Budapest panorama
from the cupola of St.
Stephen's Basilica

Panoráma Budapešti
z kupoly Baziliky
svätého Štefana

Photo Foto: Melinda Benko

Melinda Benko

BUDAPEST URBAN BLOCKS AND THEIR SUSTAINABILITY

MESTSKÉ BLOKY V BUDAPEŠTI A ICH UDRŽATEĽNOSŤ

V posledných rokoch urbánny vývoj v Budapešti vyústil do zásadných premien stavebného prostredia. Zmeny mesta závisia od jeho lokálnej identity, ale taktiež odpovedajú na globálne výzvy. V tejto eseji sa využíva klasifikačný systém historických a súčasných uličných blokov domov s cieľom vymedziť typy týchto blokov v centre mesta a vytvoriť teoretický základ pre súčasný urbánny dizajn zameraný na dosiahnutie udržateľnosti. Analytická metóda sa sústreďuje na dualitu uzavretosti/otvorenosti mestských foriem, ktorá sa môže priradiť ku kvalitatívnym priestorovým dimenziám a taktiež k cieľom udržateľného rozvoja. Fyzická štruktúra mesta sa vníma ako uzavretá alebo otvorená z hľadiska reálnych aspektov, ktoré majú rozhodujúci vplyv na mestský život. Vo vzťahu k bloku domov sa súčasne analyzujú dve prekrývajúce sa roviny: vizuálna, ako výsledok stavebnej reality (napr. rozsah alebo stupeň ohraničenia), a fyzická, ako rámec pre možnosti využitia priestoru (napr. rozsah alebo stupeň verejného využívania). Budapešť má výbornú geografickú polohu a vynikajúce prírodné, urbánne a architektonické vlastnosti. Potenciál Budapešti je výnimočný, no mesto musí čeliť stále väčším výzvam. V súčasnosti toto mesto musí splniť úlohu opravy bytového fondu a obnovy mestskej štruktúry s cieľom vytvoriť udržateľnejšie mesto. Analýza vzorcov mestských blokov v Budapešti je príhodná a nevyhnutná pre pochopenie ich morfologickej transformácie a významu otvorených a zatvorených urbánnych situácií vo vzťahu k cieľom udržateľného rozvoja. Mestské bloky v Budapešti sa teda v tejto štúdii zaraďujú do kategórií, z ktorých každá obsahuje krátky historický prehľad a niektoré súčasné príklady.

Blok, uzavretý z hľadiska formy aj využívania je najčastejší a všestranný vzorec historického centra Budapešti. Tento spôsob bývania vytvára typickú, relatívne homogénnu štruktúru s maximálnou hustotou výstavby a uzavretosťou zo strany ulice. Okrem tejto urbánnej vlastnosti, architektonické charakteristiky domov sa zvyčajne líšia podľa ich polohy v meste a obdobia výstavby. Tento typ prežíva aj v súčasnom urbánnom dizajne. Jeho hlavné hodnoty spočívajú vo vytvorení intenzívneho urbánneho rázu, zachovania obrazu ulice, ako aj v jasnom rozlíšení vonkajších verejných plôch a vnútorných otvorených priestorov.

Uzavretý blok s verejným využívaním je špecifickým riešením s cieľom zachovať uzavretú podobu uličných blokov a súčasne vytvoriť systém viacerých verejných priestorov s otvorenými priechodmi cez apartmánové domy, ako aj trvalým či občasným verejným využitím interiéru obytných budov. Pokiaľ ide o udržateľnosť, kompaktnosť a rozmanitosť výstavby tradične uzavretých dvorov v mestskom centre Budapešti sú podstatnými konceptmi udržateľného mestského dizajnu. V spojených vzorcoch dvorov a v obvode blokov domov tieto hodnoty sú menej významné, hoci tento typ ponúka nové možnosti pre ozelenenie alebo solárnu architektúru.

Transparentný blok v Budapešti vznikol na začiatku 20. storočia. Jeho cieľom bolo narušiť vysokú urbánnu hustotu vytvorenú typickými uzavretými blokmi. V tejto morfológii hranica medzi verejnými a súkromnými priestormi je jasne viditeľná, no rámujúca stavba nie je súvislá a občas dovoľuje nazrieť do vnútorných blokov. V súčasnej architektúre používanie transparentných blokov je čoraz častejšie, lebo vytvárajú intenzívne životaschopné prostredie a súčasne rozširujú možnosti výstavby rôznorodých vzorcov a zväčšujú potenciál umožňujúci otvorenosť mestskej štruktúry. Napriek tejto vizuálnej otvorenosti blokov ich využívanie vo všeobecnosti zostáva uzavreté.

