Markus – MÁRKLI, Peter et al. (ed.): *Architektur und Konstruktion 4: Technik & Systeme*. Zürich, ETH – Eidgenössische Technische Hochschule 2013, pp. 87 – 89.

33 Critical evaluations of most significant architectural historical works basically place the first actually valuable industrial buildings in the period after the first decade

of the 20th century, before discussing the unfolding of the building type in modern architecture: DÉRY, Attila – MERÉNYI, Ferenc: *Magyar építészet 1867 – 1945*. Budapest, Urbino 2000. It is a strange twist in architectural history that the strength of form of the buildings that are modestly detailed but monumental in size received a special emphasis in the architecture of socialist industrial development: HABA, Péter: *Reakciók a szocreálra*. Forma és ideológia a magyar ipari építészetben 1950 és 1956 között. *Építés-Építészettudomány*, 40, 2012, 3 – 4, pp. 331 – 363.

34 SZENDRŐI, Jenő: *Op. cit.*

35 Szendrői, Jenő (et.al.): *Magyar építészet 1945 – 1970*. Budapest, Corvina Kiadó 1972.

36 For defining the objectives of the developments: SZENDRŐI, Jenő: *Forma és szerkezet kölcsönhatása (A szocialista építőművészet és a korszerű kivitel kapcsolata)*. *Építés-Építész*, 9 – 10, 1951, 3, pp. 563 – 572. On the significance of the new innovative construction technologies of industrial buildings: GILYÉN Nándor: *Szerkezet és forma az építészetben*. Budapest, Műszaki Könyvkiadó 1982. pp. 162 – 171. Compare the structure – form – function approach with: PEVSNER, Nikolaus: *Pioneers of the Modern Movement*. London, Faber & Faber 1936. And: STRAUB, Hans: *A History of Civil Engineering – An Outline from Ancient to Modern Times*. Cambridge, Mass., MIT Press 1964.

37 A separate discussion of industrial architecture is published in professional journals reviewing the general history of architecture: „Az első ipari csarnokok, raktárépületek, erőművek” In: BONTA, János: *A magyar építészet egy kortárs szemével 1945 – 1960*. Budapest, Terc 2008, pp. 99 – 105. However, it has not ranked among the most fashionable topics because of the historic legacy of the aggressively dictated communist industrial development. This common belief is well represented by the fact that the researches examining the appearance and cultural environment of the socialist realist architecture, basically focus on the presentation of public institutes, the housing estates and industrial buildings are mentioned only in excerpts. BRANCZIK, Márta – FEHÉRVÁRI, Zoltán – HAJDÚ, Virág – PRAK-FALVI, Endre: *Modern és szocreál – Építészet és tervezés Magyarországon 1945 – 1959*. Budapest, Magyar Építészeti Múzeum 2006.

- 38 Beyond the individual cases, the importance of the overall protection of industrial heritage still needs to be incorporated into Hungarian professional awareness, so a social demand cannot be expected either. The presenters of an international conference practically avoid any mention of the topic's importance: FERCH, Magda (ed.): *Az  pített  r ks g v delm ben / L'Apologie du patrimoine architectural / The protection of architectural heritage*. Budapest, Sz chenyi Irodalmi  s M vészeti Akad mia 2011.
- 39 At the turn of the century, the architectural historians took up modern architecture with a great interest (this was experienced on an international level as well). Beyond the canonic interpretation of the beginning if the 20th century, a critical review of the years of the Fifties and Sixties is now far more important: SIMON, Mariann: *Modernity and context – Hungarian architecture at the beginning of the K d r – era*. *Periodica Polytechnica*, 38, 2007, 1, pp. 25 – 32. And widening the topic with new aspects: SIMON, Mariann: *Progressive, forward – looking and advanced. Hungarian architecture and modernity 1956 – 1962 / Progresivna, napreduj ca a pokrokov . Maďarsk  architekt ra a modernita v rokoch 1956 – 1962*. *Architekt ra & urbanizmus*, 47, 2013, 1 – 2, pp. 20 – 33. Official catalogue of an exhibition presenting the material of Hungarian Museum of Architecture: PRAKFULVI, Endre – HAJDU, Vir g (eds.): * pítészet  s tervez s Magyarorsz gon / Architecture and planning in Hungary 1945 – 1959*. Budapest, Orsz gos M eml kv delmi Hivatal – Magyar  pítészeti M zeum 1996. Overview of “socialist realism” in Hungary: PRAKFULVI, Endre – SZ CS, Gy rgy: *A szocre l Magyarorsz gon*. Corvina, Budapest 2010. In the issues cataloging the values of the Hungarian rural architecture of the 20th century, the industrial architecture is mentioned, but mainly only transportation facilities are presented. L RINCZI, Zsuzsa (ed.): *Architecture in Hungary (country guide) of the 20th century*. Budapest, 6 Bt 2003. (2nd ed.)
- 40 BARKA, G bor – FEH RV RI, Zolt n – PRAKFULVI, Endre: *Duna jv rosi  pítészeti kalauz 1950 – 1960*. Duna jv ros Megyei Jog  V ros  nkorm nyzata, Duna jv ros 2007.
- 41 KISS, Katalin: *Ipari m eml kek. (A mi Budapest nk 10.)* Budapest, V rosh za 1993.
- 42 On the significance of industrial tourism: STRATTON, Michael: *Industrial buildings: Conservation and Regeneration*. London – New York, Taylor & Francis 2000.
- 43 TICCIH Hungary Conference (27. February 2014.) on „Industrial Heritage – Culture – Economy”. C.f.: VUKOSZ VLYEV, Zor n – URB N, Erzs bet: *Cultural re – use of industrial buildings in Central and Eastern Europe*. TICCIH Bulletin, 64, 2014, pp. 18 – 19.
- 44 HABA, P ter: * j auton mia/New Autonomy*. *R gi- j magyar  pítőm vészet*, 2012, 4, pp. 20 – 22.
- 45 BERENS, Carol: *Redeveloping industrial sites: A Guide for Architects, Planners and Developers*. Hoboken, New Jersey, John Wiley & Sons 2010.
- 46 Beyond the foundations of the Nizhny Tagil Charter, the Dublin Principles define more strict guidelines regarding the current use. In terms of the theme of global environmental protection, beside the heritage protection the primary aspect is the minimalization of the environmental impact. C. f. Nizhny Tagil Charter 2003 and Joint ICOMOS – TICCIH Principles for the Conservation of Industrial Heritage Sites, Structures, Areas and Landscapes – The Dublin Principles 2011.
- 47 The development plans require additional plans, on their development: T th, Ildik : * jabb z ld park  p l Bel – Buda sz v ben*. Available at http://masodikkerulet.hu/hirek/Millenaris_Szellkapu_interju.html Accessed 19 August 2014. Official website of the project: Available at <http://www.szellkapu.hu/> Accessed: 19 August 2014.
- 48 OIKONOMOU, Dr Andromachi: *Urban anthropology and industrial heritage*. TICCIH Bulletin, 41, 2008, p. 1.
- 49 MISZLIVETZ, Ferenc – M RKUS, Eszter: *A KRAFT – Index – kreatív v rosok – fenntarthat  vid k*. *Vezet studom ny*, 44, 2013, 9, pp. 2 – 21. Available at <http://holis.designterminal.hu/> Accessed 28 July 2014.
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