

PAPER • OPEN ACCESS

Sustainable Urban Strategy of the City of Ljubljana: The New City Center in Stanezice

To cite this article: Lucija Azman Momirski 2019 *IOP Conf. Ser.: Mater. Sci. Eng.* **471** 102047

View the [article online](#) for updates and enhancements.



IOP | ebooks™

Bringing you innovative digital publishing with leading voices to create your essential collection of books in STEM research.

Start exploring the [collection](#) - download the first chapter of every title for free.

Sustainable Urban Strategy of the City of Ljubljana: The New City Center in Stanežice

Lucija Azman Momirski ¹

¹ University of Ljubljana, Faculty of Architecture, Zoisova 12, 1000 Ljubljana, Slovenia

lucija.azman@fa.uni-lj.si

Abstract. This study evaluates the competition solution for the new city center in Stanežiče in line with the Sustainable Urban Strategy of the City of Ljubljana. The proposal focuses on the large gravel pit created because of years of exploitation of the terrain, which has acquired the dimensions of an altered landscape. By preserving the pit as a valley, the project also preserves natural elements and does not attempt to modify or camouflage the transformed landscape, but rather seeks to emphasize that elements of a degraded urban area can be used in the solution concept. The proposed modified urban landscape incorporates well-thought-out harmonization between the urban and the rural in order to provide a new and completely original character for the future housing development. Due to the competition requirements that soft edges needed to be designed for the deep central part, the housing takes the form of terraced buildings that descend to the bottom of the valley, and the green roofs of these buildings adjoin the central part of the empty space along their edges. The design is also intended to protect the area from the impact of noise and other unwanted negative influences. Through cutaways joined by a city rail route, the projecting slopes of the eastern edge of the gravel pit are extended all the way to the edges of the main thoroughfare, Klagenfurt Street (*Celovška cesta*), creating an area for multistory business premises underneath. This allows one to walk unhindered between the floor of the newly designed valley and the edge of Klagenfurt Street (*Celovška cesta*). Another unique feature is the public open area along the city rail route, which ascends onto the business buildings' green roofs. Views of dominant natural features (Mount Saint Mary and the Kamnik Alps) and manmade features (St. James' Church in Stanežiče) are the main motif of the public space in the green valley of the new housing development. The solution premises sought to provide quality of urban life, strengthen development activities, and ensure social justice. The planned infrastructure for sports, recreation, and leisure activities, as well as the importance of the extensive green system, confirm that the project's premises are aligned with the contemporary sustainable urban policy.

1. Introduction

At the end of 2004, the City of Ljubljana, in cooperation with the Housing Fund of the Republic of Slovenia and the Chamber of Architecture and Spatial Planning of Slovenia (ZAPS), launched a public, open, conceptual (for the entire area), and project (for the first phase) architectural and urban design competition for New Stanežiče in Ljubljana [1]. In addition to the design of the new urban area in Stanežiče, the subject of the competition was the presentation of guidelines and solutions for activities, for the urban, architectural, and landscape design of the settlement, for its traffic regulation, and for the phases of its construction. Based on the selected competition solution, the Municipality of Ljubljana



was expected to prepare a spatial implementation plan and to include it in the municipality's spatial development strategy.

Stanežiče is located on the northwestern edge of Ljubljana, where the dense suburban structure ends and the area acquires a rural character. Stanežiče used to be a village area with a characteristic open-field system with selions. The development of Ljubljana and other conditions have influenced the abandonment of agriculture. The southern part of the area is a gravel pit. The entire periphery of Stanežiče is under the strong influence of family housing. The Stanežiče area has been planned for residential development since 1960, when the urban development plan set the direction of the urban development areas. In the years leading up to 2000, the size and capacity of the area has changed, and in the meantime the areas have been refocused on agriculture. In the spatial conceptual plan of the city (2002), the Stanežiče area is again intended for urban settlement with the character of a town center. The development area of Stanežiče is one of the most important development areas in the city of Ljubljana where housing construction with accompanying activities could be directed. Due to its good transport connections, this development area also has potential for employment. Its area is approximately sixty-three hectares. The planned capacities of the new settlement of the competition tender were 2,500 to three thousand apartments, and one to two thousand jobs.