Blok, transparentný z hľadiska formy aj využívania je nové urbánne architektonické riešenie s cieľom vytvoriť dojem elegancie. Vonkajšie hranice mestského bloku sú úplne alebo čiastočne vystávané; v dôsledku toho skupina budov umiestnená vo svojom vlastnom svete môže sprostredkovať pocit obratu dovnútra, ktorý posilňuje využívanie vnútorného otvoreného priestoru, napríklad prístupného regulovaného prostredia. V termínoch udržateľnosti transparentné mestské bloky strácajú kompaktnú formu, ale dovoľujú projektovanie životaschopnejších obytných budov, ktoré zahŕňa koncepty ozelenenia a solárnu architektúru. Z inej stránky transparentnosť umožňuje rôznorodosť a sociálne zmeny tým, že vytvára udržateľné komunity.

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Blok, otvorený z hľadiska formy aj využívania je dobre známy typ modernistických miest. Budovy sú autonómne stavby v kontinuálnom priestore a verejné priestory z vonkajšej strany blokov sa spájajú s vizuálne a fyziky otvorenou urbánnou štruktúrou. Tu už nejestvuje tradičný urbánny kontext; nie sú ulice či bloky ani verejné či súkromné plochy, ani presná poloha budovy. Skorší otvorený systém blokov ešte existuje, ale je veľmi ťažké prispôsobiť sa jeho dnešným štandardom bývania. Preto v súčasnom vývoji Budapešti vizuálna otvorenosť stále prevláda nad urbánnou scenériou, zatiaľ čo využívanie priestoru je charakterizované fyzickou uzavretosťou a regulovaním. Pokiaľ ide o udržateľnosť, hlavné udržateľné hodnoty historického centra mesta (kompaktnosť a rozmanitosť) v otvorenom bloku už neexistujú. Otvorené bloky sa môžu vyvíjať inovatívnym a udržateľným spôsobom na periférii, no v jadre Budapešti je dôležité nájsť adekvátnejšie morfologické riešenia.

Hoci táto esej odhaľuje morfológiu mestských blokov Budapešti tým, že sa sústreďuje na dva dominantné aspekty udržateľnosti historického centra mesta – kompaktnosť a rozmanitosť – jej cieľom je tiež zdôrazniť, že urbánne formy priamo ovplyvňujú bývanie, využívanie priestoru, ekosystémy a kvalitu mestského života. Vo všeobecnosti sa teda zdá, že väčšia časť novej výstavby v centre mesta sa nespája s udržateľnosťou; len teraz sa do toho investovalo. Pre udržateľnú budúcnosť centra Budapešti fyzická urbánna štruktúra s odlišnými typmi domov, rôznou hustotou zástavby, obdobím výstavby atď., nie je jediným dôležitým faktorom.

Rôznorodosť aktivít, dobrá správa mesta a dobre organizovaná mestská spoločnosť sú pre kvalitu prostredia takisto podstatné. Táto štúdia bola zamýšľaná, aby iniciovala objavy v tomto smere, budúci výskum by sa však mal zamerať na nasledujúce oblasti:
– kompaktnosť, hustota a životaschopnosť mestskej štruktúry Budapešti vo vzťahu k súčasným životným potrebám,
– typológia blokov, budov a dvorov v Budapešti,
– zavedenie ozelenenia ako dôležitého architektonického konceptu pri vytvorení udržateľnej urbánnej podoby,
– kombinácia využívania a rozmanitosti foriem, funkcií a kultúr,
– možnosti udržateľnej dopravy v Budapešti a zlepšenie kvality verejného priestoru určeného na prechádzky a bicyklovanie,
– klíma v centre mesta, úloha Dunaja, solárna architektúra a zmenšenie spotreby energie spolu so zmenšením odpadu a znečistenia,
– udržateľné komunity a správa mesta atď.

Cieľom je vytvoriť systém hodnotenia, zameraný na odlišné spôsoby, ktorými rôzne urbánne formy v centre Budapešti prispievajú k udržateľnosti. Udržateľné hodnoty mesta (také ako vysoká hustota bývania, adekvátna kompaktnosť a rozmanitosť v kombinácii s rôznymi využívaniami pozemkov) môžu teda byť zachované a doplnené novými politickými, ekonomickými, technologickými a spoločenskými prístupmi. Nový vývoj sa tak môže odohrávať v smeroch, ktoré budú citlivejšie ku kontextu a udržateľnosti a budú chrániť identitu centra Budapešti pre budúce generácie.

INTRODUCTION

One of the most significant current discussions in urban design is the redesigning and restructuring of urban places to achieve sustainability. There is a large volume of published studies describing specific criteria – that a sustainable city should be compact, dense, diverse and highly integrated (The Sustainable, 2004). In addition, design concepts of sustainable urban form highlight the importance of sustainable transport, mixed land uses, passive solar design and greening, too. This paper approaches this complex question by analyzing Budapest's traditional urban blocks and

their contemporary changes, focusing on the two aforementioned dominant aspects of sustainability in the historic city center: compactness and diversity.

