RECORDING OF BUILDING DEVELOPMENT PATTERNS IN RURAL AREAS: CASE OF PODRAVSKA REGION

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www.iu-cg.org

Znanstvena revija, št. 2 / leto 2014
Univerza v Ljubljani
Fakulteta za arhitekturo in
Fakulteta za gradbeništvo in geodezijo
Ljubljana, 2014

Scientific journal, No. 2/2014
University of Ljubljana
Faculty of Architecture and
Faculty of Civil and Geodetic Engineering
Ljubljana, 2014

Naslov revije:

IGRA USTVARJALNOSTI
teorija in praksa urejanja prostora

Title of the Journal:

THE CREATIVITY GAME
Theory and Practice of Spatial Planning

Urednici: Alenka Fikfak, Alma Zavodnik Lamovšek

Editors: Alenka Fikfak, Alma Zavodnik Lamovšek

Uvodniki: Miha Dešman, Mojca Golobič,
Aleksander Saša Ostan, Thomas Dillinger, Matjaž Četina

Editorials: Miha Dešman, Mojca Golobič,
Aleksander Saša Ostan, Thomas Dillinger, Matjaž Četina

Oblikovanje in naslovnica: Gašper Mrak
Lektoriranje: Mojca Vilfan
Prevod: Mojca Vilfan
Klasifikacija: (UDK) Renata Stella Čop, (DOI) Teja Koler Povh

Design and title page: Gašper Mrak
Slovene text proofread by: Mojca Vilfan
Translation: Mojca Vilfan
Classification: (UDK) Renata Stella Čop, (DOI) Teja Koler Povh

Založila: Univerza v Ljubljani,
Fakulteta za arhitekturo in
Fakulteta za gradbeništvo in geodezijo

Published by: University of Ljubljana,
Faculty of Architecture and
Faculty of Civil and Geodetic Engineering

Spletna stran revije:
http://www.iu-cg.org/

Journal website:
http://www.iu-cg.org/

Spletna stran številke:
http://www.iu-cg.org/paper/2014/iu02.html

Link to this issue:
http://www.iu-cg.org/paper/2014/cg02.html

ISSN 2350-3637 (spletna revija)

ISSN 2350-3637 (Web Journal)

Univerza v Ljubljani Fakulteta za arhitekturo

Univerza v Ljubljani Fakulteta za gradbeništvo in geodezijo

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EVIDENTIRANJE VZORCEV POZIDAVE NA PODEŽELJU: primer Podravske regije

RECORDING OF BUILDING DEVELOPMENT PATTERNS IN RURAL AREAS: case of Podravska region

DOI: 10.15292/IU-CG.2014.02.044-053 ▮ UDK: 711.3 ▮ 1.02 Pregledni znanstveni članek / Scientific Article ▮ SUBMITTED: May 2014 / REVISED: June 2014 / PUBLISHED: October 2014

IZVLEČEK

Podeželski prostor, kot ga vidimo danes je splet različnih aktivnosti. Na eni strani zaznamo to kot spremembe, ki se kažejo v pogosto manj intenzivno obdelanih kmetijskih površinah oziroma v spremenjenih kulturah rabe prostora, na drugi strani pa v stalnem preoblikovanju podobe naših vaških naselij in v likovno-estetski preobrazbi grajene strukture (Fikfak, 2008). Tako lahko zaznamo tudi, da se je povezava med stanovanjsko hišo na podeželju in pripadajočim zemljiščem v zadnjih desetletjih razvrednotila z vidika kakovosti bivanja in funkcionalnih povezav tako znotraj objekta kot tudi v povezavi z zunanjimi površinami.

Glavni cilj raziskave je bilo evidentiranje obstoječih vzorcev pozidave v izbranih podeželskih naseljih in ugotavljanje povezanosti med stanovanjskim objektom in funkcionalnim zemljiščem tudi v odnosu do sosednjih objektov in zemljišč. Raziskovanje vzorcev pozidave na slovenskem podeželju je bilo opravljeno z aplikacijo na izbranem testnem primeru – v treh izbranih podeželskih naseljih Podravske regije. Metodologija raziskave je temeljila na sistematični izdelavi prikazov iz geografskega informacijskega sistema, geodetskih podlagah in na terenskem opazovanju ter fotografiranju pojavnosti treh različnih tipov gradnje (tradicionalna podeželska hiša, individualna tipska hiša in sodobna podeželska hiša). Evidentirani so bili obstoječi vzorci pozidave v izbranih naselij in opisani odnosi med posameznim zemljiščem in stanovanjskim objektom ter sosednjimi zemljišči in stanovanjskimi objekti.

KLJUČNE BESEDE

podeželska naselja, vzorci pozidave, funkcionalno zemljišče, stanovanjski objekt, Podravska regija

ABSTRACT

The rural areas of today involve a range of different activities. On the one hand, this is perceived as changes that are reflected in the frequent abandonment of utilised agricultural areas or in the changed land use, and, on the other hand, in the continuous transformation of the image of our villages, and the artistic and aesthetic transformation of the built form (Fikfak, 2008). We can see that the connection between the house in the countryside, and the land on which it stands, has been devalued in the last decades in terms of the quality of living and functional connections inside the building and with exterior areas.

The primary objective of the research was the recording of the existing patterns of development in selected rural settlements and to find the connection between the residential buildings and appertaining land, and, furthermore, the connection with adjacent structures and land. The research into development patterns in the Slovenian countryside was performed through the application on a case study, i.e. on three rural settlements of the Podravska Region (the region along the Drava River). The research methodology was based on a systematic elaboration of presentations from the geographic information system (GIS), surveying groundwork, field observations and photography of incidence of three different types of building (a traditional rural house, a standard detached house design and a contemporary rural house). The existing development patterns in the settlements were recorded and the relationships between the respective land plots and residential buildings, and the adjacent land and residential buildings, were described.

