



FIG. 1 LUXURIOUS VILLAS BUILT FROM THE BEGINNING OF THE 20. C. (ROŽNA DOLINA IN LJUBLJANA): „THE HOUSE IS AN INSTRUMENT, A MACHINE WHICH SERVES THE HUMAN BEING NOT MERELY AS A REFUGE WHICH AS FAR AS POSSIBLE ADAPTS TO HIS NEEDS, IT MUST ALSO SUPPORT HIS ACTIVITY AND MULTIPLY THE PRODUCTS OF HIS WORK.” (ZLODRE, 1984)

SL. 1. LUKSUZNE VILE S POČETKA 20. STOLJEĆA (ROŽNA DOLINA U LJUBLJANI): „KUĆA JE INSTRUMENT, SREDSTVO KOJE NE SLUŽI ČOVJEKU SAMO KAO SKLONIŠTE KOJE SE, KOLIKO JE GOD TO MOGUĆE, PRILAGODAVA NJEGOVI POTREBAMA; ONA TREBA TAKODER BITI UPORIŠTE ZA NJEGOVE AKTIVNOSTI I OPLODITI NJEGOV RAD.” (ZLODRE, 1984.)

MARTINA ZBAŠNIK-SENEGAČNIK, ALENKA FIKFAK

UNIVERSITY OF LJUBLJANA
FACULTY OF ARCHITECTURE
SL – 1000 LJUBLJANA, ZOISOVA ULICA 12

SVEUČILIŠTE U LJUBLJANI
ARHITEKTONSKI FAKULTET
SL – 1000 LJUBLJANA, ZOISOVA ULICA 12

SUBJECT REVIEW

UDC 721.011.1:728.2:69.003 (497.4)

TECHNICAL SCIENCES / ARCHITECTURE AND URBAN PLANNING
2.01.02 – URBAN AND PHYSICAL PLANNING
2.01.03 – ARCHITECTURAL STRUCTURES, BUILDING PHYSICS,
MATERIALS AND BUILDING TECHNOLOGY

ARTICLE RECEIVED / ACCEPTED: 14. 09. 2005. / 07. 06. 2006.

PREGLEDNI ZNANSTVENI ČLANAK

UDK 721.011.1:728.2:69.003 (497.4)

TEHNIČKE ZNANOSTI / ARHITEKTURA I URBANIZAM
2.01.02 – URBANIZAM I PROSTORNO PLANIRANJE
2.01.03 – ARHITEKTONSKE KONSTRUKCIJE, FIZIKA ZGRADE,
MATERIJALI I TEHNOLOGIJA GRAĐENJA

ČLANAK PRIMLJEN / PRIHVACEN: 14. 09. 2005. / 07. 06. 2006.

URBAN, ARCHITECTURAL, TECHNOLOGICAL AND ECONOMIC TURNING POINTS IN THE CONSTRUCTION OF APARTMENT BUILDINGS IN SLOVENIA

URBANISTIČKE, ARHITEKTONSKE, TEHNOLOŠKE I EKONOMSKE PREKRETNICE U IZGRADNJI VIŠESTAMBENIH ZGRADAU SLOVENIJI

APARTMENT BUILDING CONSTRUCTION
CONSTRUCTION FINANCING
CONSTRUCTION TECHNOLOGY
SLOVENIA
URBAN PLANNING

IZGRADNJA VIŠESTAMBENIH ZGRADA
FINANCIRANJE IZGRADNJE
TEHNOLOGIJA GRADNJE
SLOVENIJA
URBANIZAM

The article presents the most important turning points in the development of the construction of apartment buildings in Slovenia. Urban planning, architecture and technology has, until recently, reflected foreign influences that have reached Slovenia with a delay. Significant turning points are also visible in economic organisation. The construction of apartment buildings is the only type of construction that is regulated, stimulated and (partly) also organised by the state.

Članak prikazuje najvažnije prekretnice u izgradnji višestambenih zgrada u Sloveniji. U urbanizmu, arhitekturi i tehnologiji donedavno su se očitovali vidljivi utjecaji iz stranih zemalja koji su do Slovenije došli sa zakašnjenjem. Značajne prekretnice vidljive su također i na razini ekonomske organizacije. Izgradnja višestambenih zgrada jedini je vid izgradnje koji regulira, potiče i (dijelom) organizira država.

EMERGENCE OF APARTMENT BUILDINGS IN EUROPE

POJAVA VIŠESTAMBENIH ZGRADA U EUROPI

The Industrial Revolution introduced considerable changes in the lifestyles and professional lives of people. The workshops of the past were replaced with serial production industrial plants that sprung up mostly in cities or their immediate vicinity. The population of these centres began to grow, but towns could not sustain the incredible pressure of the masses. On the edges of towns, poor residential quarters with extremely bad living conditions began to spread. Under these conditions, the *neighbourhood* emerged in the second half of the 19th century – a hermetic social community that was supposed to reduce the mutual alienation of inhabitants and enhance their integration in the town as a system.¹ Ideas of a systematic arrangement of the surroundings and the creation of minimal living standards emerged. One of the first humane concepts of town planning was Howard's *Garden City*, a model community of 5000 inhabitants that represented a seed of the modern idea of a neighbourhood and that was a foundation of numerous examples of town planning in the coming decades (such as C. Perry's model adopted by CIAM, by English town planners after the Second World War and later by Swedish town planners).

Models of town planning that were developed in the early 20th century throughout the developed part of Europe can be differentiated according to compositional principles. They

were all based on simple structures, that is, on three different foundations: the centric, the linear and the grid:²

– Centric concept – the most widely repeated was Howard's garden city (1898) that introduces a strictly defined order of construction in the form of concentric circles and a planned settlement policy that ensures a suitable size of the city and consequently pleasant natural surroundings. Other important representatives: E. Gloeden and his satellite towns (1923) and W. Christaller and his theory or scientific experiment of designing an ideal system of towns (1933).

– Linear concept – a town that runs continually through a landscape – *Socgrad* by N.A. Miljutin (1930) and a tree-like town with a main centrally placed road, along which individual units are arranged, by L. Hilberseimer (1944).

– Grid concept – a geometric grid that can spread in all directions – the industrial town by T. Garnier (1904-17), models by Le Corbusier (1922 and 1933) and *Broadacre City* by F.L. Wright (1932-58).

These models, the various realisations of which can be seen in different places regardless of the location, were feasible and rational – they provided equally for everybody.