Budapest was founded in 1873, through the unification of three historic towns: Buda, Pest and Óbuda. The Hungarian capital became the biggest city on the Danube, the most important industrial, commercial and cultural centre of the region and the gateway of Western Europe to the East. The majority of the housing stock at the city's core, about 400 blocks, dates back to the late 19th and early 20th century. Generally, they are

3- to 7-storey buildings around inner courtyards, giving rise to the traditional closed urban form. The historic centre was also a construction site for prestigious political buildings (the Parliament) and cultural institutions (museums, opera house and theatres). They stand out as objects, landmarks in the homogeneous urban tissue. At the same time, the former industrial areas expanded between the inner city and the administratively independent suburbs, even occupying the riverbanks. The use of space in this transitional zone was mixed, which resulted in a varied urban fabric. The city's present form, greater Budapest, was born in 1950, through the addition of 16 townships and villages situated along the outer belt.

Following these periods of spectacular development, the quantitative housing construction programmes in the 1960's and 1970's took the form of huge housing blocks built on the city's outskirts. Meanwhile, in the historic urban fabric of the inner-city, neglect and demolition of nationalised residential buildings were general phenomena. After the political and economic transition of 1990, the housing and real estate market opened up, and intensive building activity began with the active participation of foreign investors. Besides urban renewal, suburbanisation continues to absorb urban development resources. Locally and globally, Budapest's challenges are increasing.

METHODS AND RESULTS

Contemporary Budapest inherited more than 400 residential urban blocks in its historic city center. The renewal of these blocks, involving housing construction within the existing context while safeguarding its identity, is central to Budapest's future. Generally, urban form is a composition of characteristics related to land use, transportation system and urban design. However, the block, building and housing layout are part of an urban design system in which each element depends on the others. The present research focuses on street blocks of residential buildings in the historic city centre that remain part of the homogeneous tissue and give Budapest's urban fabric its unmistakable essence.

To explain the morphological changes in the block structure between the 1870's and contemporary times, we can use the classification offered for different types of blocks by the international literature (Panerai, Castex and Depaule, 1997) and the Hungarian (Meggyesi, 2009). The traditional urban block has undergone major transformation in the 20th century. Nearly all the interim stages appeared – from units fully enclosed by continuous boundary walls, to the opposite, entirely open systems. The solid / void urban morphology, represented by its mass/space diagrams in black and white, gives a clear sense of the physical fabric of the urban form. As a consequence, fundamental differences between the traditional historic city and the modernist city are visible in terms of urban design and architecture. Nevertheless, in reality, the physical structure of the city is perceived as closed or open. This closed or open nature is the most important qualitative dimension of urban form, where space use and space experience

Zoning map of Budapest: 1. historic urban core 2. Danube riverbanks 3. transition belt 4. hillside zone 5. outskirts.

Mapa zón Budapešti: 1. historické mestské centrum 2. brehy Dunaja 3. prechodný pás 4. horská zóna 5. okraj mesta
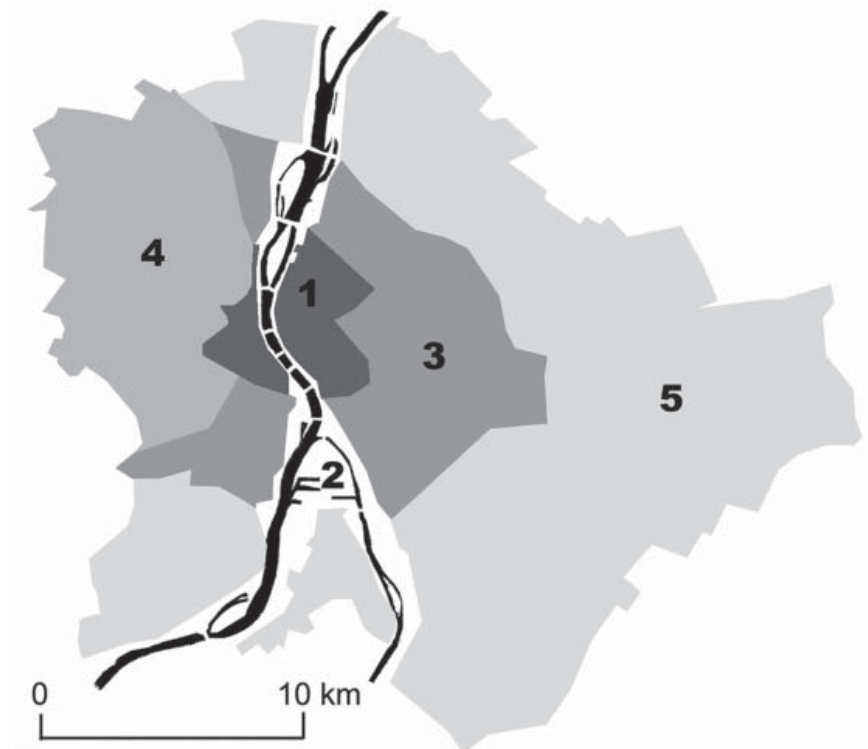
Author Autor:Melinda Benko

come to the fore. Moreover, bearing in mind se-
veral historic and contemporary developments in
the city centre of Budapest, the method of analysis
based on the closed/open duality of urban form
can be applied on two overlapping levels: visually,
as the result of constructed reality (e.g. the range
or degree of enclosure); and physically, as a fra-
mework for space use possibilities (e.g. the range
or degree of public use). To compare different
urban forms, this chapter has been divided into
three parts: closed, transparent, and open blocks,
presented in a variety of versions based on their
practical use.