KEY-WORDS

rural settlements, patterns of building development, appertaining land, residential building, Podravska Region

1. INTRODUCTION

Extensive research has been conducted regarding the built environment in the countryside, the shape of residential structures, traditional homesteads, standard single-family buildings etc., while much less attention has been given to exterior areas, the relationship between the house shape/façade and the residential parts of the house, the land on which it stands, and the relationship with other buildings on the appertaining land, and with adjacent buildings and land/plots. In terms of quality of living, the link between the building, and the land on which it stands (and adjacent buildings and land), is important. In the past, not enough attention was paid to the issue. However, In the recent decades, much more consideration has been given to appertaining land, as we have recognised the importance of an organised environment to the quality of life. The connection of open spaces with the living space of a house has been gaining in importance.

In terms of rural planning today, the underlying values have been changing, pursuing the goals of sustainable development. This includes the raising of awareness on conservation and protection of the physical environment, rational use of rural areas, increase in the quality of the living environment and a healthy environment for rural residents. Sustainable development ensures a slowdown in the use of goods, while rural development follows the goals of ecology, including economic, social and environmental sustainability. In rural areas, sustainable development is used to encourage the conservation of the traditional settlement structure and the protection of the existing landscape and settlement identity of the area, hence preventing the deterioration of rural settlements and the decline of life in the countryside.

The purpose of the research is the recording of the existing building development patterns in three selected rural settlements of the Podravska Region, and the identification of improved connectivity of the residential building (housing) with other parts of the land on which it stands. The research into the planning of external areas appertaining to the residential rural buildings could provide insight into several inseparably connected research subject matters, which are directly or indirectly linked to the issues of rural areas, dwelling culture, sustainable development and management of external (including green) areas and rural architecture.

2. EXPLORING THE RELATION BETWEEN THE RURAL HOUSE AND THE APPERTAINING LAND FROM THE 20TH CENTURY ONWARDS

2.1 Relation between the rural house and appertaining land according to the type of building

In the past, construction and siting of residential buildings in rural areas, particularly of standard buildings in the 1970–1990 period, received much less attention than urban developments. This was a period of major growth and new constructions in Slovenia, including in the countryside. The connection between the country house and its appertaining land has been undermined in terms of living quality and functional connections within both the building itself and its exterior areas. The introduction of the standard single-family detached house into the rural landscape changed not only the siting of structures, in the narrow and broader sense, but it was also followed by the disappearance of the traditional rural culture, dwelling culture and landscape features. The protection of fertile soil, self-supply needs and the overall ecological protection of environmental complexity necessitate that more attention is focused on the organisation of contemporary rural developments (Prosen, 1993; Fister et al., 1993). However, extra-urban areas have been neglected and urban development schemes were indiscriminately implemented in rural areas as well.

The research of the evolution of the appertaining land of the residential building was focused on the analysis of the elements connecting the interiors with appertaining land and buildings in the Podravska Region from the 20th century onwards (based on the analysis of rural residential building typology and morphology). In the classification of historical development of residential buildings in Slovenian rural areas, I refer to Fikfak (2008, p. 28): *»The biggest change in rural areas happened after 1970 when under the influence of external factors (social policy, population migrations, industrialisation and degradation etc.) everywhere in Slovenia, mass construction of single-family detached houses (i.e. following standard plans) began. The housing problems were solved in a seemingly simple way: with the prevalence of the standard single-family house, i.e. the house for every Slovene ... Indeed, socialism was beginning to recede. At the same time, Slovenia declared its independence from Yugoslavia and adhered to the principles of internal democratization. In the plebiscite of December 1991, a uniform view regarding Slovenian sovereignty and future was achieved. This was the beginning of independence of the new state, which had yet to be fully won ...«* Hence, 1990 is seen as the transition to the era of contemporary residential building. In the period, the building code was consistently enforced in extra-urban areas as well, and a major change in residential construction was brought about by the Housing Act of 1991 (ibid.). In reference to the aforementioned definitions, the evolution of housing typology in Slovenian rural areas was divided into three periods:

- traditional rural building (according to the research definitions: between 1900 and 1970),
- standard detached building (from 1970 to 1990),
- contemporary rural building (from 1990 onwards).

We found that, historically, the traditional rural Slovenian house was never a detached, stand-alone building, but always part of a whole, which included accessory buildings that were part of a discrete economic and housing whole (residential house, farm buildings, woodsheds, gardens, orchards etc.) (ibid.). For the traditional rural Slovenian house, the builders considered the characteristics of the area and the relevant regulations, which is why the land with the traditional rural house was exploited well. The connection between the building and the relevant area was optimised from both the housing and economic aspects. According to Kregar (1946), in the organisation of spaces the influence of the landscape, economy and the material is felt.

These principles are not adhered to by the so-called standard single-family houses, which were built without the symbiosis with the environment and without the knowledge of their future users. As pointed out by Fikfak (2008), after 1970 the rural residential house was the result of many influences; on the one hand, it was inspired by the suburban single-family villa with balconies, fences and staircases, and, on the other hand, it was based on the use of simple, easily manageable technology that allowed for self--build housing. The elaboration of standardised housing plans was based on general principles, irrespective of the location and its distinctive features. The structure, shape and site selection and placement were selected with no consideration of the traditional formats.

In reference to the standardised type of building, which was, indeed, transferred from the urban to the rural areas, the residential buildings were positioned in the middle of the land/plot, with no space left for ancillary and farm buildings. The residential gardens, or courtyards in the strict sense of the word, were missing or they had a very low practical use. The use of space was irrational and unfunctional. The relationship to open spaces was different than in traditional building design, as the outside areas were not defined. The standard detached house did not consider or preserve the characteristics and regulations of the area in which it was situated. The access to the residential building was located in the middle of the plot, thus dividing the plot into two separate parts. Hence, the typical standard building was characterised by irrational land use, with houses situated in the middle of the plots, making a functional use of space difficult, if not impossible. In the standardised rural building and placement of the house, not enough attention was given to the integration of the building and its land plot. The potential offered by the plot/appertaining land was underexploited, which is still the case today. Regarding the quality of living, the integration of the house and the residential garden is of high importance; hence, the development of the living environment is significant. This is not only a matter of shape and siting of the residential structure, but also the consequence of the inappropriate layout (plan view/house design), which is the fundamental mistake in the building of a standard house. As Vatovec (1989) points out, the living areas of the standardised building are mostly placed on the first floor, thus preventing an uninterrupted transition from the living areas to the appertaining land. Hence, the direct contact with the land is disrupted. The land loses its important function of a living space. The transitions to the land/plot through a terrace or stairs devalue the usefulness of land, while the living part of the land/plot remains under-designed and is hardly ever used. The same level of the plot, i.e. the appertaining land, and the living areas in the house provides the most appropriate connection between the house and land, frequent use of appertaining land, thus justifying its existence.