TURNING POINTS IN URBAN PLANNING AND ARCHITECTURE IN SLOVENIA

PREKRETNICE U URBANIZMU I ARHITEKTURI SLOVENIJE

With these conditions, the arrangement of the urban environment emerged in Slovenia almost two thousand years after the Roman towns, with their urban ideal towns, that were built in the past (Emona, Celeia, etc.). The 19th-century Industrial Revolution did not bring large-scale industry to Slovenia, but highly developed workshops and very dynamic trade. Unlike in Europe, there was no typical development of the first 19th century industrial towns in Slovenia.³ Only towards the end of the century did the railway bring about the construction of some important industrial towns that were too small in scale to compete with similar towns abroad. An important turning point in Slovene town planning was the devastating earthquake in Ljubljana in 1895, which facilitated and demanded the first conceptual approach to the contemporary urbanisation of space. But despite several good and urbanistically pure proposals, an urban plan was selected that in long term

1 MIHELIC, 1978.

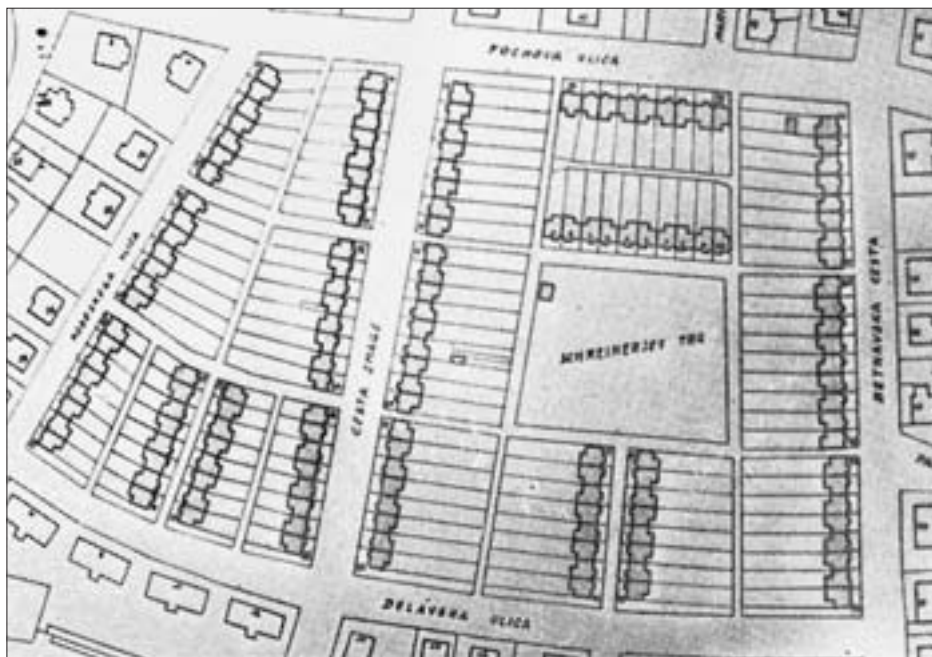
2 CAPUDER, 1993.

3 RAVNIKAR, 1982.

was only partially successful and that was full of compromises and various partial interests. This triggered an avalanche of construction that lasted several years and that was encouraged by the state with special tax relief and favourable loans.⁴ Construction in the centre of the city was limited to the arrangement of traffic (the broadening of streets and the planting of trees along them, the construction of the sewage system and of the streetcar lines). According to the adopted urban plan, most construction activities were focused in the suburbs. Different zones were created:⁵ large areas were divided into zones, each of which was assigned a different content. Residential quarters were created, where only houses and apartments could be built (villas, blocks of flats, barracks or small houses for workers, which were as inexpensive as possible). In the suburbs, simple and relatively inexpensive homes for workers were built: single-family houses and blocks of flats (*Zelena Jama* workers' colony in Ljubljana), and luxurious villas with large gardens for wealthy citizens nearer to the centre of the city (*Rožna Dolina* in Ljubljana; Fig. 1).

Plans produced by the first town planners (M. Fabiani, J. Jager, J. Plečnik, I. Vurnik) were based on contemporary European trends in town planning. Slovenes never produced an idea that would have had a significant impact on the development of urban space and lifestyle (such as Howard's garden cities). Ideas always came from abroad and with a delay. Different concepts were combined in urban planning. An important example of such a project is the Worker's Colony in Maribor (Fig. 2 – a garden city on an orthogonal grid). Its architect, Ivan Vurnik, was the first to tackle the problem of mass apartment construction in Slovenia: he planned a simple and complete urban residential area, separated from the rest of the city with trees, although well integrated in the surroundings, featuring a more or less symmetrical street grid. A new element were single-family terraced houses – the first example of this type of architecture in Slovenia. This was an important novelty in urban construction that was later also used in the same or modified way elsewhere. Models for it must be searched for in the contemporary architecture in the surrounding area of Frankfurt (Westhausen). The architecture, with its economical construction, rational layout and carefully designed exterior, can also compete with contemporary examples in, at the time, advanced parts of Europe.

The first debates about residential neighbourhoods in Slovenia emerged in the period



between the World wars. Under the influence of the progressive ideas of Le Corbusier, Lurcat and German functionalists, several projects were proposed, but they were never carried out.⁶

The period after the Second World War was marked by the „reconstruction of the country” and urbanisation of the countryside.⁷ At that time, several independent residential areas were built, displaying unifying principles that were in accordance with the socialist system, but they were not carried out according to a more ambitious concept or settlement system.

One such area was the *Litostroj* complex by the architect Edvard Mihevc (1947-63 – with M. Gregorič). The entire complex was constructed in what at the time was the edge of Ljubljana („in the middle of fields”) and was planned as an industrial complex amidst greenery. The area was divided into three parts: the residential, industrial, and cultural/educational. The residential part consisted of freestanding three-storey blocks of flats (they were elongated and featured two staircases), arranged in a grid of streets. Architecturally, the complex was innovative because of the use of prefabricated concrete elements, different forms of construction and façades.