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Drawing Kresba: Melinda Benko

1. THE CLOSED URBAN BLOCK

The closed urban block I – closed in both form
and use

The most common and versatile pattern of tra-
ditional European urban culture is the network of
streets which includes series of repetitive blocks
usually enclosed by continuous boundary walls.
Nonetheless, this systematic organisation of the
city and its urban areas can be differentiated into
typical morphological periods, which is true in the
case of Budapest as well.

In the period of dynamic development between
1873 and World War I, the main emphasis of urban
planning was the creation of a new attractive city
by means of a relatively simple, owner-oriented
property zoning regulation. According to the
development pattern, the zoning map of 1874 had
already divided Budapest into two parts. In the
inner city, the "capital style" with a closed urban
block system became compulsory (including the
closed street line, a maximum of 85% building co-
verage, height restrictions, etc.) On the outskirts,
by contrast, detached houses and villas could be
developed (Körner, 2010).

The new road and infrastructure network exten-
ded through all of the existing and planned parts
of the city's core, marking out urban blocks. These
blocks are generally divided into regular plots,
with each plot fully or partially built in along its
street line. The typical Budapest residential buil-
dings, termed enclosed courtyard developments,
are organised around an inner court. The street
wing contains large, prestigious flats, whereas
the court wings, with windows open only to the
access gallery, have small, poor living spaces.
Such a housing typology gives rise to a standard,
relatively homogeneous urban fabric with maxi-
mum building density and a closed effect towards
the street front. Besides this urban quality, it is
also normal for the architectural characteristics of
houses to vary according to their position in the
city and their time of construction.

To improve the housing standards at the begin-
ning of the 20th century, a new building regulation
was introduced that required back-to-back inner
courts to be interconnected. While in smaller
towns the practice had long been in effect, this
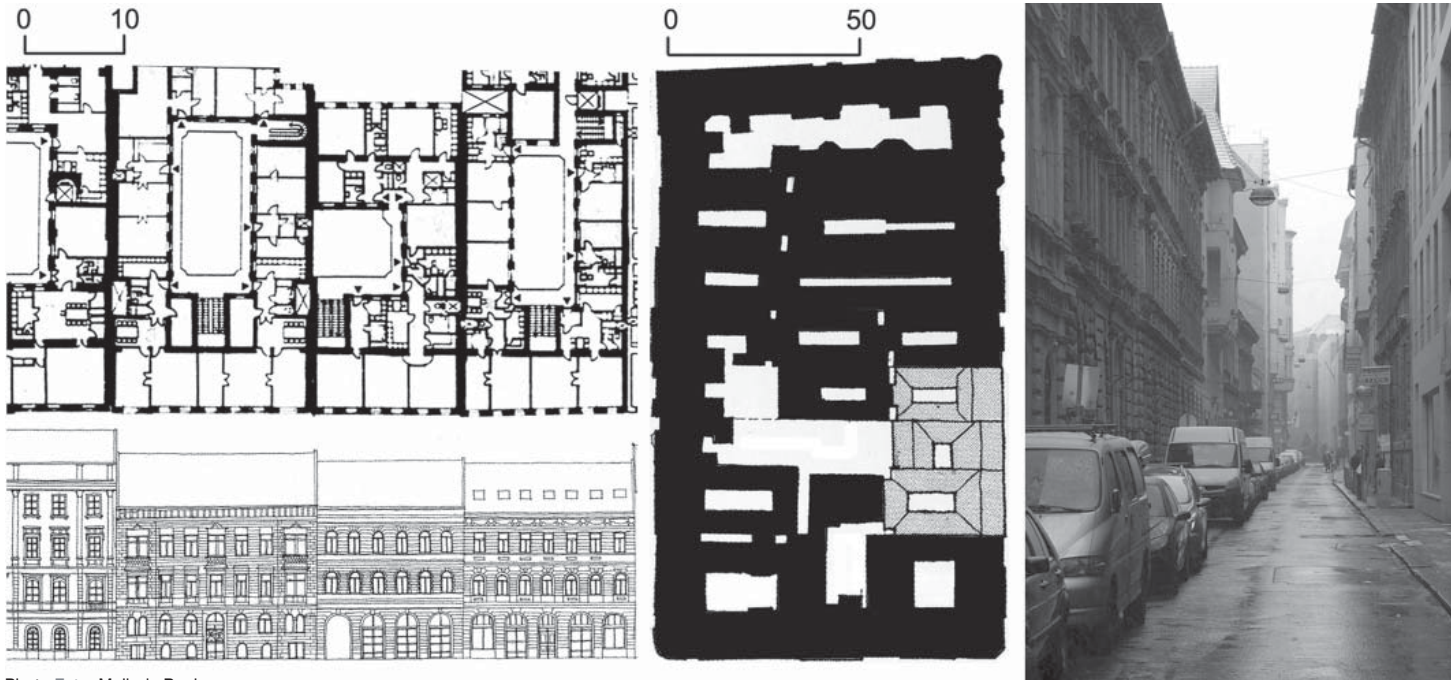typology, the "joint courtyard pattern", became