Fifteen competition solutions were submitted. The jury evaluated the competition reports based on the criteria specified in the tender documents:

1. Functional criteria: a) Functionality of the design; b) Concept of important programs; c) Provision of a high-quality living and working environment; and d) Functionality and safety of traffic arrangement.
2. Design criteria: a) Conformity of the design solution; b) Originality of the solution; and c) Criteria for the design of the terrain.
3. Other criteria: a) Economic eligibility criteria; b) Environmental criteria; c) Flexibility criteria; d) Technical criteria; and e) Quality of the solution in certain areas.

The jury awarded first prize to Marco Venturi and Lučka Ažman Momirski and their colleagues, and wrote the following in the final report [2]:

The proposal represents a special aspect of this competition. Unlike all of the other proposals, which anticipate building up the former gravel pit area with more or less urban patterns of building tissue, this solution deals with the emptiness created by digging out the terrain, which, over the years of exploitation, has attained the dimensions of an altered landscape image. The authors of the solution are not concerned with changing and disguising this fact, but with recognizing that the reality of the otherwise degraded landscape can be used in the ideology of the solution. The dilemma of evaluating the relationship between urban and rural is transformed into a synthesis in an original and clever way, whereby it is precisely this connection, the consistency between the two poles, that assumes the weight of the concept. In such a solution it is no longer possible to speak of architecture embedded in the landscape, not only of the landscape transformation of space, but of excess, a kind of "challenge" of the landscape at the expense of architecture and, vice versa, of the adaptation of architecture at the expense of the changed landscape image. Therefore, it is a modified urban landscape, which offers a new and completely original image of future settlement for our (Slovenian) region with thoughtful harmonization of the urban and rural.

The essence of this proposal is to preserve, present, and reuse the central void of the former gravel pit as a green valley, as common areas, as a complement to the square and the market. The envisaged building construction is therefore only located at the edges of the pit, in the southern part in a series of residential buildings ... leaning against the current slope, and in the northern part forming a linear settlement comprised of horseshoe-shaped residential buildings

along the new parallel roads. The spatial composition is completed by two clusters of high-rise buildings, each marking the entire area and at the same time marking the entrance to Ljubljana.



Figure 1. Large gravel pit in Stanežiče.

Due to the need to shape the soft edges of the deep central part, the residential architecture appears as terraced buildings that descend toward the bottom of the valley, and the greened roofs of these buildings adjoin the central part of the empty space with their edges. The apartments in the buildings excel in their good orientation and the opportunity for direct integration of the residential areas with the surrounding area. The requirement to design functional spaces for future settlement activities is solved in a completely original way. . . . A completely free pedestrian connection between the bottom of the newly formed valley and the edge of Klagenfurt Street (*Celovška cesta*) is made possible. According to the jury, the authors used strictly separated and meaningful traffic management, a well-thought-out phase construction that initially offers integration into the existing settlement, and different building typologies to create an original basis for further work.

A fresh, clearly expressed, and consistently implemented idea, an understanding of the value of empty space, a meaningful grouping of structures, and their multifaceted character and integration into the landscape are the special features that the commission assessed as the best and for which it awarded the proposal with first prize.

At the level of the city administration, there were considerable changes in 2006, and the implementation of the executive spatial plan and the project part of the solution has not yet been accomplished. During this time, the spatial and other plans in the city also changed. One of these is the Sustainable Urban Strategy of the City of Ljubljana [3], adopted at the thirteenth session of the City Council of the City of Ljubljana (January 25th, 2016).

The premise of the study is that the concepts presented within the framework of the selected solution for New Stanežiče still correspond to the goals set by the adopted Sustainable Urban Strategy of the City of Ljubljana, and that there are no substantive obstacles to implementing the selected solution.