The connection between the rural house and its appertaining land has been somewhat improved by the contemporary standardised building, but functionally it is still not optimal. Nowadays, the organised environment is getting increased attention, since it affects the quality of live and thus provides the cultural and aesthetic comfort of living. The connection between open spaces and structures is gaining in importance (relationship between exteriors and interiors). It is of crucial importance that exteriors and interiors intertwine functionally and programmatically, making the optimum use of the appertaining land possible in all seasons. On this basis, the research will focus on the understanding of possible connections between the residential building and land, and the site selection and placement of the buildings in a broader sense [general evaluation based on land use: intimate, private, social and public space; »the role of personal space«, definitions by Mlinar (1994) and Rapoport (1991)].

2.2 Connection between the rural house and its appertaining land in view of the layout of buildings and the shape of land/plot

Based on the building typology, we can visually assess the changing of components of our rural settlements. The mix of the whole/part relationship and the assembly of these basic »cells« into ever new combinations is the evolution process of changing the settlement patterns in the settlement system (Fikfak, 2008). However, the basic residential unit does not include only the »residential house«, but a set of visible and »invisible« ways between the individual elements shaping the appearance of the individual functional unit, as well as the composability of the different units into a formation called the rural settlement.

The main starting point in the classification and definition of the types refers to the type of development and the arrangement of buildings into the basic living unit (Drozg, 1995):

- nucleated (clustered) arrangement of buildings,
- linear arrangement of buildings.

Here, we have to consider many external and internal influences, such as site selection and placement (morphology, relief, vegetation ...), relationship to public space (roads, squares ...), relationship to the open space of a homestead (courtyards), relationship between the homestead and agricultural land (hinterland) and also the relationship between the structures forming the homestead or house unit (detached or connected structures). The analysis of communication relationships (and the breakdown to different land uses at the level of the basic living unit) represents the basis, where each unit is evaluated separately and as a unique experience of the experiential space (Fikfak, 2008). In fact, these distinctive features create a unique format of each residential house, farm or the basic living unit. This is also influenced by the shape of the land on which the residential building stands as an independent element or in a group with ancillary structures (parts of homestead).

The principle of proper development of both building and land, shown as the relationship between the individual elements, is reflected in:

- spiritual values,
- way and culture of life,
- connection of social and economic functions (separation of use),
- technology of economy,
- social institutions that take on the role of regulating and organising the life of a society (legal, ownership, production, financial system) etc.

Another important aspect of the connection between the residential house and land is the shape of the land on which the building is situated. The basis of cropland distribution in Slovenia was set by Svetozar Ilešič in the 1950s (1950). Mušič (1947) and later Durjava (1986) connected the system of cropland distribution with architecture and morphology of farm buildings. These studies clearly show the connection between the shape of the agricultural home and the plot pattern, that is, as a rule, transferred from the fields to the settlement. Fister (1993) also stressed that plot shape and positioning are among the important criteria in the design of settlements. Gabrijelčič (1985; Gabrijelčič and Fikfak, 2002) pointed out to the dependence of plot shapes, landscape typology in Slovenia and settlement.

3. WORKING METHOD

The research into the patterns of appertaining land in relation to residential building development in Slovenian rural areas from the 20th century onwards was performed through the application on a test case study from the Slovenian countryside, i.e. on three rural settlements of the Podravska Region. There were two major factors that affected the structure of built-up areas in the past (before World War II): the need to respond to the natural conditions and terrain configuration. Having in mind the importance of terrain configuration in the siting of buildings, in the narrow and broader sense, we included the settlements that were situated in lowlands (Lovrenc na Dravskem polju), on the slopes (Vitomarci) and on a hilltop (Ločki Vrh) (Figure 1).

The analytical part of the research methodology was based on repeated field observations and photography of natural geographical, cultural and spatial features of the Podravska Region and the selected settlements, and a systematic elaboration of presentations from the geographic information system, surveying groundwork and field observations, and photography of incidence of three types of building (a traditional rural house, a standard detached house design and a contemporary rural house). The recording of the existing development patterns in the selected settlements in the initial stage was performed using a GIS map. We systematically reviewed the existing patterns of detached housing construction and intended use of buildings on the plot (residential buildings, business facility and non-business facility) and different combinations of buildings. For example, we recorded the combination of a detached residential building with a business facility and another non-business structure (garage, canopy) and two detached residential buildings on a plot. The shapes of plots were adopted from survey maps and plans and divided into three groups, i.e. branched plot, elongated plot and regularly shaped plot. In the next step of the research, on the basis of the GIS maps, we recorded the location of the building on the land plot relevant to the road (beginning, middle or end of the plot). When recording development patterns using the geographical information system, we also looked at the state or organisation of adjacent plots. We determined the state of development and the presence of agricultural land on adjacent land plots.

In the studying and recording of existing development patterns, repeated field observations and photography were of crucial importance. Field observations were important in the recording of existing types of buildings.

Figure 1: Sites of selected rural settlements in the Podravska Region.

In the first stage, we defined the intended use of the structure (residential, business, non-business), while in the second stage the type of building was defined. In most cases it was difficult to determine the type of building only on the basis of the geographic information system or survey maps and plans. In the case of lowlands, it was easier to identify traditional buildings, since they had a typically elongated shape and a typical layout of ancillary structures (residential structure by the side of the road, with farm buildings and agricultural areas in the rear). On the slopes and on the hilltop, the layout was somewhat different, i.e. it adjusted to the local topography.