Photo Foto: Melinda Benko

typical in the housing development of Budapest only between the two World Wars. In Budapest, too, we can mention the "perimeter block patterns" as the last step in the transformation of the traditional enclosed block. Here the block acts as a single monumental plot that is built in all along its external perimeters. In these cases, the image of the city is identified with a built-up street line that is continuous, following the uninterrupted rows of facades on both sides of the street. The appearance of the closed block remains, but the dimensions, use and atmosphere of the invisible inner courts are strikingly different.

Post-modern theories and the contextualist approach, however, rehabilitated this typology. As a result, it still survives in today's urban design. Its major values are the creation of an intense urban character, the preservation of the significance of streetscape and the clear distinguishing of external public areas and internal open spaces. In the traditional system, blocks are divided into plots, and buildings are built in plot-by-plot. The

freedom of development is heavily limited by the size of the plot and its regulations, which usually results in sharp aesthetic conflicts between historic and contemporary forms. The enclosed courtyard housing pattern does not exist anymore in contemporary architecture and can only survive through building renovation projects.

It is also difficult to apply the joint courtyard system in the centre of Budapest, because the urban renewal project has barely been given an opportunity to create new block unity. This state of affairs is partly due to privatisation after the political change of 1990, when condominiums became the prevailing form of residence ownership. Moreover, currently more than 95 % of flats are privately owned.

Nevertheless, some examples can be found in Hungarian practice in which the joint courtyard development comes into existence under the supervision of a single investment project, preventing problems such as monotony or loss of the proper urban scale. In these cases, various architects

Typical enclosed courtyard development in the inner city, Kazinczy utca (Lampel and Lampel, 1998)

Výstavba typického uzavretého nádvoria vo vnútornom meste, ulica Kazinczy (Lampel a Lampel, 1998)

Contemporary joint courtyard pattern in the Futó utca development, Masterplan by György Alföldi, 2006

Súčasný vzor spojených nádvorí v ulici Futó. Majstrovské dielo Györgyho Alföldiho, 2006

design buildings on the basis of a master plan concept, and the former plot system remains. Thus, good contemporary housing quality can be developed alongside the desired architectural diversity

However, in the majority of the new urban developments, when there are in fact several contiguous free plots together, the investors increasingly try to unite them, instead of using historic design methods. A block is oftentimes treated as one monumental plot. Unfortunately, when it comes to a development that can actually be regarded as a single building or an urban block, often only one architectural studio prepares the design, for the sake of easier implementation. Generally, enormous block-sized units are created with a unified architectural appearance, far exceeding the scale of the traditional urban fabric. Sometimes the building occupies the entire street block. (For example, the plot coverage of shopping centre developments in the inner area of Budapest is 100 %.) Thus, new perimeter block

housing stands in conflict with the historic urban fabric.

Closed urban block II – closed in form, but enriched with public use

To analyse closed urban blocks in the city centre of Budapest, it is important to mention the phenomenon of arcades (Déry, 2005). The arcade is a special solution to preserve the closed form of street blocks, but to multiply the public space system with open passages below apartment houses and through the housing block. The most familiar examples were constructed at the beginning of the 20th century (for instance, the Parisian Arcade), and this development concept was used until the 1980's to consolidate urban structure and city life. Nowadays, most people do not know about the existence of these secret passageways.
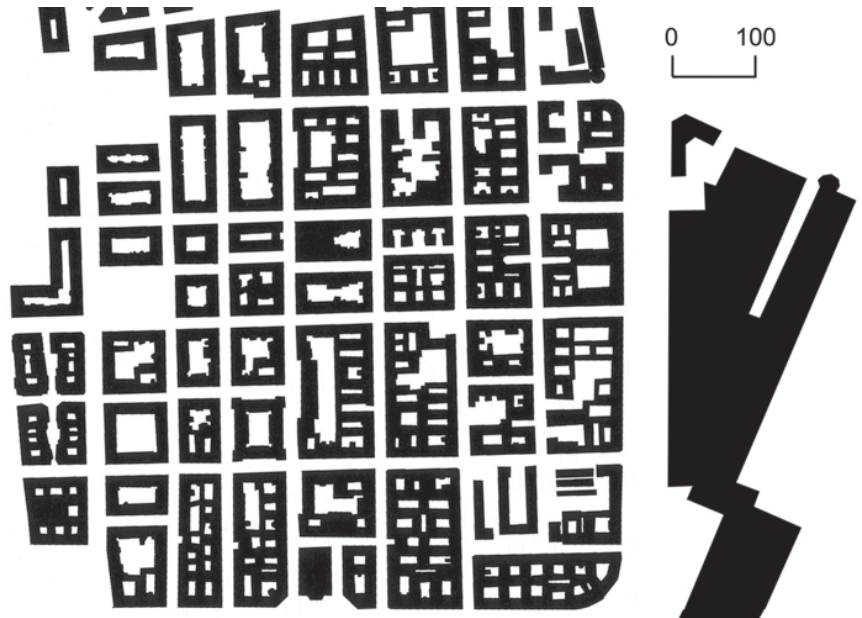
Passages in the city centre are in danger. On the one hand, the most exceptional buildings are