The first post-war attempts at organised apartment construction resembled workers' colonies; but in reality they were the result of modernist ideas. In the mid-1950s, the notion of a neighbourhood that would facilitate a better life for „our urbanised people” re-

FIG. 2 WORKER'S COLONY IN MARIBOR (ARCH. IVAN VURNIK, 1927). THREE MAIN QUESTIONS HAVE BEEN SUCCESSFULLY ANSWERED – „HOW TO MAKE POSSIBLE, WITH THE RESOURCES AVAILABLE TODAY, AN APARTMENT BUILDING THAT IS FULLY EQUIPPED IN THE ARCHITECTURAL SENSE FOR A PRICE WHICH MEANS THAT EVERY INDUSTRIOUS WORKER CAN AFFORD TO PAY OFF THE INVESTED CAPITAL INCLUDING INTEREST.” (VURNIK, 1994: 89)

SL. 2. RADNIČKA KOLONIJA U MARIBORU (ARH. IVAN VURNIK, 1927.). TRI GLAVNA PITANJA NAŠLA SU OVDJE SVOJ ODGOVOR – „KAKO OMOGUCITI, NA TEMELJU DANAS DOSTUPNIH RESURSA, IZGRADNJU ARHITEKTONSKI POTPUNO OPREMLJENE VIŠESTAMBENE ZGRADE PO CIJENI PO KOJOJ BI SVAKI RADNIK MOGAO SEBI PRIUSTITI OTPLATU ULOŽENOG KAPITALA UZ KAMATU.” (VURNIK, 1994: 89)

FIG. 3 WORKER'S COLONY, MARIBOR
SL. 3. RADNIČKA KOLONIJA, MARIBOR



4 RAVNIKAR, 1982.

5 FISTER, 1986.

6 MIHELIC, 1978.

7 GABRIJELČIĆ; FIKFAK, 2002.



FIG. 4 NA JAMI, LJUBLJANA
SL. 4. NA JAMI, LJUBLJANA

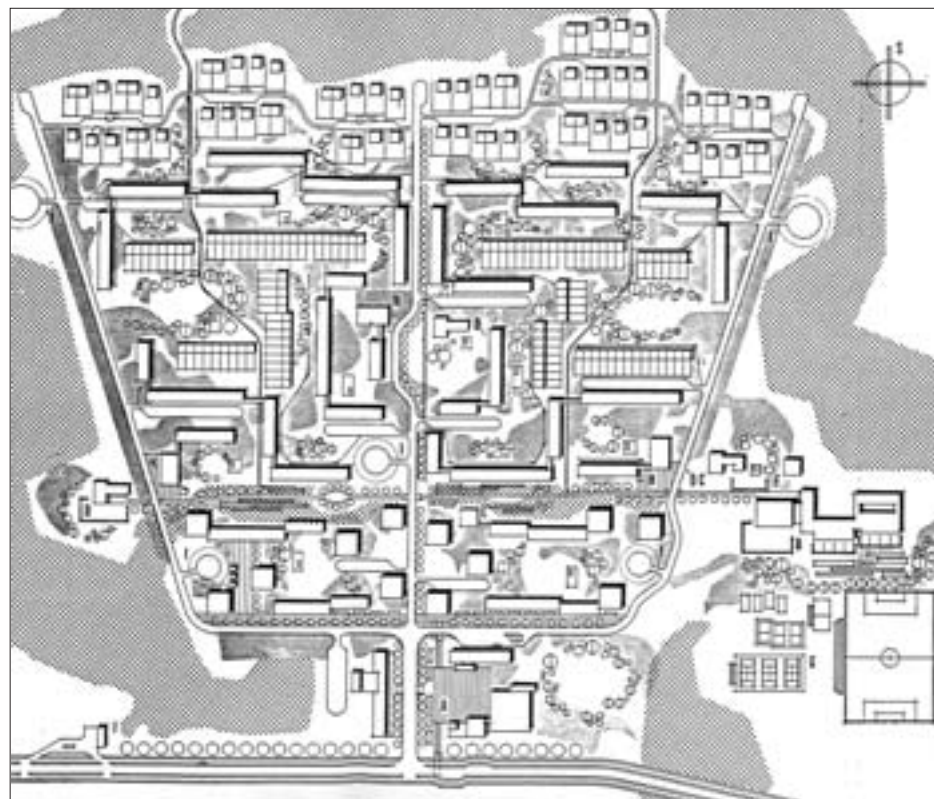


FIG. 5 MODEL OF THE IDEAL NEIGHBOURHOOD FOR 5000 RESIDENTS (ARCH. EDVARD RAVNIKAR, 1958) AND ONE OF ITS FIRST CONSTRUCTED TRANSFORMATIONS (ARCH. EDVARD RAVNIKAR, NA JAMI, LJUBLJANA). THE DIAGRAM OF AN IDEAL „UNIT OF NEIGHBOURHOOD” – A SELF-SUFFICIENT RESIDENTIAL ENVIRONMENT FED FROM A MAIN LINE OF COMMUNICATION, WITH SHOPS AND ALL THE NECESSARY DAILY SERVICES AND A PRIMARY SCHOOL AS THE CENTRAL POINT – RESPONDS COMPLETELY DIFFERENT IN REAL PHYSICAL SPACE.

SL. 5. MODEL IDEALNOGA STAMBENOG NASELJA ZA 5000 STANOVNIKA (ARH. EDVARD RAVNIKAR, 1958.) I JEDNA OD NJEGOVIH PRVIH IZGRAĐENIH TRANSFORMACIJA (ARH. EDVARD RAVNIKAR, NA JAMI, LJUBLJANA). GRAFIČKI PRIKAZ IDEALNOGA STAMBENOG NASELJA – POTPUNO OPREMLJENO NASELJE POVEZANO S GLAVNIM PROMETNICAMA, TRGOVINAMA I SVIM POTREBNIM USLUGAMA, TE OSNOVNOM SKOLOM U CENTRU – KOJE U STVARNOM PROSTORU FUNKCIONIRA SASVIM DRUKČIJE.

emerged, together with the idea that such neighbourhoods must „override the principle of workers' settlements next to industrial centres that are intended only for people of a certain vocation and social structure.”⁸ Such a neighbourhood was constructed under the supervision of the architect Edvard Ravnikar (*Na Jami*, Ljubljana; Fig. 4): according to Perry's principles, there was a school at its centre, whereas according to Swedish models, it featured a tree-lined street with a centre resembling an old village core. At the same time, the organisational and programmatic aspects of neighbourhood concepts were studied, and these studies formed a basis for later projects (such as the BS 6 neighbourhood). A neighbourhood was organised on a tree-like layout consisting of residential quarters for 300-1000 residents (a total of 5000).

The adoption of the general plan for the urban development of the City of Ljubljana in 1966 triggered a boom in the construction of homes, which can be divided into two categories:

- Neighbourhoods of blocks of flats with a large number of residents (*Fužine* neighbourhood by V. Brezar, T. Lavrič, A. Guček and others, 1980-90, built on the model of Perry's neighbourhoods; Fig. 6), and
- Residential areas on the edge of the city, consisting of individual low-rise houses (*Murgle* neighbourhood by the architect

France Ivanšek, 1965-88, built on the model of a garden city and consisting of low-rise houses with gardens – a closely-knit, organised neighbourhood of single-family homes; Fig. 8).

The two neighbourhood concepts can be compared with construction projects in Sweden in the 1960s.