The recorded patterns were drawn and systematically combined in a table; each plot with its buildings was represented separately and in a group with adjacent plots and buildings, including the description of relationships between the plots and residential buildings, and adjacent plots and residential buildings. This part of the research was presented in section 3.3 Development patterns in selected settlements.

3.1 Spatial inventory in the Podravska Region

»The Podravska Region is characterised by continental climate. The two basic landforms are extensive plains and hills. In lowlands, the landscape pattern involves distinctly open and broad field areas with a distinctive ribbon land allotment. This is clearly noticeable wherever the original field pattern was not changed by the contemporary land restructuring. The settlement in the lowlands is in the form of agglomerations, while in hilly areas it stretches along the ridge.« (Marušič, 1996, p. 37)

Despite the fact that there is an abundance of natural and cultural heritage in the Podravska Region, we must acknowledge that the region is losing its cultural heritage, cultivated landscape, and regional identity, thus becoming less identifiable. We are referring to the deterioration and abandonment of old rural settlements (settlements in Slovenske gorice) and buildings (e.g. the *cimprana hiša*, a traditional Pannonian house) which

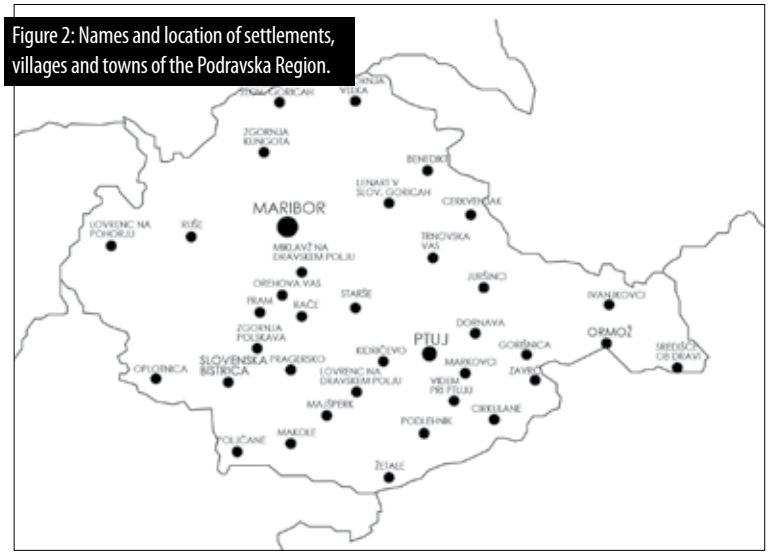


Figure 2: Names and location of settlements, villages and towns of the Podravska Region.

should be renovated to preserve the traditional rural cultural heritage (Figure 2). To improve the current state, in the future rational and prudent use of natural resources should be promoted in the settlement area of the Podravska Region, and the population (Figure 3) should be encouraged to preserve and develop cultural diversity. Also, the preservation of tradition should not be forgotten. All of this would promote a greater visibility of the Podravska Region. The degraded areas of the Podravska Region could be rehabilitated by shifting new developments to the already degraded areas, while the existing settlements should be developed or rehabilitated using the principle of dispersed concentration with densification into several nucleated settlements or agglomerations, taking into consideration the architectural and landscape characteristics. According to Fister (1993, p. 202),

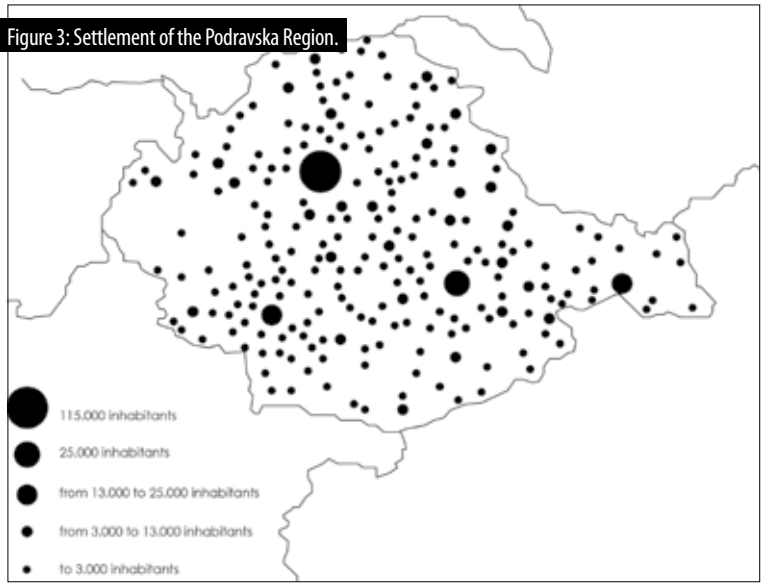


Figure 3: Settlement of the Podravska Region.

»*the distinct relationship between natural characteristics and land use and the format of layout and design of architectural identity is the criterion underlying any future developments*«.

3.2 Spatial inventory in the selected settlements

As already mentioned, the period after World War II in the Slovenian rural areas was characterised by the progressively decreasing consideration of the natural factors and local characteristics, which is why the problem of degradation of rural areas and cultivated landscape has grown. These buildings are inappropriately sited and designed, residential buildings untypical for the rural landscape, with ill-proportioned volumes, improper orientation, improper façade colour and installations, and unsuitable architectural elements. This leads to the disappearance of the classical rural culture, living culture and the loss of identity of traditional settlements. The problem of rural areas of the selected settlements is reflected not only in built-up areas, but also in green areas, which are extremely important for a quality living environment. This problem has not received enough attention, as we can see that in the settlements and on the fringes of settlements there are not many green areas for leisure activities, as an expression of rural aesthetics. This is, indeed, not understandable in the view of increasing non-agricultural rural population who have more leisure time than agricultural population; the way to improve the quality of living is to increase common green areas. Green areas have many positive effects on rural areas and the quality of living. By preserving the existing green areas and through proper placement and design of new ones, we can create a better living environment and improve the image of the area. According to Prosen (1993), the planting along the roads and squares helps to contextualise and alleviate the density of built-up areas.