discovered by foreign investors, and are converted luxurious hotels or offices. In the renovated buildings, the interior passageway with its impressive glass dome or roof lends a special atmosphere to the lobby, yet the public and open use of the space is totally destroyed (for example, when the Gresham Palace became Four Seasons Budapest in 2004). On the other hand, as a consequence of the change in lifestyle and status of the city centre, the majority of former passages are neglected, with little foot traffic and many closed shops. Hence, as this urban architectural beauty slowly disappears, the street block loses this interior public use, becoming closed again.

In terms of sustainability, the compactness and the diversity of traditional enclosed

Drawing Kresba: Melinda Benko

Different solutions for closed blocks in the city centre, Újlipótváros

Rozličné riešenia pre uzavreté bloky v centre mesta, Újlipótváros

courtyard developments in Budapest's city centre are essential sustainable urban design concepts. In the perimeter block housing, these values are decreasing, although this typology offers new opportunities for greening or passive solar design. The joint courtyard pattern contributes more to sustainability, retaining urban diversity and a high degree of compactness complemented by the utilisation of greening and passive solar design concepts.

2. THE TRANSPARENT URBAN BLOCK

The transparent urban block I – visual break-up of closed blocks where use remains closed to public

The break-up of traditional closed blocks – where the block contours remain, but the inner realm of the block becomes visible – could be seen as the most important step to provide transparency in an urban context. The term 'transparent block' has assumed various meanings since the late 80's in international urban literature. Generally, however, it describes a historic block typology where the boundary between public and private spaces can

Photo Foto: Péter Hencz

Parisian Arcade (Párizsi udvar) with closed shops in 2010

Parížska arkáda so zatvorenými obchodmi v roku 2010

be clearly identified, but the bordering mass is not continuous, allowing occasional views of the inner block. In the morphological transformation of Budapest's street blocks, transparency appeared at the beginning of the 20th century to break apart the high urban density developed by the typical closed blocks. At the same time, the transparent block refers to the new urban typology created by the combination of the traditional closed block and the modernist open block. Thus, the sensation of the street is retained, but the form of the city fabric seems more diverse. This effect can be created in different ways: forecourt development, gaps in between buildings and the use of several building elements (balconies, roofs, etc.) to create coherence between separate masses built on the street line. Vertical articulations of the block are also frequent tools.

In contemporary architecture, the use of the transparent block is increasingly common, since it offers an intense, liveable urban character, while extending the opportunities for a diverse development pattern and multiplies the potential for the insertion of new architecture. It enables adaptation to the local context and incorporation of existing elements, not to mention the articulation (functional, architectural, altitudinal, etc.) of the block. New construction in a traditional closed urban scene can open the boundary visually, while simultaneously preserving the closed physical sense.

In one of the historic quarters of Budapest, in Józsefváros, the Corvin Promenade project represents a unique urban renewal program. The new urban form deals with the issue of how new qualities of life can be brought to this run-down area. A large public space is cut in the dense urban tissue, and the new urban blocks that emerge are regulated with the obligation of transparency towards the promenade. The street effect is retained, with construction handled as a single volume on the ground level or on the levels below. As a result, the ground level zones interact with each other, and the street forms a traditional closed boundary wall; meanwhile, the building mass above becomes lighter, creating a sensation of openness. The perpendicular streets retain the closed character of the existing urban fabric by integrating preserved and renovated historic
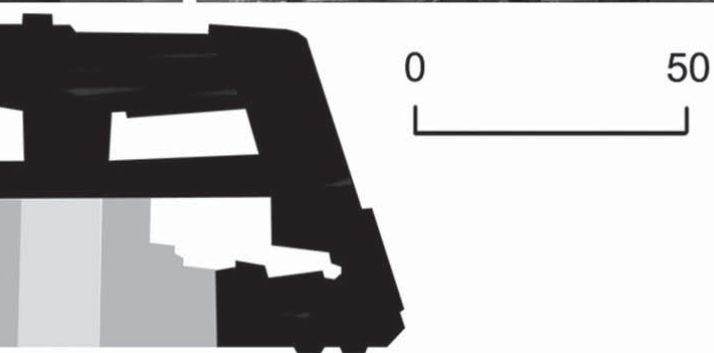
Transparent block I: Housing in Kapás utca, design Zsolt Hajnal, 2007

Transparentný blok I: Obytné domy v ulici Kapás. Dizajn Zsolta Hajnala, 2007

Photo and drawing Foto a kresba: **Melinda Benko**

apartment buildings, as well as respecting the unopened street line.