In Slovenia, the criticism of the neighbourhood concept that first emerged abroad in the 1950s (inhuman scale, social differences) appeared much later. Compared to American and European metropolises, Slovene cities are much smaller, and consequently the neighbourhoods are also smaller (only a few have more than 5000 residents), which means that social life never suffered.⁹ The reason for this was also a different cultural and social life and the conformity with the political system (in self-management socialism urban planning had to be a social goal, because of which experts lost some of their competence to politicians.¹⁰

From the 1970s onwards, a residential neighbourhood prevailed as the method of urban,

8 MIHELIČ, 1978.

9 MIHELIČ, 1978.

10 KRSTIČ, 1980.

11 *** 1983.

12 PLESKOVIĆ, et al, 1976.

13 TORKAR, 1975.



FIG. 6 FUŽINE NEIGHBOURHOOD IN LJUBLJANA (DIFFERENT ARCHITECTS, 1980-1990). A MULTI-APARTMENT COMPLEX WHICH IS STILL TODAY THE LARGEST IN SLOVENIA AND HAS, BECAUSE OF THE SOCIAL STRUCTURE OF THE INHABITANTS, THE CONNOTATION OF A DEGRADED ENVIRONMENT.

SL. 6. FUŽINE – STAMBENO NASELJE U LJUBLJANI (RAZNI ARHITEKTI, 1980.-1990.). VIŠESTAMBENI SKLOP NAJVEČI JE U SLOVENIJI. NOSI KONOTACIJU DEGRADIRANOG OKOLIŠA ZBOG SOCIJALNE STRUKTURE NJEGOVIH STANOVNIKA.

municipal and technical organisation of a settlement (Fig. 11). This was a delayed adoption of Perry's principles combined with Scandinavian and English experiences. In the late 1970s, debates concerning the advantages and disadvantages of the construction of „satellite settlements” appeared.

The 1980s saw the principles of the humanisation of construction of apartment buildings implemented – the planning of less closely-knit neighbourhoods of lower buildings and encouragement of the construction of apartment buildings instead of individual homes due to the rationalisation of available construction land.¹¹ The most exceptional neighbourhood in terms of size and uniform design constructed during this period was *Zupančičeva jama* (urban planning: P. Pahor, architecture: V. Brezar, 1985-92; Fig. 13) featuring small urban blocks of flats.

In the early 1990s, Slovenia became an independent state and began to open up to Eu-

rope, from where it received ideas with a short delay. In the second half of the 1990s, organised construction came to resemble the „filling-in of empty areas” rather than an organised urban structure. Residential buildings were constructed as individual units in free areas. One of such examples was the construction on two street blocks in Tabor – a project that is artistically innovative because it consists of buildings of different designs by different architects (Podlogar, Koželj, Sadar, Pahor, 1989-92, and the neighbouring block by Kobe and Todorič, 1994). In the late 20th century, different architectural types were introduced in the organised construction of apartment buildings (terraced houses, luxurious apartment buildings, municipal apartments in blocks of flats) in a single urban complex (*Koseški bajer – Mostec*, different architects, 1999-2001; Fig. 14).

But the current rate of apartment construction is not sufficient. Every year, as many as 3000-4000 apartments should be built in Slo-

FIG. 7 FUŽINE, LJUBLJANA

SL. 7. FUŽINE, LJUBLJANA



FIG. 8 MURGLE NEIGHBOURHOOD IN LJUBLJANA – ORGANISED NEIGHBOURHOOD OF SINGLE-FAMILY HOMES (ARCH. FRANCE IVANSEK, 1965-1988). THE IDEA OF A GARDEN CITY HAS PERSISTED FROM HOWARD'S FIRST MODELS TO THE PRESENT DAY AND IS CONSTANTLY BEING REPEATED, CHANGED, ADDED TO... IT SEEMS THAT IT CANNOT BE SUPERSEDED.

SL. 8. MURGLE – STAMBENO NASELJE OBITELJSKIH KUĆA U LJUBLJANI (ARH. FRANCE IVANSEK, 1965.-1988.). KONCEPT VRTNOGA GRADA TRAJE JOŠ OD HOWARDOVIH PRVIH MODELA DO DANAS I NEPRESTANO SE PONAVLJA, MIJENJA, NADGRAĐUJE... ČINI SE DA GA NIŠTA NE MOŽE ZAMIJENITI.

FIG. 9 MURGLE, LJUBLJANA

SL. 9. MURGLE, LJUBLJANA





FIG. 10 KOSEZE, LJUBLJANA
SL. 10. KOSEZE, LJUBLJANA

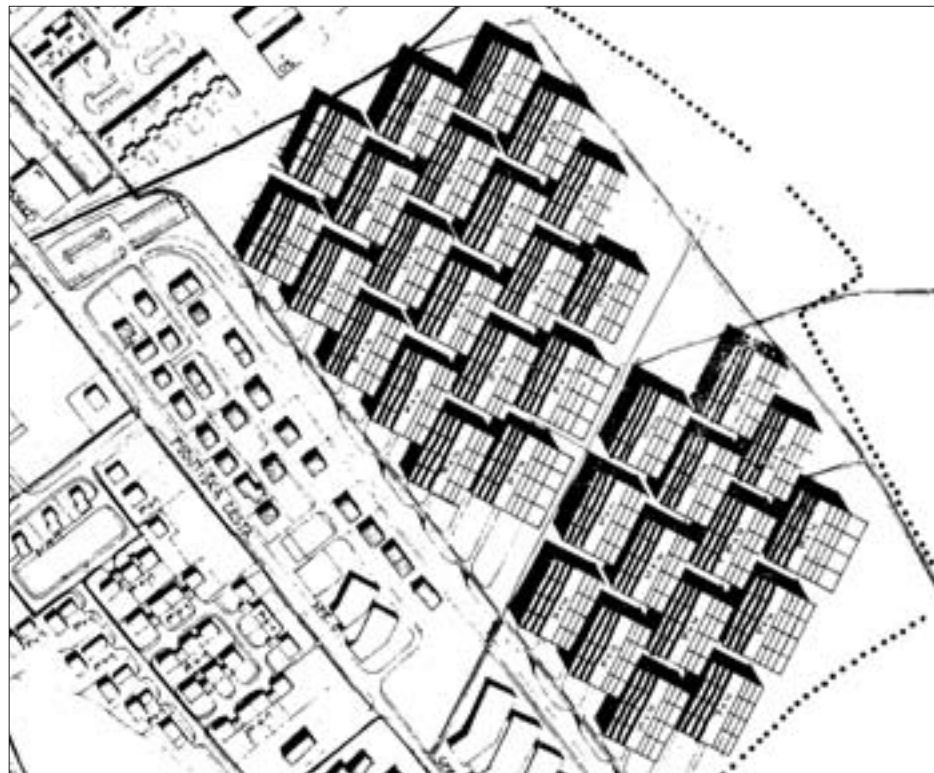


FIG. 11 KOSEZE – RESIDENTIAL NEIGHBOURHOOD IN LJUBLJANA (ARCH. VIKTOR PUST, 1968-1974): A SETTLEMENT WHICH IS STILL HUMANE AFTER THREE DECADES AND MORE, IN THE ARRANGEMENT OF BOTH THE HOUSING AND THE TRAFFIC.