Lovrenc na Dravskem polju

Lovrenc na Dravskem polju is a rural settlement in the lowlands of the Podravska Region, lying in the south of the plain of Dravsko polje; it is an example of good practice of a rural agglomeration. The settlement is characterised by a continuous, nucleated roadside development (church, store, catering facility, post office, organised sports grounds with a sports facility) (Figure 4). In the past, the settlement was distinctly agricultural. Today, the number of people in agriculture is declining, while a growing number of population

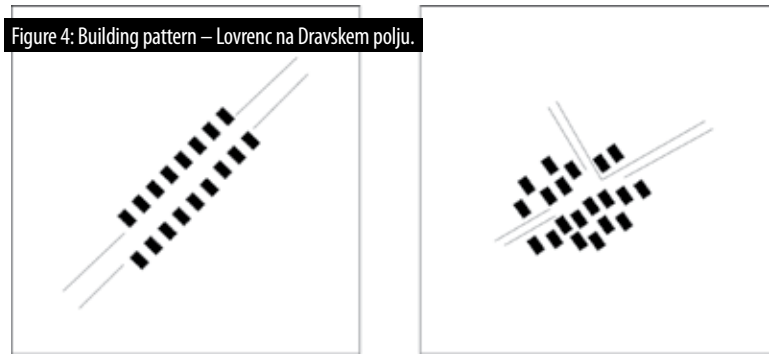


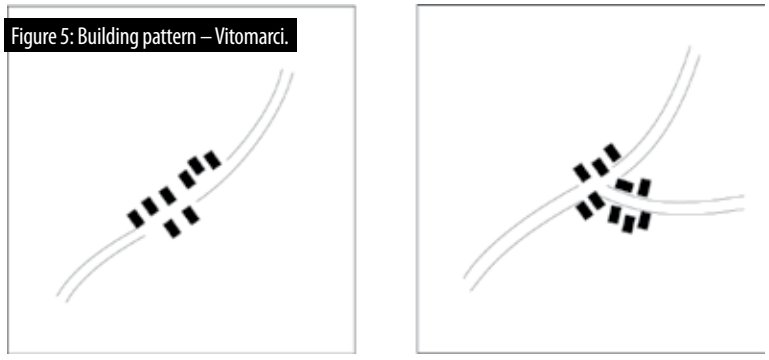
Figure 4: Building pattern – Lovrenc na Dravskem polju.

is not engaged in agriculture; hence, the settlement can be characterised as non-agricultural. A major part of the settlement is represented by the standard type of building (on the plot there is a residential building with no outbuildings), whose structure, shape and site selection is not part of the traditional format. There is a distinct trend of disappearance of traditional development patterns and landscape features (improper choice of installations, vivid colours of the façade, improper materials and building orientation). To a large degree, the area is introduced by urban settlement patterns.

Vitomarci

The rural settlement of Vitomarci is a distinctly dispersed and nucleated settlement located on the slopes (church, post office, store, catering facility) (Figure 5). Vitomarci are a case in point of development that responded to the terrain configuration. Along with topographical features, the building structure was influenced by the proximity of the flood-prone Pesnica river, so the dwellings were moved to higher elevations. Along with the introduction of non-traditional buildings, vivid colours, improper installations and materials, there is another major problem regarding the preservation of traditional rural development patterns in Vitomarci, i.e. the conversion and adaptation of the existing traditional buildings that are restored without consideration of characteristic traditional forms. This also means the disappearance of the classical rural culture, dwelling culture and the loss of identity of the traditional settlement.

Figure 5: Building pattern – Vitomarci.



Ločki Vrh

The rural settlement of Ločki Vrh is located in the northern hills of the Pesnica Valley. The development in the area of the settlement surrounded by forest is mostly found along the ridgeline (roadside development), while elsewhere it is distinctly disperse (Figure 6). The infrastructural connectivity is fairly unregulated and nonfunctional. The individual housing structures remote from the main connecting roads are abandoned, while agricultural land is set aside or overgrown, since the settlement is only developed in the proximity of communication routes. The settlement is adversely affected by the introduction of urban types of building and incorrect approaches to the siting and design of structures. Extensions and restorations of the existing traditional structures are being made. There are many traditional residential buildings (e.g. *cimprana hiša,* the typical Pannonian house), which are all deteriorating. To preserve cultural heritage and spatial identity, it is necessary to restore the buildings that can still be protected from deterioration. We can still recognise and detect traditional patterns and forms that we can use as the basis and inspiration for the design (shape, volume, materials, colours, site orientation etc.). As it is, it is only a question of time when the traditional image will disappear completely.

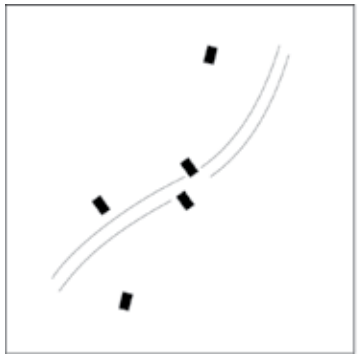
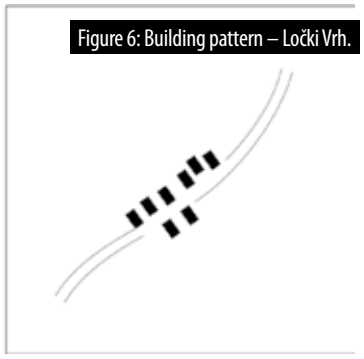