Ultimately, the transparent block, in terms of space perception and space use, results in the emergence of transitional situations. The desired separation between open spaces outside and inside the blocks stays clear. Physically the city's genuine spatial articulation remains intact, while visually the urban form becomes more open.

The transparent urban block II – break-up of closed blocks in both form and use

A new solution in urban design theory and practice tries to get rid of the past, thereby discarding both traditional closed and modernist open block form and use. The proposed development presents a hybrid that combines the advantages of the urban street block forms while providing for public use. This approach is an urban reaction within the searching process invoked by advanced architecture in the information society (Metapolis, 2003). It states that the city and its elements are constituted of non-closed, unfinished, non-determined systems that are open in spirit. It does not impose limits, but strives to multiply possibilities and create a new urbanity.

This approach, like any other novelty, is not without antecedents. Dutch structuralism

Transparent block II: Magház in Rottenbiller utca, design by Tamás Dévényi, 2002

Transparentný blok II: Magház v ulici Rottenbiller. Dizajn Tamása Dévényiho, 2002

appeared in the 60's as a criticism of modern urban design. It recognised the necessarily chaotic nature of cities and continually searched for positive forces inherent in the chaos. It advocated arranging aesthetically courageous forms into a dense fabric and creating intelligibly articulated locations, instead of the choice between historic closed blocks or oversized modernist objects in empty space. Mediated by contemporary Dutch urban design theory, these dormant ideas found their way to the surface in the 90's, re-discovering the landscape as a medium to create connections. Here, the historic urban landscape is a very broad, collective concept, taking into its scope the environment, developments, human actions and events themselves. Landscape takes shape by means of intersections; it is neither unified, nor unique or closed, but a realm of various overlapping layers (Busquets and Correa, 2006).

Often, a development area itself behaves like an island, an enclosure in its surroundings. Circulation and inner road networks determine the block's inner structure, thus designating the locations to be built within the block. The external boundaries of the area may be entirely or partly built in; thus, the group of buildings, occupying its own world, can impart a feeling of turning inward, which strengthens the use of the internal private open space like an accessible though controlled landscape.

Such a characterisation is true in the case of MOM Park in Budapest, where the design is based on the 'in-between' principle. The constructed elements of the implemented urbanised landscape are given equal importance as the in-between spaces, to create cohesion between those elements. The designed landscape gives a sense of continuity and contemporary order where fragmentation, freedom, spontaneity and features both closed and open can assert themselves.

The Maghaz (Seed House), planned to be a first-time home for young people, presents this intention on another scale (Figure 6b). Having been constructed on three plots of a traditional closed urban block, the building tries to preserve the typical closed urban form, but also enriches it with the in-between method. The landscaped courtyard is entirely public and only a translucent glass wall on the top levels makes the street line

Foto Photo: Veronika Kapišinská

felt. However, few promoters have the daring to use this typology, which offers an opportunity for the public use of the street block in contemporary Hungarian practice.

In terms of sustainability, the transparent urban block loses the compactness of form, but allows for the design of more liveable sustainable residential buildings that employ greening and passive solar design concepts. Otherwise, transparency opens the door to diversity and societal changes by creating sustainable communities.

3. THE OPEN BLOCK

The open block I – open both in form and use

Examples analysing solid / empty urban forms clearly demonstrate the well-known differences between historic and modernist cities. In the historic city, the domination of closed forms and space outweighs the constructed masses (Rowe and Koetter, 1978); whereas, in the modern open block, the boundaries are no longer the prevailing force. The coherent web of the city is broken up, and the urban culture of 'openness' takes over. The opening up of urban blocks was partly enabled by the changes in land ownership (which became possible in Budapest through nationalisation of the land and buildings after World War II) and the changes in construction scale. Historic urban blocks were generally divided into plots. Block-sized housing plots appeared only in the early 20th century, which hold a much wider diversity of potential development typologies. The theoretical foundations of a radically new urban design (e.g., the ideas of Le Corbusier and the Bauhaus) rejected the city of the past and replaced the former design principles with something utterly new. The closed effect and multiplicity were replaced by an open quality and standardisation. In this new typology, the buildings are stand-alone masses in continuous space, and the public spaces outside the blocks flow in and through the visually and physically open urban fabric. There is no traditional urban context anymore; there are no streets or blocks, no public or private areas, no exact building locations. An old desire of social and architectural utopia came true (u-topos – 'placelessness') when architectural creation was liberated and became independent from its environment. In response to the dense city of the

19th century, several urban rehabilitation projects addressed towards the inner area of Budapest proposed and sometimes realised this solution in the 60's and 70's, demolishing the existing housing blocks. However, the majority of the street blocks in the historic core have remained untouched by this type of intervention. Its most significant use took place particularly in the transition belt and on the outskirts of Budapest for the construction of housing estates, where one-third of the current population of the city lives. These estates still exist, according to the original open block system and retaining the huge public spaces around the buildings, yet experiencing great difficulties in adapting to today's living standards.