SL. 11. KOSEZE – STAMBENO NASELJE U LJUBLJANI (ARH. VIKTOR PUST, 1968.-1974.): NASELJE KOJE JOŠ I DANAS, NAKON VIŠE OD TRI DESETLJEČA, ODLIKUJU OBILJEŽJA PO MJERI ČOVJEKA GLEDE ORGANIZACIJE PROMETA I STANOVANJA.

FIG. 12 ZUPANČIČEVA JAMA, LJUBLJANA
SL. 12. ZUPANČIČEVA JAMA, LJUBLJANA

FIG. 13 ZUPANČIČEVA JAMA – NEIGHBOURHOOD OF APARTMENT BUILDINGS IN LJUBLJANA (URBAN PLANNING: PETER PAHOR, ARCHITECTURE: VLADIMIR BREZAR, 1985-1992): THE REALISATION OF A SETTLEMENT WITH BLOCKS DID NOT FOLLOW THE ORIGINAL DESIGN – THE REQUIREMENT FOR GREATER DENSITY DROVE THE GREENERY OUT OF THE MODEL AND LED TO NARROWNESS AND THE PREVALENCE OF TRAFFIC.

SL. 13. ZUPANČIČEVA JAMA – STAMBENO NASELJE VIŠESTAMBENIH ZGRADA U LJUBLJANI (URBANIST: PETER PAHOR, ARHITEKT: VLADIMIR BREZAR, 1985.-1992.): REALIZACIJA NASELJA NIJE PRATILA IZVORNI PROJEKT – POVEĆANA GUSTOĆA IZGRADNJE ISTISNULA JE ZELENILO I DOVELA DO SKUĆENOSTI I PREVIŠE INTENZIVNOGA PROMETA.



venia to meet growing needs. This problem is no longer solved by the construction of neighbourhoods consisting of a large number of apartments, but with construction on small parcels in the already existing morphological pattern (*Trnovski pristan*, Sadar Vuga, 2002-2004; Fig. 16; *Zeleni gaj*, Bevk, Perovic, 1999-2001) or on empty land along roads that are

gaining significance under the pressure of contemporary urban structures (shopping centres). The stratification of the society brought about by the change in the social order has resulted in a growing demand for luxurious apartments, which requires a different approach to the construction of apartment buildings.

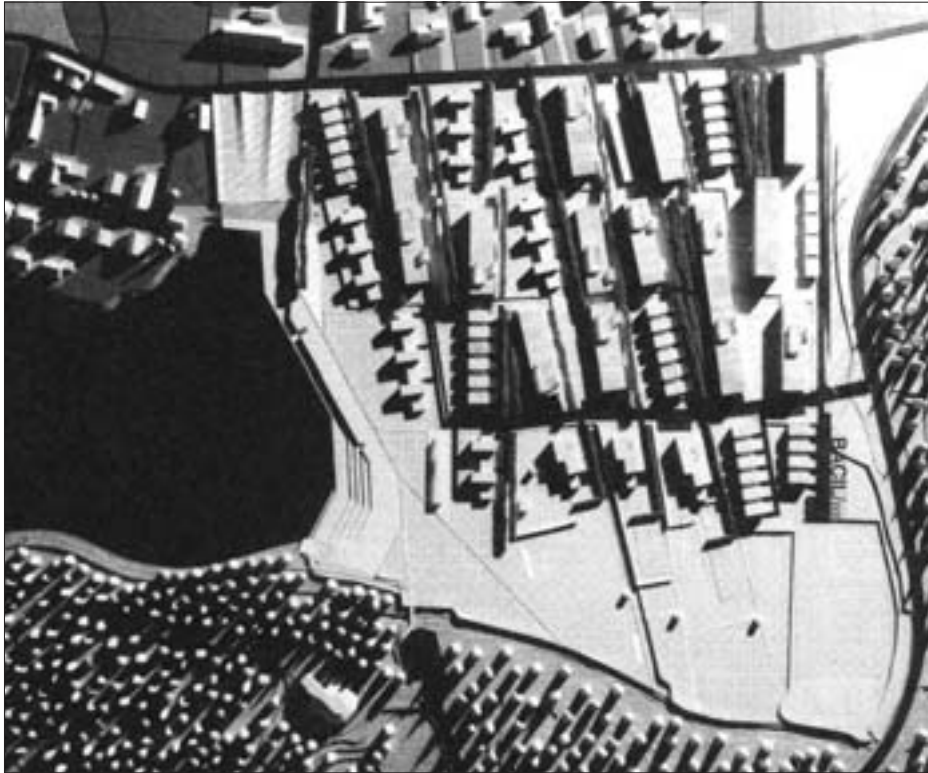


FIG. 14 KOSEŠKI BAJER – AN URBAN COMPLEX OF A RESIDENTIAL NEIGHBOURHOOD IN LJUBLJANA (DIFFERENT ARCHITECTS, 1999-2001). A MULTI-APARTMENT SETTLEMENT CLOSE TO A PLEASANT POND WHICH WOULD LIKE TO INCORPORATE THE IDEAS OF THE GARDEN CITY BUT WHICH, BECAUSE OF THE QUESTIONABLE ARRANGEMENT OF THE RESIDENTIAL UNITS, FAILS TO CONNECT WITH THE IMMEDIATE ENVIRONMENT. A „MODERN” SETTLEMENT COMBINING THE SOCIAL HETEROGENEITY OF RESIDENTIAL UNITS WITHIN THE CONTEXT OF NON-INNOVATIVE TECHNOLOGY DOES NOT CREATE A PLEASANT LIVING ENVIRONMENT.