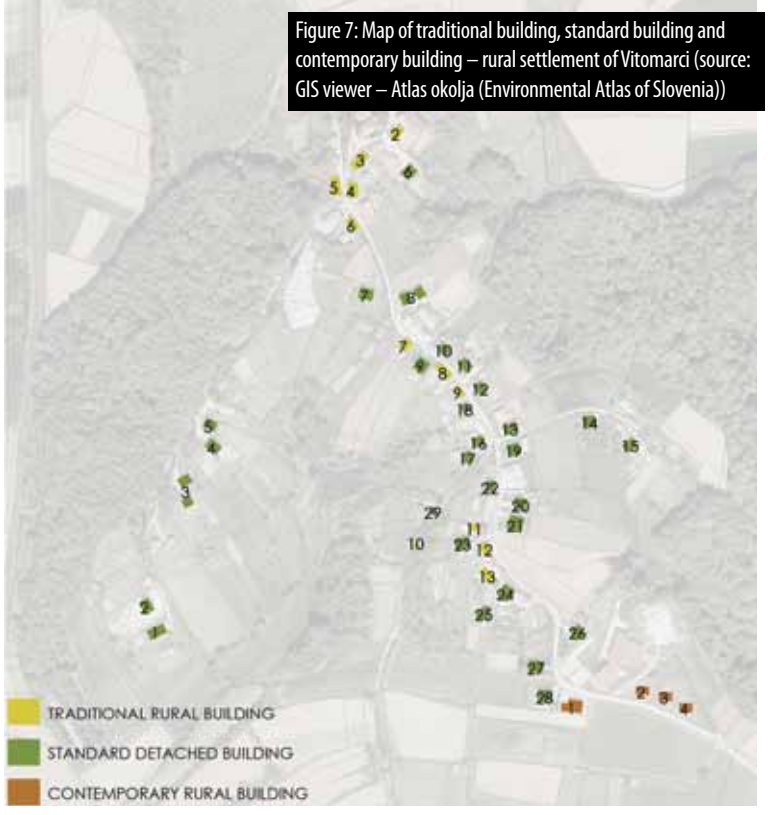
Figure 6: Building pattern – Ločki Vrh.



3.3 Development patterns in selected settlements

The existing building patterns in each selected settlement were recorded and the relationships between the individual plots, residential buildings, and adjacent plots and residential buildings were described. Field obser-

Figure 7: Map of traditional building, standard building and contemporary building – rural settlement of Vitomarci (source: GIS viewer – Atlas okolja (Environmental Atlas of Slovenia))



vations were of crucial importance when determining the type of building and the intended use of the ancillary buildings (business, non-business). Based on the recording methodology, the list of patterns of the existing developments for the case of the rural settlement of Vitomarci (Table 1), for three different types of building, is given below (Figure 7). The same research methodology was applied to the settlements Lovrenc na Dravskem polju and Ločki Vrh.

In the selected settlements, there are no contemporary rural buildings that would lean on traditional patterns, shapes, local distinctive features and properties and native building materials. There are cases of contemporary standard building, which, however, is universal for all regions in Slovenia. As mentioned before, this type of building is not preferred from the aspects of spatial identity, landscape features, classical rural culture and dwelling culture. We need to create a contemporary type of building that will consider the traditional patterns and shapes, and which will be designed in line with the requirements of contemporary living, i.e. agricultural population on the one side, and non-agricultural rural population on the other side. Traditional formats should be reinvented and given a new function, which would adapt to the needs of the modern man in the countryside. The functional design of the traditional building for agricultural population can be significantly