To understand, to articulate and to develop the city or urban form necessitates monuments (Rossi, 1966). In the city centre, these historic or contemporary large-scale landmark buildings are placed inside open blocks, remaining aloof, seceding from the city's fabric. These buildings are sculpturally formed (Palace of the Arts, Budapest) or globally influenced (high-rise) solitary objects. Nevertheless, their block retains the open form quality, and their use is generally public, i.e. not serving as housing.

The open urban block II – the use becomes closed again

The typical modernist open housing block, combining open form and public use, does not exist in the contemporary development projects of Budapest any longer. The American style or motorisation-based evolution of the city, in addition to the social and economic demands requiring such evolution, all favour the development of borderless structures extending over the landscape. The de-urbanisation that started in Europe in the 60's (in Budapest in the 80's) and the contemporary re-urbanisation of the former industrial areas have also accelerated the use of an urban typology based on openness. The traditional street block system disappears, substituted by islands of development. Residential communities, industrial parks and logistical areas are spreading in Budapest all around the city core, but diverging from the initial principle of modern complete openness, since the monumental plots are always closed for security reasons. Visual openness continues to prevail in

Modernist open block. Housing estate in Budapest
Ground plan of the second floor of Villa Jahn

Photo Foto: László Francsics

Contemporary
development, Graphisoft
Park, 1997 – 2010,
urban design by Ferenc
Cságoly and Béla Nagy

Súčasný vývoj. Park
Graphisoft, 1997 – 2010.
Urbánny dizajn Ferenca
Cságolyho a Bélu Nagyho

Photo and drawing Foto a kresba: Melinda Benko

the urban scenery, while physically the dynamics of closure and control characterise the use of the space.

With regard to sustainability, the essential sustainable values of a historic city centre (compactness and diversity) no longer exist in the open block. Open blocks can be developed in innovative and sustainable ways on the outskirts, but in Budapest's core, it is important to find more context-sensitive and sustainable morphological solutions.

CONCLUSIONS & DISCUSSION

The 'glocal' (Benkő and Fonyódi, 2009) is a phenomenon that responds to the particular and connects to the general: generic and specific, abstract and concrete, global and local simultaneously. This dual process is the nature of every urban development and can bring about coexistence between contradictions. A city, as an urban form, is connected to its location, to its geographical environment, where it came into being and developed throughout history. It is local: its permanent values are ensured by its location. In the case of Budapest, the city has an excellent geographical position and amazing natural, urban and architectural qualities. The potentials of Budapest are exceptional, while the challenges are increasing. The city is now facing the task of renovating housing stock and renewing the urban fabric in order to create a more sustainable city.

One of the more significant findings to emerge from this study is that sustainable developments have to be based on local circumstances using

global theoretical and technical approaches. However, the term glocal can equally be interpreted according to the idea of sustainability. It is convenient and necessary to analyse Budapest urban block patterns, to understand their morphological transformation and the significance of their closed and open urban situations according to their contribution to the objectives of sustainable development.

In general, therefore, it seems that the majority of the new developments in the city center are not engaged in sustainability; they are only profit-making investments. For the sustainable future of Budapest's city core, the physical urban fabric with various housing types, building densities, ages, etc., is not the only important factor. Diversity of activity, good city management and a well-organized urban society are also essential for environmental quality. However, the present study was designed to initiate discovery in this field by showcasing typical urban forms that directly affect habitat, space use, ecosystems and quality of urban life. It is recommended that further research be undertaken in the following areas (Jabareen, 2006):
– compactness, density and liveability of the Budapest's urban fabric in relation to contemporary lifestyle needs,
– block, housing and courtyard typology of Budapest,
– greening intervention as an important design concept in achieving sustainable urban form,
– mix of uses and diversity of forms, functions and cultures,
– sustainable transport opportunities in Budapest and amelioration of public space quality for walking and biking in the city,
– climate in the city centre, the role of the Danube, passive solar design and decreased energy use alongside reduced waste and pollution,
– sustainable communities and city management, etc.

The goal is to create an assessment system to evaluate how the different urban forms in the city center of Budapest contribute differently to sustainability. As a result, the sustainable values of the city (such as high density, adequate diversity and compactness with mixed land uses) can be preserved, complemented by new political, economic, technological and societal approaches. Therefore, new developments can be guided in more context-sensitive and sustainable directions, safeguarding the identity of Budapest's centre for future generations.

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