SL. 14. KOSEŠKI BAJER – URBANI KOMPLEKS STAMBENOG NASELJA U LJUBLJANI (RAZNI ARHITEKTI, 1999.-2001.). VIŠESTAMBENO NASELJE U BLIZINI LIJEPOGA JEZERCA S TENDENCIJOM OSTVARENJA IDEJE VRTNOGA GRADA, ALI ZBOG RAZMJESTAJA ZGRADA NEMA DOBRU POVEZANOST S NEPOSREDNIM OKOLIŠEM. „MODERNO” NASELJE KOJE KOMBINIRA SOCIJALNU HETEROGENOST STAMBENIH JEDINICA UNUTAR KONTEKSTA ZASTARJELE TEHNOLOGIJE NIJE UGODAN OKOLIŠ ZA STANOVANJE.

FIG. 15 KOSEŠKI BAJER, LJUBLJANA
SL. 15. KOSEŠKI BAJER, LJUBLJANA

CONSTRUCTION TECHNOLOGY

TEHNOLOGIJA IZGRADNJE

In Slovenia, construction technology followed trends from abroad with a certain delay. Throughout the history of organised construction of apartment buildings, turning points can be defined which were vehicles of progress in this area:

- Brick construction marked the first half of 20th century;
- Introduction of a system of transversal supporting walls (*Litostrojski bloki*, Mihevc and Gregorič, 1948) and longitudinal supporting walls (*Savska kolonija*, Kobe, 1946);
- Use of reinforced concrete (after 1960) and purpose-built panelling that was initially wood and later metal (large wall panelling and tables) that facilitated large dimensions and better implementation (S-6 neighbourhood in Šiška, Arnautović, Persin; Ferantov Vrt, Ravnikar); despite the broad ground-plan it was impossible to change the layout of individual apartments;
- Skopje earthquake (1963) – the end of brick technology in the construction of apartment buildings;
- Energy crisis (after 1970) – introduction of multi-layered walls with an insulation layer and external façade layer;
- Greater flexibility of the layout (after 1980)
- part of the concrete wall was replaced with

pillars and columns, which later facilitated the moving of walls in both directions; the system of longitudinal supporting walls and façades results in a concept of a single empty cell for each apartment, facilitating individual layout design;

- Faster and better quality concrete construction – spatial (tunnel) formwork for simultaneous concrete-building of walls and ceilings; prefabricated construction (façade from concrete façade elements);
- Ecological trends (late 1990s) – reintroduction of brick (also in combination with concrete) as an ecological and sound material, rational consumption of energy in buildings, etc.

SOCIETY AND ECONOMY

DRUŠTVO I EKONOMIJA

One of the main factors in organised construction is an economical scheme or a financial budget that conforms to the relevant legislation. In Slovenia this area changed along with the social and political system. From the early 20th century until today, we can define several categories in different time periods, which dictated various ways of financing:

- Profit tenant apartments owned by large and small investors (until the Second World War);
- Transition from capitalism to socialism after 1945;



FIG. 16 TRNOVSKI PRISTAN IN LJUBLJANA – PRESTIGIOUS APARTMENTS ON SMALL PARCELS IN THE ALREADY EXISTING MORPHOLOGICAL PATTERN (ARCH. JURIJ SADAR, BOSTJAN VUGA, 2002-2004). IS THIS TYPE OF ARCHITECTURE, WHICH COMBINES IN ITSELF ALL THE HUMANE PRINCIPLES OF THE MODERN WORLD, THE ANSWER TO THE WISHES AND REQUIREMENTS OF TODAY'S OVERWORKED COSMOPOLITAN AESTHETE?

SL. 16. TRNOVSKI PRISTAN U LJUBLJANI – EKSKLUZIVNI STANOVNI NA MALIM PARCELAMA U VEC POSTOJEĆOJ MORFOLOŠKOJ STRUKTURI (ARH. JURIJ SADAR, BOSTJAN VUGA, 2002.-2004.). MOŽE LI OVAJ TIP ARHITEKTURE, KOJI TEŽI INTEGRIRANJU SVIH HUMANIH PRINCIPA MODERNOG NAČINA ŽIVOTA, ZADOVOLJITI ŽELJE I ZAHTJEVE PREZAPOSLENOGA KOZMOPOLITA S VISOKIM ESTETSKIM KRITERIJIMA?

- Rational use of living space – owners of large apartments lose their right of ownership, the authorities can make them move or move other tenants to their apartment (1945-47);
- Encouragement of collective apartment construction for politicians and professionals, financed with the state budget (1947-56)
- collective blocks of flats and the first neighbourhoods; citizens build individual homes in the countryside with their own funds;
- Loans for the construction of homes from municipal funds (1956);
- Nationalisation of farming land (1958) in the vicinity of towns encourages construction of individual homes;
- Apartment construction for the market as a consequence of economic reform (1965) strips the housing policy of its social component, resulting in the construction of „solidarity apartments.” The construction of apartment buildings rises in comparison with the construction of individual homes;
- Organised (solidarity) collecting of funds from salaries for the solving of housing problems in individual companies (1972-1990 – construction of solidarity apartments, loans, saving schemes for a specific purpose). Through mobilisation of private funds, the construction of single-family homes increases;¹²
- The founding of „housing cooperatives” for the construction of single-family homes (an organised self-management group of people with the same interests who in a joint effort meet their housing needs – subsidies for land purchase and preparation of urban and construction documentation, etc.);¹³
- Economic decline, devaluation of collected funds due to a high inflation rate, introduction of real interest rates (1989), abolition of the housing contribution system – organised construction of apartment buildings declines in comparison with the construction of individual homes;
- Declaration of Slovenia's independence, a new social system, Housing Act (1991) – through purchase, most socially owned apartments become private property (88 %);
- The founding of the Housing Fund (financed with a 20 % share of funds generated through the sales of privatised apartments and state budget) – the fund becomes the most important source of favourable loans with low interest rates;
- National Saving Scheme (organised by the Housing Fund and banks selected at a public tender) offers an attractive saving opportunity (a premium is added to the savings account at the end of each year during the saving period, favourable housing loans). In the future, long-term saving should provide funds for favourable long-term loans for the construction of individual homes and organised construction of apartment buildings.