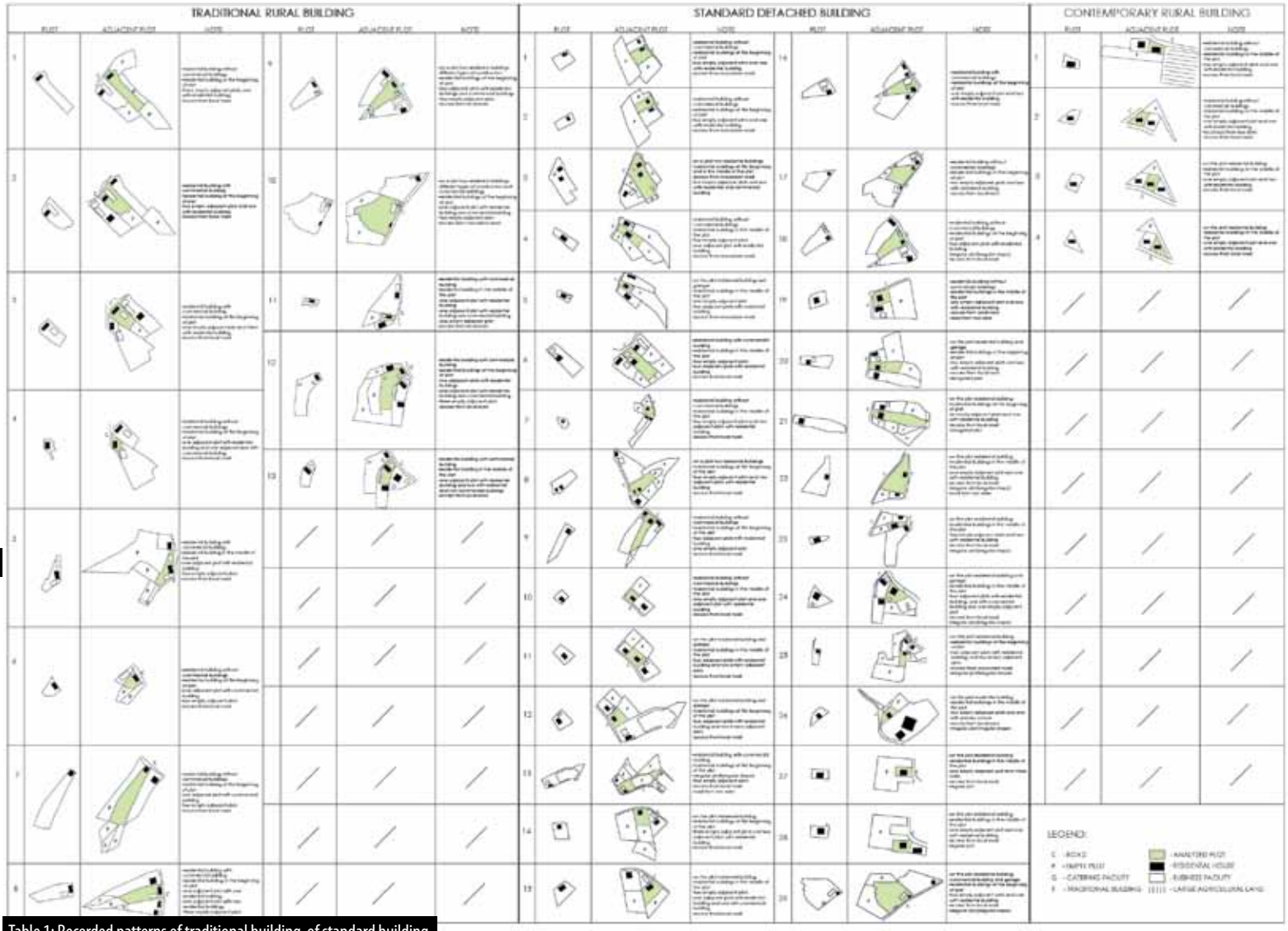


Table 1: Recorded patterns of traditional building, of standard building and of contemporary building in the rural settlement of Vitomarci.

different that the one for non-agricultural rural population. With agricultural population, the housing requirements are closely connected to economic activity, while the non-agricultural population primarily needs to satisfy its accommodation needs. In both cases, the form of the contemporary rural building is the same, while it differs in the functional layout of spaces and outbuildings and in the connection between the house and the land/plot.

As early as in the design stage, the designer and the builder should have in mind the connection between the house and its appertaining land, in order to achieve a useful and functional connectivity, i.e. a functionally uniform area. According to Ogrin (in: Vatovec, 1986, p. 4):»*If we do not take advantage of extending our living environment from the inside of building to the outside/ garden, the main quality potential of living is lost and the detached house loses its social significance. If the detached house fails to enable the diversity, layers and the richness of forms of living, it cannot justify the presence of land, which is often irrationally exploited, nor can it justify the relatively high costs of building and maintenance*«.

4. RESULTS

Finally, we provide the general observations based on the existing research into the building patterns in the rural areas of the Podravska Region for three selected settlements. In the first part of the research we focused on the problem of connection of the residential building with the appertaining land, and the relationship with outbuildings on the appertaining land, as well as with adjacent buildings and land/plots. In the selected rural settlement standard building prevails, which is universally present in all Slovenian regions; however, this type of building does not respond to local particularities and features (traditional patterns, native building materials), furthermore, there are no contemporary rural buildings in the selected settlement, but rather the type of building can be defined as contemporary standard building. Field observations in the selected settlement showed that there is a decline in the number of agricultural population, and a rise in non-agricultural population, which is reflected in the organisation and intended use of the buildings on the land, as well as in the connection with adjacent buildings and plots.

Based on the recording and systematic plotting of the existing development patterns, the results were elaborated in tables, and then the patterns were systematically arranged in categories/groups related to:

- siting or location of the building on the land (beginning, middle or end of the plot) (Table 2),
- shape of the plot (regularly shaped plot, elongated plot, branched plot) (Table 3),
- type of intended use of the buildings on the plot (residential building with a (non-)business facility, other outbuildings ...) (Table 4).

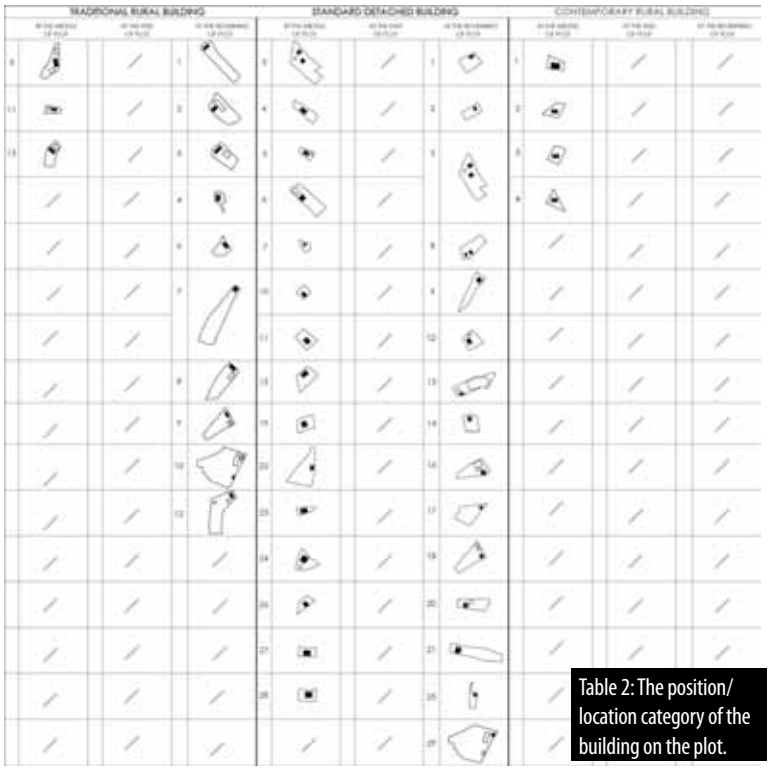


Table 2: The position/ location category of the building on the plot.

Table 3: The shape of plot category.

Table 4: The type/intended use category of the buildings on the plot.