2. Data and methodology

The strategic development goals of the City of Ljubljana seek to preserve the already recognized quality of life in the city and strengthen necessary development activities appropriate for current times. The City of Ljubljana is also aware of its responsibility as the most important urban center in the country, and at the same time its jurisdictions and capacities: it will provide the necessary infrastructure, including apartments in the rental sector, and carry out various development measures with regard to providing a healthy and safe living environment. Such an environment includes infrastructure for sports, recreation, and leisure activities. At the same time, it will also provide a strategic basis for applying the European Union's new urban policy, as carried out in the local urban communities implementing Integrated Territorial Investment (ITI) in agreement with the relevant state administration. The Sustainable Urban Strategy of the City of Ljubljana includes an implementation plan for other investments and projects contributing to the comprehensive city development approach. Priority projects and measures are those with a higher chance of implementation in the program period and are roughly divided into three sets (Human, Environment and Space, and Economy and Regional Development).

The study concentrates on those subsets that can be covered by the conceptual spatial solution, all of which are part of the first two sets. Within the set titled Human, ten subsets among thirteen were selected:

- Jobs, green jobs, employment of young people up to 29 years old (J);
- Health (H);
- Social security (SS);
- Education and training (ET);
- Education: youth and culture (YC);
- Housing (Hou);
- Culture (C);
- Cultural heritage, image of the city: renovation and regeneration (CH);
- Public spaces (PS); and
- Sports and leisure (SL).

Within the set titled Environment and Space, thirteen subsets among twenty-two were selected:

- Sustainable spatial development (SSD);
- Environmentally acceptable spatial development (ECSD);
- Air quality (AQ);
- Noise (N);
- Light pollution (LP);
- Natural heritage and biodiversity (NHB);
- Mitigation and adaptation to climate change (CC);
- Green areas (GA);
- Waters, water surfaces, and water management (W);
- Waste management (WM);
- Efficient use of energy and renewable energy (E);
- Sustainable mobility: compact city (SM-CC); and
- Sustainable mobility: region (SM-R).

The project solution described here, on the other hand, presented its arguments in accordance with the competition requirements in eight sections [4], of which the first seven are dealt with in this discussion:

- Settlement concept (Concept);

- Arrangement and interaction of activities (Activities);
- Urban design and concept of individual characteristic areas, a description of the separation of public and private places (Urban design);
- Landscape design and green settlement areas (Green areas);
- Traffic arrangement (Traffic);
- The typology of the building and the conceptual design of the housing arrangement in a particular type of building with the guidelines for the architectural design of individual types of building (Building typology); and
- Phase construction of the settlement, description of completion of each phase with a detailed description of the first phase (Phases).

For each set of defined priority goals, a matrix will be used to determine which of them also defines the first award-winning solution. The nonobvious relationships that exist between the entries on the table allow for research results: when a row and a column in a matrix intercept, this yields a cell that contains particular data that contribute to the overall interpretation potential of the matrix.

3. Results and discussion

According to the project description, various social groups live and work in the settlement of New Stanežiče. At the same time, programs are being developed to complement activities in the immediate and wider surroundings. The new settlement with the planned program offers leisure programs and houses centres for handicrafts and new forms of shopping centres.

Through cutaways joined by a city rail route, the projecting slopes of the eastern edge of the gravel pit are extended all the way to the edges of the main thoroughfare, Klagenfurt Street (*Celovška cesta*), creating an area for multi-storey business premises underneath. This allows one to walk unhindered between the floor of the newly designed valley and the edge of Klagenfurt Street (*Celovška cesta*). Another unique feature is the public open area along the city rail route, which ascends onto the business buildings' green roofs. Views of dominant natural features (Mount Saint Mary and the Kamnik Alps) and manmade features (St. James' Church in Stanežiče) are the main motif of the public space in the green valley of the new housing development.

The areas around the residential buildings are more private (e.g., with atriums next to terraced apartment blocks), even though many green and entirely public areas are planned. Instead of dividing the space into smaller pockets, the arrangement features a combination of green areas in the valley and small rivers that connect smaller green spaces with larger ones. It is important to preserve the cultural landscape (with division into plots; Figure 2) and to combine it with the landscape ambient and ecological qualities. A characteristic of the project is the creation of new green hills (i.e., houses) with slopes where people can walk from one area to another and thus move freely from one green field to another (Figure 3). The residential parts of the settlement (reflected in the typology of terraced houses), as well as the construction of a large basin in the recreation area, follow the contours of the terrain. Perpendicular to the green valley there is a golf course.

