

**Illustrations:**

- Figure 1:** The selected sites included in a case study in Ljubljana (Goličnik, 2005: 63).
- Figure 2:** The overall patterns of daily occupancies of Trg Republike in the mornings (left) and afternoons (right) (Goličnik, 2005: 94)
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Translated by Barbara Goličnik.

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## Synergetic conceptualisation of the new compact centre Ilovica in southern Ljubljana

### 1. Introduction

In Ljubljana the demand for building land is very high, especially for housing. We can establish that in the last years the scope of complex housing development has been diminishing, but because of the growing demand prices of land and homes have correspondingly have been growing. Besides, in the wider area of Ljubljana dispersed housing is rather extensive. These are unorganised low-density areas (mostly detached single-family homes), often with deficient utilities and low environmental standards. The prevalent circumstances demand clearing, suitable densening in well-accessible areas and the creation of complementary struc-

tures with mixed contents, such as: businesses and commercial programmes, services, crafts and manufacturing programmes, but above all, denser housing patterns with better use of building land. Thus we could alleviate the issues caused by dispersed housing and provide these areas with missing contents, which would also benefit their economic revitalisation.

Besides architectural-urbanistic planning and solving of technical-technological issues, one of the key conditions for implementing such a project is the adequate use of land policy instruments (re-plotting etc.) with a well-prepared investment programme, which is based on the assessment of economic feasibility (preparation of the building land and construction the utilities network and the buildings themselves).

At The urban Planning Institute we were aware of these requirements also when we were commissioned by the Municipality of Ljubljana to undertake a project about issues of dispersed and denser settlements (Šašek Divjak et al., 2001, 2002 etc.). In one of these projects (Šašek Divjak et al. 2003, 2004) we did a detailed study of the Ilovica area (planning zones VS1/5 in VK1/1), which was also a test case study project for the contractor. We tried to complete a comprehensive research of all the emergent issues. Thus working in a multi-disciplinary team of various disciplines and professionals was essential (architect, urbanist, building mechanics engineer, hydrologist, surveyor, civil engineer and economist). Only such cooperation, which is a consequence of mutual action, can lead to good results with synergetic effects.

### 2. Dealing with the Ilovica site (VS1/5 and VK1/1)

Between the roads Ižanska cesta, Jurčkova cesta, Peruzzijska ulica and the southern ring road

Because of its vicinity to the city centre and green hinterland of Golovec Hill and the Ljubljansko Barje (Ljubljana Marsh), the area has a beneficial position. With the completion of the southern ring road its accessibility significantly improved. Its setting enables good connections to the business and shopping centre Rudnik, as well as the nearby commercial, health care and cultural centre Rakovnik.

Towards the East, the Rudnik sport«s park is planned, which articulates the development area«s edge. According to the Spatial development concept of Ljubljana (2001) this is also the green park prospect connecting the two entities of Golovec and Barje. Nearby, towards the West, lies the interesting waterfront area of the Ljubljanica River, while towards the North lies the hilly Golovec. Both are easily accessible from the proposed new neighbourhood.

Appeals against the plans prepared in the 80s consisted of objections about the area«s scope and possible number of new residents in the area (according to the proposal from 1987, more than 20.000, and slightly less – 15.000, in 1988). Despite the area«s size, this number of new residents would be too high and a serious ecological burden. Therefore it was necessary to reconsider the relationship between built and un-built surfaces, number of inhabitants and building economics. The morphological concept of Ljubljana (MOL, 2001) suggested low and medium density building amidst greenery.

In the analytical phase of the research the following was included:

- Analysis and critique of ongoing planning in the area,
- Specific issues and weaknesses in the area (building on marshy ground, issues of dispersed settlement and other extant developments, deficient utilities infrastructure, hydrological problems, need for dry water retention surfaces),
- Advantages and qualities in the area (living quality, structural and visual qualities ...),
- Possibilities and obstacles concerning use of land policy instruments, with respect for the new planning laws (Law on physical planning and Law on building),
- Other.