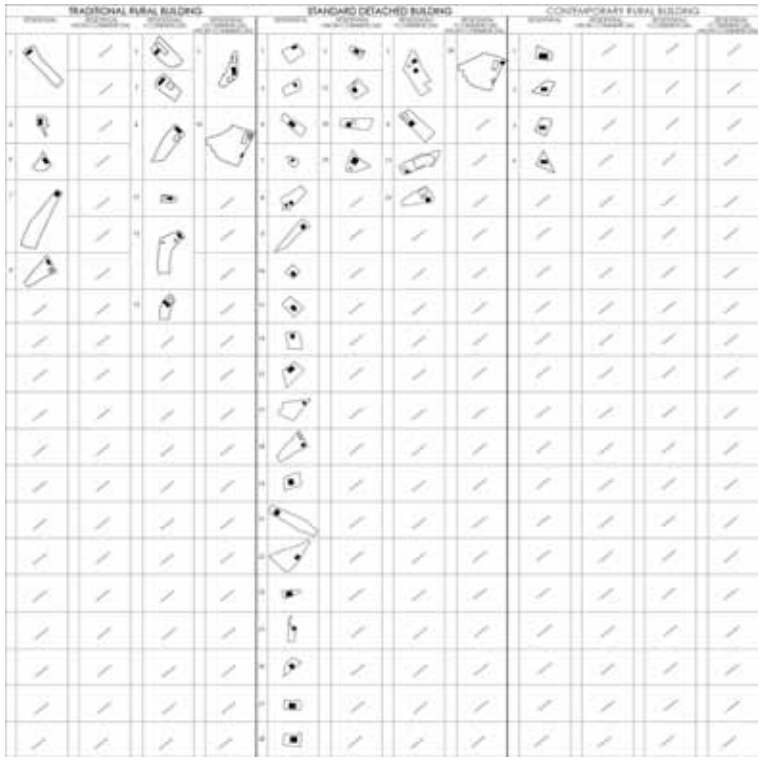


Table 6: Narrowed selection of standard building patterns for the settlement of Vitomarci.

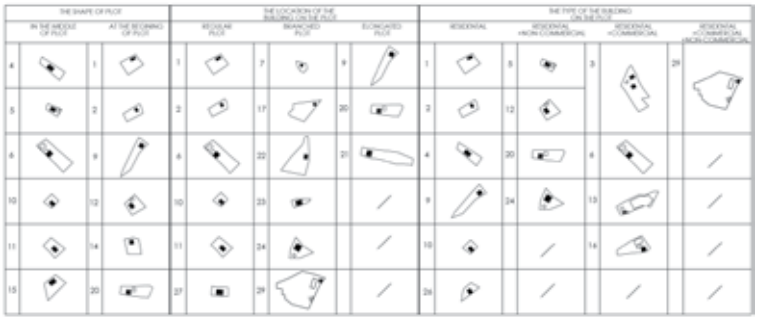
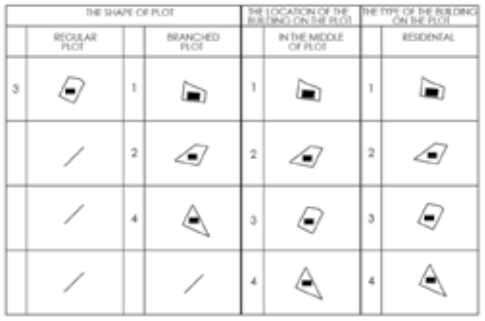
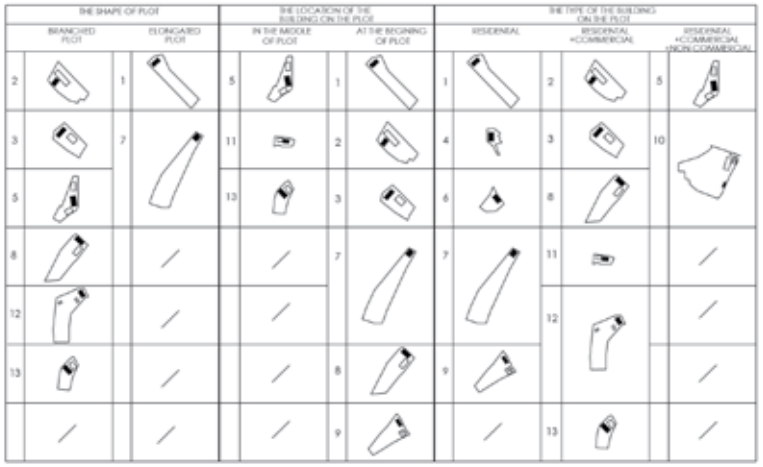


Table 7: Narrowed selection of contemporary building patterns for the settlement of Vitomarci.



Based on the recorded patterns and considering the different factors (natural geographical factors, shape of plot, intended use of buildings, type of building, siting of building) that affect the integration of the residential building with the appertaining land, we narrowed down the patterns to three types of buildings for the settlements in question (Tables 5, 6, 7). We considered both agricultural and non-agricultural population and their living requirements. The different housing requirements of rural population affect the functional layout of interiors of the residential building, the design and layout of external areas and ancillary structures, hence influencing the integration with the residential building.

Table 5: Narrowed selection of traditional building patterns for the settlement of Vitomarci.



The results presented here are a starting point for further research into the connection between the residential structure and the appertaining land.

5. CONCLUSIONS

The aim of the study was to record the existing patterns of building development in three selected rural settlements of the Podravska Region and to establish the possibilities of a better integration of residential, i.e. accommodation, structures with other parts of appertaining land.

Based on these results, in our future research we will try to determine the effect of size and shape of land plots, siting, intended purpose of ancillary structures, access, vegetation, layout of the building, access from the building to the land, roof pitch and floors, relation between the residential rural building and appertaining land, and with ancillary and adjacent buildings and land/plots. The acquired data will be used for the analysis of connectivity between the building and appertaining land, i.e. the relationship between the rural house and appertaining land in individual building types.

Further studies should focus on the possibility of defining minimum plot areas of a contemporary residential house in the countryside of the Podravska Region needed for quality housing, and on the elaboration of a proposal of a contemporary design approach to the planning of external areas and construction of contemporary detached residential houses in the area under question. The improved connectivity between the buildings and the area would help to optimise the exploitation of the appertaining land in all seasons, while also provide quality cultural and aesthetic comfort. The research into the planning of external areas appertaining to the residential rural buildings provides insight into several connected research subject matters, which are directly or indirectly linked to the issues of rural areas, dwelling culture, sustainable development and management of external (including green) areas and rural architecture. The studying of these connections helps towards a comprehensive understanding of the residential house/land/appertaining land relationship and the influence of the relationships between the individual physical and man-made elements, which help to create the »living cell«, the basic unit, i.e. the building block of rural areas in Slovenia.

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