CONCLUSION

ZAKLJUČAK

Up until the time of Slovenia's independence, the arrangement of apartment construction in the form of neighbourhoods was the goal towards which the social environment under the self-management system was oriented. The change in the social order was a turning point that affected all activities relating to the construction of buildings of this type. At the same time it gives rise to numerous questions: what influence do historic turning points in the sphere of apartment construction have on current construction? To what extent do contemporary Slovene ideas follow them or lag behind them? The answers are not simple, but nevertheless some categories already have a clearly oriented path of operation in the physical environment:

- Town planning – the planning of apartment construction is today being adapted to existing models in the field. No favoured model can currently be observed either abroad or in domestic practice. Since 2003 attempts have been made in the planning field to introduce changes in the legislative system and formulate strategic and local documents based on the stimulation of modern town planning trends (an understanding of the built environment based on the principle of systemic interconnection, „networking and layering”) and liberalisation of the market under the pressure of construction of new areas.
- Architecture – the architectural design of apartment building follows contemporary trends in other countries: low-rise blocks with an emphatically individual note, the search for different stylistic forms, the input of the ideas of contemporary modernism, the interweaving of all possible architectonic elements, forms and colours.
- Construction technology – the development of construction technology has constantly tended towards the rationalisation of construction and at the same time towards greater flexibility within apartment units. Today's technology enables considerable changes to the ground plan. The change perhaps lies in even greater adaptation of apartments to the needs of the purchaser, who has the possibility of collaborating with the planners at the planning stage and of seeking the optimal solution.
- Economy – after the socialist period, in which the role of the state in the process of planning and constructing apartment buildings was very prominent, the period since independence has seen construction left to the market. The shortage of housing has, among other things, led to an increase in property prices. Individual developers (large construc-

tion companies but also small and medium-sized ones) are buying up vacant building land, particularly within larger towns, and in most cases putting up apartment buildings. The majority of these are built to conform to ordinary living standards. The purchasers of these apartment buildings invest their own funds and at the same time take advantage of loans at different rates, including those offered by the state in accordance with the National Saving Scheme. A very small share of the apartment buildings is non-profit housing.

In recent times, and in accordance with the European model, there has also been growth in the construction of luxury apartment build-

ings in town centres. This is a new development in Slovenia.

Over more than a century since the first examples of apartment buildings in Slovenia were built, the construction of apartment buildings has taken place in five different states (the Austro-Hungarian Monarchy, the Kingdom of Serbs, Croats and Slovenes, the Kingdom of Yugoslavia, the Socialist Federative Republic of Yugoslavia and the Republic of Slovenia; and recently, it entered the framework of the sixth state – the European Union) and changed under at least three political regimes – all this has influenced the conditions for the creation of a suitable living environment for citizens.

[Translated by: AMIDAS, d.o.o.
English Language Editor: STEVE DISKIN]

BIBLIOGRAPHY

LITERATURA

1. CAPUDER, T. (1993.), *Vrednotenje kompozicijskih odnosov med obstoječimi in novimi prostorskimi strukturami*, doctoral dissertation, FAGG – Šola za Arhitekturo, Univerza v Ljubljani
2. FISTER, P. (1986.), *Umetnost stavbarstva na Slovenskem*, Cankarjeva založba, Ljubljana
3. GABRIJELČIČ, P., FIKFAK, A. (2002.), *Rurizem in ruralna arhitektura*, Fakulteta za arhitekturo, Univerza v Ljubljani
4. KRSTIČ, B. (1980.), *Graditev naselij – del razvoja socialistične družbe*, „AB”, 48-49: 10-13, Ljubljana
5. MIHELIC, B. (1978.), *Razvoj soseske*, „AB”, 39: 6-7, Ljubljana
6. PLESKOVIČ, B., et al. (1976.), *Jugoslovanski sistem planiranja in problem črnih gradenj*, „AB”, 29: 4, Ljubljana
7. PRELOVSEK, D. (1979.), *Arhitektonska obnova Ljubljane po potresu 1895*, „AB”, 43: 16-17, Ljubljana
8. PUST, V., et al. (1984.), *Aktualni problemi stanovanjske gradnje v Sloveniji*, „AB”, 68-69, Ljubljana
9. RAVNIKAR, E. (1982.), *Kratek oris modernega urbanizma v Sloveniji*, Referat na 1. posvetovanju arhitektov v Dubrovniku 1950., „AB”, 60/61: 4-6, Ljubljana
10. TORKAR, V. (1975.), *Stanovanjske zadruga kot (ne)alternativa obstoječi organiziranosti stanovanjske izgradnje*, „AB”, 26/27: 33-34, Ljubljana
11. *** (1983.), *Večdružinska gradnja – Zaključno poročilo o poteku natečaja in rezultatih*, „AB”, 66-67: 36-49, Ljubljana
12. *** (2000.), *Nacionalni stanovanjski program (NPSta)*, „Uradni list Republike Slovenije,” 10(43): 5769, Ljubljana

SOURCES

IZVORI

ILLUSTRATION SOURCES

IZVORI ILUSTRACIJA

- FIG. 1 Photo: authors, 2005
- FIG. 2 KOŽELJ, REPŠE, 1994: 204
- FIG. 3 Photo: authors, 2005
- FIG. 4 Photo: authors, 2005
- FIG. 5 RAVNIKAR, 1995: 70
- FIG. 6 PUST, et al., 1984: 9
- FIG. 7 Photo: authors, 2005
- FIG. 8 IVANŠEK, 1988: 23
- FIG. 9 Photo: authors, 2005
- FIG. 10 Photo: authors, 2005
- FIG. 11 PUST, et al., 1984: 3
- FIG. 12 Photo: authors, 2005
- FIG. 13 KOŽELJ, 1986: 89
- FIG. 14 DESMAN, 2000: 38
- FIG. 15 Photo: authors, 2005
- FIG. 16 Photo: authors, 2005

SUMMARY

SAŽETAK

URBANISTIČKE, ARHITEKTONSKE, TEHNOLOŠKE I EKONOMSKE PREKRETNICE U IZGRADNJI VIŠESTAMBENIH ZGRADA U SLOVENIJI

Višestambene zgrade nastale su zahvaljujući industrijskoj revoluciji. Industrijska postrojenja u gradovima ili u njihovoj blizini trebala su brojnu radnu snagu. Ljudi su se počeli seliti iz sela u gradove koji su teško mogli zadovoljiti potrebe tako velikog broja ljudi. Promjene u organizaciji stambenih zajednica u drugoj polovici 19. stoljeća dovele su do pojave koncepta stambenog naselja, kao i prvih koraka prema planskom reguliranju prostora i osiguravanju minimalnih životnih uvjeta. U različitim zemljama svijeta nastali su različiti modeli urbanističkog planiranja koji su bili važne prekretnice u suvremenom urbanizmu.

Slovenija u 19. stoljeću, za razliku od drugih europskih zemalja u to doba, nije doživjela tipičan razvoj industrijskih gradova s obzirom na činjenicu da su njezini gradovi u to vrijeme bili maleni. Značajna promjena u urbanizmu u Sloveniji zbila se nakon razornoga potresa u Ljubljani 1895. g. Tada je nastala tendencija prema konceptualnoj, modernoj urbanizaciji. Prvi su urbanisti svoje urbanističke planove temeljili na tada prihvaćenim, suvremenim europskim smjernicama. Slovenija je tek trebala doći do originalnih zamisli koje bi imale značajan utjecaj na razvoj urbanog prostora i načina života. Ideje su uvijek dolazile iz drugih zemalja, ali s vremenskom odgodom.