Based on these findings a first draft of the layout and programme scheme was prepared. In the second phase of the project, which is presented in this article, for the chosen area Ilovica (VS1/5 and VK1/1) we further elaborated the following:

- Building proposal with programme concepts and phases of development (dr. Mojca Šašek Divjak, architect),
- Proposal for drainage and accumulating water in the area (Darko Anzeljc, civil engineer),
- Test case of re-plotting building land with stated spatial measures needed for implementation of the planned development (dr. Mojca Foški, surveyor),
- Approximate calculation of land preparation costs with consolidation and costs of equipment: clearing the land, construction of the traffic and utilities infrastructure and preparation costs (Janko Žnidaršič),
- Estimate of economic feasibility of the investment (Milena Tržan, MA, economist), which answered the following questions:
  - What is the value of investment for purchasing the land needed for construction of the utilities infrastructure and public programmes?
  - How much starting capital does the municipality need to enter the process as an active player in the project?
  - How soon will the municipality experience returns?

### **3. The neighbourhood's programme and capacity**

#### **Basic guidelines**

The analyses and estimates concerning spatial qualities of the wider and immediate area showed that that area can offer good residential quality and a healthy environment.

From the landscape aspect the Ilovica area, as part of the Ljubljana marsh (Barje) is rather degraded. Because of rapid urbanisation in the last decade (dispersed, often illegal developments) it is steadily losing its typical indicators of marsh-land cultivation and colonisation. Despite these increments of dispersed development the area has nevertheless still preserved some structural and visual qualities, which were seriously considered during planning.

The water management study, done for the area (Šiško and Anzeljc, 2000), defined areas susceptible to flooding and gave calculations of high water. The findings were used when positioning and calculating necessary retention surfaces, which were dealt with in detail in the proposal for drainage and water retention (Darko Anzeljc).

Because of the findings from research concerning noise and air pollution because of motorised traffic, but also those concerning flooding, we kept the southern part of the area empty or as a reserve surface for development (com-

ination of manufacturing and housing programmes. The advantage was given to preservation of green surfaces, which could help in easier water management and provide the neighbourhood with an additional green recreation space.

Our proposal for developing the particular blocks follows directives concerning sustainability of residential neighbourhoods. Particular quarters are organised as entities where various programmes intertwine, we enforced mixed use, mainly along the more important communication routes and varied building typology. The mix of compatible activities is also important.

The predominant land use is housing, which also includes complementary activities (schools, kindergartens, shops for elementary supply, personal services, health-care institutions, parks, sports and children's playgrounds). Jobs will be found in areas intertwined with housing, thus the area will not be zoned into separate units. However areas for businesses, supply, various services, catering etc. lie adjacent to the public and easily accessible surfaces. Smaller production or manufacturing facilities are positioned in a manner that doesn't hinder the housing functions.

We were highly respectful to the extant structures and preserved them. The area of new development (without the green passage PST, intermediate built structures and water retention surfaces) covers 46,3 hectares. The parameters of the development testing, that follows the new directives, demands and also variations, show that the area's capacity is:

- number of housing units: 1900–2300
- number of new residents: 5700–6900
- number of jobs: 650–900.

#### **Traffic**

The Jurčkova Street will have to take on the substitute role of primary road from Dolenjska Street, especially because the latter singly feeds the wider Rudnik area. The development proposal brings better traffic accessibility throughout the Peruzzijska Street and besides the extant low housing includes several higher buildings that determine the entrance from the ring road to the city. The E-W connection links the central communication from Peruzzijska Street to Ižanska Street, and runs all the way to the Ljubljana River. In the N-S direction the main communication is the extant Mihov štradon, which links to the widened and partly new Lahova path.

The area lies adjacent to the Dolenjska railroad, which should be modernised according to the plans for the Ljubljana urban region and equipped with a railway stop for better regional passenger service. At present accessibility by public transport is poor, but in the long run a proposed light-rail line will run along Jurčkova Street within the wider network of the city's tramway system.

The entire area will be equipped with cycling and pedestrian paths that are integrated along the roads. The main pedestrian path runs in the green cleft in the N-S direction and joins the housing areas and other areas with public programmes with both the public transport stops. It connects to the main traverse pedestrian path, running in the E-W direction that runs along Peruzzijska Street to the waterfront of the Ljubljana River.