The transport system and its construction support the construction phases of the settlement. Great emphasis is placed on public pedestrian areas, which can be used by residents, children, and visitors to the area, as well as on cycling routes. Dividing various types of transport suggests transparent traffic routes; for example, to garages and delivery areas, for passenger transport for residents' needs, and for transport for access to leisure facilities. The use of public transport and the P&R system is highlighted.

A society that is fragmented requires a number of spatial solutions for individual social groups: single people, the elderly, young professionals, people that spend limited time in the settlement, single-parent families, and young families.



Figure 2. Plan of the new city center in Stanežiče

The typology of the buildings that we propose takes these different ways of living into account (Figure 4) in addition to also relying on an ecological design of the buildings and roofs. In the event of a change in the social requirements, which could also change the use or function of buildings, the planned buildings can be adapted to the changing programs.

The first phase of construction of the settlement is to integrate the settlement into the existing area. Construction is envisaged of a row of houses along the peripheral road, the scale of which is adapted to the existing typology of the peripheral residential settlements. The row of houses ends in terraced C-shaped apartment blocks. The tower blocks increase the density in the southern and northern parts of the settlement.

The second phase is the main construction phase for the new urban center and city streets. On one side, the facade is formed by the frontage of the terraced apartment blocks, with ground-level access to the green valley, and on the other side by structures that include service activities, such as a bank, a post office, and shops. The upper part of these structures is intended for housing.

The third phase completes the settlement in the northern and southern part and toward Klagenfurt Street (*Celovška cesta*). The manufacturing and service area is complemented by a health center with a pharmacy and housing for the elderly. A morphologically similar structure for leisure activities stands in the northern part.