Unatoč tome, neki primjeri svjedoče o primjeni internacionalnih ideja u slovenskom kontekstu. Jedan od takvih primjera jest višestambeno naselje iz 1927. g. Izgrađeno je kao radnička kolonija u Mariboru prema projektu arhitekta Ivana Vurnika. Osnovu plana činila je manje-više pravilna mreža ulica s obiteljskim kucama u nizu. Ovakva arhitektura koju karakterizira ekonomska izgradnja, racionalan tlocrt i dobro projektiran eksterijer, usporediva je

sa suvremenim modelima naprednoga dijela Europe onoga doba.

Razdoblje nakon Drugoga svjetskog rata obilježeno je „obnovom domovine” i planskom deagrificacijom ruralnih područja. U prvim poslijeratnim godinama nastalo je nekoliko autonomnih rezidencijalnih područja koja su objedinjavala principe jednoobraznosti u skladu sa socijalističkom društvenom orijentacijom; npr. kompleks „Litostraj” arhitekta Edvarda Mihevc (1947.-1963. s M. Gregorić), koji se sastojao od stambenog, proizvodnog i kulturnog odnosno edukacijskog sektora. Stambeni sektor činile su trokatnice. Sredinom 50-ih godina 20. st. koncept stambenog naselja ponovno je postao aktualan. Stambeno naselje *Na Jami*, s osnovnom školom u središtu, građeno je u skladu s Perryjevim konceptom pod vodstvom arhitekta Edvarda Ravnikara. Veci broj takvih naselja nastao je u Ljubljani nakon 1966. g. Istodobno su se pojavile studije koncepta stambenog naselja kao osnove kasnijem planiranju (npr. BS 6 stambeno naselje). Od 70-ih godina 20. st. stambeno naselje postalo je osnovica organizacije planiranja, infrastrukture i tehničkih aspekata naselja.

Osamdesetih godina razvila se žestoka polemika oko nehumanih uvjeta stanovanja u naseljima pa se planiranje preusmjerilo prema gradnji niskih zgrada srednje gustoće naseljenosti i poticanju izgradnje više-jediničnih cjelina (*multi-unit construction*). Iz tog razdoblja potječe naselje *Zupančičeva jama* (urbanist Peter Pahor i arhitekt Vladimir Brezar, 1985.-1992.) koncipirano po modelu maloga urbanog bloka.

U drugoj polovici devedesetih godina 20. stoljeća organizirana izgradnja ispunjavala je praznine u urbanoj strukturi. Na početku novoga tisućljeća došlo je do promjena u organiziranju izgradnji više-jediničnih cjelina (*multi-unit construction*) zahvaljujući pojavi

različitih tipova zgrada u istome urbanom kompleksu (npr. *Koseski Bajer-Mostec*, razni arhitekti, 1999.-2001.). Razvoj tehnologije snažno je utjecao na promjene u izgradnji višestambenih zgrada. Napredak u tome području posljedica je nekoliko prekretnica – upotrebe opeke, primjene poprečnoga nosivog zida, upotrebe armiranog betona, potresa u Skopju, energetske krize, potrebe za povećanom fleksibilnošću u tlocrtima, potrebe za bržom i kvalitetnijom gradnjom u betonu te ekoloških trendova. Danas se opeka ponovno koristi, a osobito se naglašava potreba racionalnoga korištenja energije u zgradama.

Ključni čimbenik u organiziranoj izgradnji jest osiguranje financijskih sredstava ili, drugim riječima, gospodarstvo. U Sloveniji su se te promjene odvijale istodobno s promjenom društveno-političkog sustava. Od početka 20. st. do danas mogu se izdvojiti sljedeći trendovi: iznajmljivanje stanova radi zarade, prijelaz iz kapitalizma u socijalizam, poticanje izgradnje višestambenih zgrada kroz financiranje iz državnog budžeta, financiranje izgradnje stanova putem zajmova iz općinskih fondova, nacionalizacija poljoprivrednog zemljišta, gradnja stanova za tržište, organizirano prikupljanje financijskih sredstava iz dohotka radi rješavanja stambenog pitanja zaposlenika u poduzećima, osnivanje stambenih zadruga, pad vrijednosti prikupljenih sredstava kao rezultat visoke inflacije, stjecanje državne nezavisnosti, zakon o izgradnji, osnivanje Stambenog fonda i Program nacionalne štednje.

Slovenija se danas suočava s nestasićom svih oblika stanova što opet dovodi do povećanja cijena nekretnina. Raslojavanje društva dovelo je do povećane potražnje za luksuznim stanovima, a to zahtijeva drukčiji pristup izgradnji stanova. Ipak, u arhitekturi i planiranju okoliša Slovenija slijedi moderne trendove drugih zemalja.

MARTINA ZBAŠNIK-SENEGAČNIK
ALENKA FIKFAK

BIOGRAPHIES

BIOGRAFIJE

MARTINA ZBAŠNIK-SENEGAČNIK, Dipl.Eng.Arch., Ph.D., born in 1961 in Ljubljana. She graduated from the Faculty of Architecture in Ljubljana in 1986. She won her master's degree in 1992 and her doctorate in 1996. She is assistant professor since 2000. She teaches Ecological Architecture at the Faculty of Architecture in Ljubljana.

ALENKA FIKFAK, Dipl.Eng.Arch., Ph.D., born in 1966 in Šempeter pri Novi Gorici. She graduated from the Faculty of Architecture in 1992. She won her master's degree in 1997 and her doctorate in 2004. Since 1996 she has been employed as an assistant lecturer at the Faculty of Architecture in Ljubljana.

Dr.sc. **MARTINA ZBAŠNIK-SENEGAČNIK**, dipl.ing.arh., rođena je 1961. u Ljubljani. Diplomirala je na Arhitektonskom fakultetu u Ljubljani 1986. godine. Magistrirala je 1992. godine, a obranila doktorsku disertaciju 1996. Godine 2000. postala je docentica. Predaje ekološku arhitekturu na Arhitektonskom fakultetu u Ljubljani.

Dr.sc. **ALENKA FIKFAK**, dipl.ing.arh., rođena je 1966. u Šempeteru kod Nove Gorice. Diplomirala je na Arhitektonskom fakultetu 1992. Magistrirala je 1997., a obranila doktorsku disertaciju 2004. godine. Od 1996. zaposlena je kao asistentica predavaca na Arhitektonskom fakultetu u Ljubljani.