#### **Description of the neighbourhood structure and programmatic scheme**

- The primary green rift (N-S and E-W) divides the neighbourhood into four parts. All were treated as rather inde-

pendent units, we proposed different patterns of building (multi-apartment blocks to detached houses), different heights (predominantly low, from 4 to 1 floors) and varied programmes.

- The extant buildings and the green PST cut the area and hinder the plan's comprehensiveness. Therefore it is necessary to immediately enforce measures that would prevent further unorganised occupation of the land.
- We proposed emphasised mixing of functions along the main communication routes, with basically central programmes (business, retail, catering), which have already started to take roots.
- Near the central park area (N-S direction) and along the PST, public programmes are grouped (primary school, two kindergartens, home for the elderly, community hall).
- Two public transport stops (bus) are planned in the neighbourhood at reasonable walking distances (400–500 m pedestrian access). They represent the central organisation points of the neighbourhood, which are complemented with commercial, business and public programmes.
- We were respectful for city-building elements along the more important communication routes: there we formed a street, while the places for gathering and socialising are the squares, parks and open perimeter blocks with internal green surfaces.
- Larger buildings with predominantly business, retail and catering programmes by the important communications are aligned by the street space and emphasised on either side with lines of trees, which give the streets an urban character.
- The open perimeter block layout, blocks and villa-blocks are complete multi-apartment housing units, where independent neighbourhood communities can emerge with common green surfaces for recreation, play and socialising.
- The types of compact single-family housing in the neighbourhood's interior and larger green surfaces are: row housing, chain housing, atrium housing, growing housing. In the south part we proposed a combined manufacturing-housing area (houses with production and warehousing extensions).
- Because of the necessary comprehensive dealing with the area during construction of roads and the utilities infrastructure and the need to prepare substantial quantities of building plots in early phases of the project (consolidation) with parallel re-plotting, we decided to propose two phases of preparation and construction. However, because of the site's size, probably more construction sub-phases will be necessary. The logical division is into four sub-phases, since these quarters represent relatively independent entities.

#### 4. Possibilities for integrating real estate policy parameters

In the Ilovica area, re-plotting is a possible instrument. The problem of small plot structure and dispersed ownership can be effectively alleviated by a re-plotting procedure. The area is rather expansive, which can prove a benefit or hindrance in the re-plotting procedure. The benefit is above all, economic rationality. Re-plotting for a large area is more rational and sensible and in general provides better results (larger manipulative space). Because of the large number of re-plotting participants the procedure can be lengthy and also difficult to manage (we nevertheless have to be care-

ful to remain in the eight year time-span as is proscribed for location plans).

If the municipality wishes to start a re-plotting procedure in Ilovica, it has to obtain a somewhat larger share of »active« land, so that it can be the initiator of the procedure. It is not very likely that the municipality will purchase 67% of the necessary land, which would entitle it to undertake the procedure by itself. Probably other investors will appear that have large land-ownership shares and will be interested to undertake the proposed development. It is however vital for the municipality to have a large enough share to have an active role in the re-plotting procedure.

Since the area is so large we believe that re-plotting organised by the landowners themselves is practically impossible. The procedure should therefore be managed by the municipality (besides the administrative procedure it should also be active in stimulating the owners, preparation works, caring for simultaneous preparation of the planning document and the re-plotting procedure), which would also provide financial backing. In exchange for the financial support it would gain the necessary common surfaces.

#### 5. Approximate calculation of costs of preparation and utility provision and assessment of economic feasibility of investment

The calculation of costs of preparation and equipping the land includes clearing the land and construction of the traffic and utilities infrastructure, including costs of preparatory work. The construction of the utility lines was calculated on the guidelines from the geo-mechanical report (Strniša, G., Lesjak, I. 2003), which suggested building the utilities infrastructure in consolidated ground. Because of uniform consolidation covering as much of the land as possible, it is sensible to undertake the consolidation of roads together with parking areas and open spaces by the buildings (public and private). The investor should also strive for clearing of as much as possible simultaneously. Simultaneously to clearing the surfaces for roads, or with a very short pause, the municipality should try to clear all surfaces for parks and public buildings and find possibilities to do the same for privately owned land.