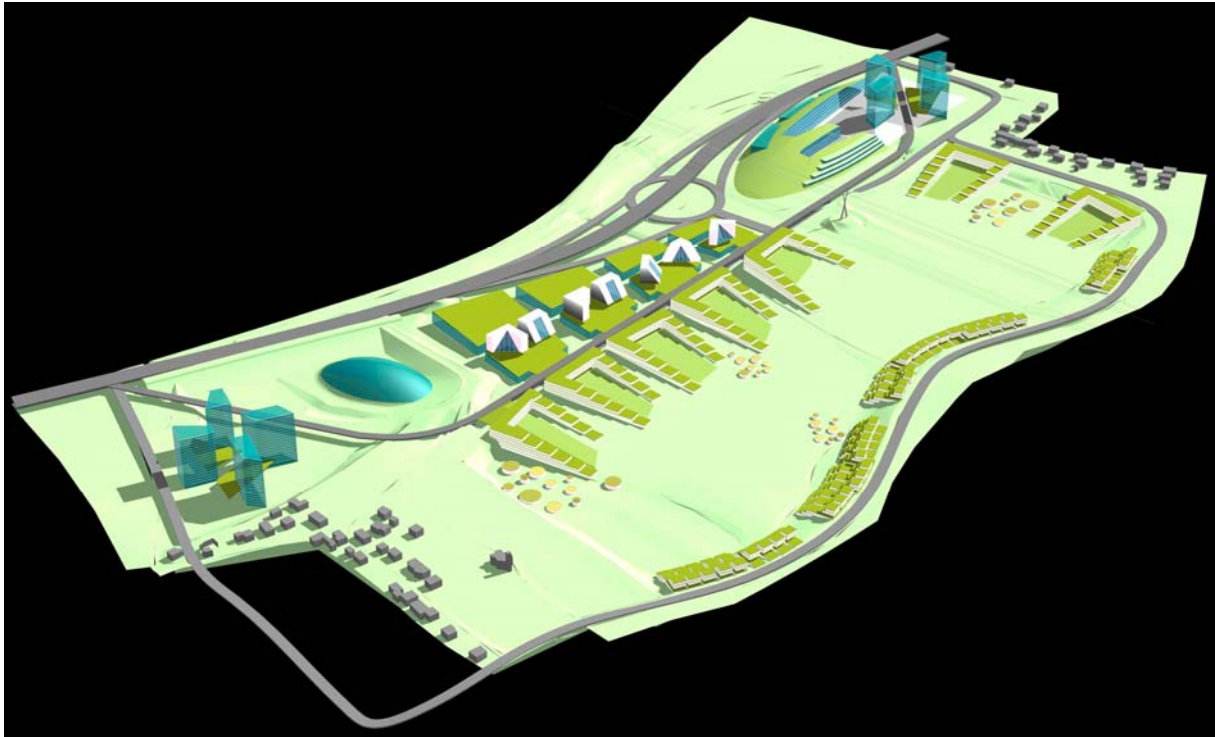


Figure 3. Three-dimensional view of the new city center



Figure 4. View of the new city center

Table 1. Matrix determining the relationship between ten chosen subsets of the set Human as part of the Sustainable Urban Strategy of the City of Ljubljana and the first seven competition requirements.

Competition requirements	Concept	Activities	Urban design	Green areas	Traffic	Building typology	Phases
Subsets of the set Human							
J							
H							
SS							
ET							
YC							
Hou							
C							
CH							
PS							
SL							

Table 2. List of the main waste operators in selected municipalities, depending on the type of waste generated by companies in carrying out their production or service activities and waste treatment.

Competition requirements	Concept	Activities	Urban design	Green areas	Traffic	Building typology	Phases
Subsets of the set Environment and Space							
SSD							
ECSD							
AQ							
N							
LP							
NHB							
CC							
GA							
W							
WM							
E							
SM-CC							
SM-R							

The matrix determining the relationship between ten chosen subsets of the set Human, which is part of the Sustainable Urban Strategy of the City of Ljubljana (Table 1), and the first seven competition requirements shows that among seventy cells forty-seven intercept between rows and columns, which means that the competition solution covers two-thirds of the possibilities given by the Sustainable Urban Strategy. The section Concept refers to all of the subsets given, the section Activities leaves out only the subset Cultural Heritage, and the section Phases only the subset Culture. The subset Housing is mentioned or referred to in all of the sections of the competition requirements, and the subset Public

Spaces and Sport and Leisure is not referred to in the section Building Typology, which leaves the room for further design of both typologies.

The matrix determining the relationship between thirteen chosen subsets of the set Environment and Space of the Sustainable Urban Strategy and the first seven competition requirements shows, that among ninety-two cells, fifty-eight intercept between rows and columns, which means that the competition solution covers a bit less than two-thirds of the possibilities given by the Sustainable Urban Strategy. The section Concept refers to eleven subsets given, not directly stressing the subset Mitigation and Adaptation to Climate Change (CC) and the subset Waste Management (WM). Similarly, in the section Urban Design there is only an indirect relationship with the subsets Waters, Water Surfaces, and Water Management (W) and Waste Management (WM). Two subsets are referred to in all of the sections of the competition requirements: Sustainable Spatial Development (SSD) and Green Areas (GA).

The fact that the concepts presented in the selected solution for New Stanežiče correspond to the goals set by the adopted Sustainable Urban Strategy of the City of Ljubljana can be confirmed by the results of the matrixes.

4. Conclusions

The strategic development goals of the City of Ljubljana seek to preserve the already recognized quality of life in the city and strengthen necessary development activities appropriate for modern times. The competition solution premises also sought to provide quality of urban life, strengthen development activities, and ensure social justice. The planned infrastructure for sports, recreation, and leisure activities, as well as the importance of the extensive green system, confirm that the project's premises are aligned with the contemporary sustainable urban policy. Moreover, it seems that the project's characteristics are even ahead of its time, which has hindered further steps in accomplishing it.

References

- [1] ZAPS. A public, open, conceptual (for the entire area), and project (for the first phase) architectural and urban design competition for New Stanežiče in Ljubljana.
https://www.zaps.si/index.php?m_id=natecaji_izvedeni&nat_id=87
- [2] ZAPS. Final jury report.
https://www.zaps.si/index.php?m_id=natecaji_izvedeni&nat_id=87
- [3] Sustainable Urban Strategy of the City of Ljubljana
<https://www.ljubljana.si/sl/moja-ljubljana/urbanizem/trajnostna-urbana-strategija-mol/>
- [4] M. Venturi, L. Ažman Momirski, "Competition concept for New Stanežiče" (in Slovenian).