Parallel to the decision to develop the described area VS 1/5 and VK 1/1 Ilovica, which is only partly building land, the Municipality of Ljubljana should first change the land use of part of the area from agricultural to building land, thus creating the necessary condition for urbanisation. The estimate of economic feasibility was undertaken from the set programme guidelines for the proposed development, which determined uses for the different areas, approximate calculation of costs of land preparation with consolidation and utilities equipment, which were then used to calculate the possible communal levy and compensation for using building land.

To ease the re-plotting phase, the area was divided into two phases. Preparation of the location plan and re-plotting occur simultaneously. A smaller time break (six months) happens between the first and second phase, during the preparation of the plans for clearing the land and beginning of

the land consolidation exercise, as well as land preparation and building itself. The buildings planned for the second phase should be completed one year after completion of those of the first phase.

Corresponding to the stated phase benchmarks the following was done:

- Estimate of costs of land preparation, including costs of land consolidation,
- Estimate of construction costs of the primary and secondary utilities infrastructure,
- Estimate of direct investment effects (communal levy and compensation for using building land),
- Description of indirect investment effects,
- Definition of economic feasibility of the investment.

The indirect, measurable effects of investment were determined on the basis of estimated costs – expenditure and income. This was followed by calculation of investment effectiveness, indicated by the duration of returns on the invested resources. Expenditure includes costs of investment, i.e. purchase and preparation of land with consolidation and utilities equipment. Income includes payments from the communal levy and compensation for using building land.

The financial flows showed that the time of return was shorter than the economic age of the investment (individual utilities 30 years, road on marshy ground 10 years, averaging 20 years). The calculation of financial flows showed that the time of return of invested resources would be 11 years. According to the stated indicator we can ascertain that the investment into land preparation and construction of the utilities infrastructure is justified.

## 6. Conclusion

We prepared a model for denser settlement and pointed out possibilities for implementation for the Ilovica area. The municipality can find various motives in such a model of denser settlement, namely:

- Strategic (the municipality can increase land occupation in areas of dispersed settlement, improve the extant condition, limit illegal developments and thus increase and stimulate organised forms of building);
- Economic (the municipality can activate previously invested resources and activate capital, which is lying dormant in land and the utilities infrastructure);
- Developmental (answering the demand for building land for housing – for owner-occupied or rented homes and to stimulate certain types of programmes).

From our assessment of economic feasibility we can ascertain that the planned investment could be implemented, but because of the project's demands respect for the proposed measures and good organisation of the entire development scheme are of key importance. Of course the services of experts akin to building on marshy lands would be compulsory.

Large development projects, such as Ilovica, demand a multi-disciplinary approach, whereby only cooperation of different professionals can lead to good results and the synergetic effects of their endeavours can become visible. The planning and execution phases also demand the integration and linking of numerous other actors: the municipa-

lity, various investors, financial institutions, funds, but also the participation of the local community, present residents and all other interested citizens.

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### Figures:

**Figure 1:** Representation of the wider area of the Ilovica neighbourhood (author: Mojca Šašek Divjak, assistant: Boštjan Cotič, UIRS 2004)

Markings: VM (emphasised city gateway), RU (links to the business and shopping district Rudnik), G (link to nature of the Golovec area), LJU (link to the Ljubljana waterfront), RA (link to the commercial, cultural, health care centre Rakovnik)

**Figure 2:** Alongside the main communication routes businesses and services are blossoming (retail, catering, services etc.)

**Figure 3:** The canal Zgornji Galjevec and a short section of the Path of memories and comradeship run along the road Jurčkova pot. Further down the latter runs through the estate.

**Figure 4:** New developments along Mihov stradon.

**Figure 5:** Many buildings, even new ones, grew near the southern ring road

**Figure 6:** Development proposal and programmatic scheme (author: Mojca Šašek Divjak, assistant Boštjan Cotič, UIRS 2004)

**Figure 7:** The buildings were often built along the internal paths at the beginning of the long and narrow plots. Later new buildings were added as extensions by their descendants and the plots remained vacant or were intended for agriculture. It is difficult to organise these new additions or connect them with the extant structure. In fact the quantity of cultivated agricultural land is diminishing.

**Table:** Comparison of land policy instruments for the Ilovica area (author: Mojca Foški)

For sources and literature turn to page 69.

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