PROCEDURES, METHODS AND MODELS OF INDIVIDUALIZATION OF MULTISTORY AND APARTMENT HOUSES URBAN STRUCTURE
Case study - Serbia and Montenegro

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Abstract

Serbia is now in the process of essential changes, trying to address the renewal of towns and settlements in accordance with European tendencies and sustainable development. The inherited situation of the former period is complicated in ownership solution terms, including ownership transformation process and maintenance of the existing residential fund – primarily in multi-story, more-family urban facilities built in the socialist period. On the other side, in the transition period – that our country is going through right now, we are to change to market economy, accepting its rules, uncertainty and mechanisms required to establish the balance between supply and demand. Market entails introduction of property relations at each space level and establishment of certain relations between parts and a whole. The work discusses possible responses of the architectural/urban profession to market demand challenges, in terms of searching for new procedures, methods and models, which could answer to plural requests of possession/property relations in the space. Residential assemblies are conceived as complex and their elements are inter-linked by qualitative/valuable relations; they are not simple scores of spatial units belonging to individual owners.

The research methodology develops in several steps. The first part defines the problem and studies possible models of ownership transformations. The second defines individualization methods and models through several methodological steps: decomposition of multi-story residential building assembly, re-affirmation of original family house values, redefinition of possession/property relation individualization degree, de-aggregation of individual and pre-structuring spatial assemblies. The last step comprises testing of procedures, methods and models on concrete examples – multi-story assembly types and conclusion discussions.
0. INTRODUCTION

Serbia is currently in the transition period, and the transition to market economy, which establishes a balance between supply and demand, makes the market uncertain and results in the introduction of property relations on all spatial levels. Such introduction of property relations causes (de-) aggregation of structures to their basic elements conditioned with property relations, at the same time changing their inter-relations.

The question is «what is more important (older) – a part or the whole», i.e. do we get the whole by multiplying parts, or we get parts by dividing the whole. Regardless to attitude taken, the decisive factors are relations and mechanisms established (created, lasting and changing) between the parts (including their inter-relations) and the whole. [1]

Architects and city-planners should react, timely and adequately, to such changes in societies and offer adequate answers to market requirements. At the same time, they should renounce usual canons and turn its action to the quest for new procedures, methods and models that should accommodate all the plural requirements of different property relations in the space.

In residential field, all those changes act in the quality-value plane changing the character of mechanism and the direction, i.e. course of relations, which results in a clearer aggregation of structures to parts (according to property relations) and in the creation of the whole as a complex urban structure made of parts with different owners. The whole is not a simple sum of its parts, but a complex set ruled by plural relations.

Basicall, the problem of having such property relations in once socially-owned residential fund (multistory residential buildings in most cases) is reduced to the relation between individual and collective in a residential block, between recognizable parts, separate entities of individual owners in the space and the total spatial-physical and functional-technological urban whole.

1. A CHAIN OF PROGRAM - SUBSTANTIAL OWNERSHIP TRANSFORMATION IN THE RESIDENTIAL FIELD (defining the problems and searching for solutions)

Ownership transformation process has three parallel cycles that occur at the same time:
- general-global cycle of market acting
- «collectivization» cycle – getting individual residential objects united into a collective building
- «re-affirmation» cycle – course of re-affirmation of urban individual houses.

1.1. Residential ownership transformation

This transformation has a clear course and takes the following steps:

I step – in the transition period, residential structures inherited from the period of socialism under the influence of the market become goods with certain price (purpose, consumption, location, renting ...);

II step – when such residential structures have become goods they have to have their owners, and this requires privatization of existing and all future residential buildings; [2]

III step – property relations introduce two types of complex sets:
  - a set of a big number of owners in the same area, and
  - a set of different forms of property rights on residential area;

IV step – every owner of residential area has the right to:
  - have its property determined, both horizontally and vertically
  - have the identity of hi/her property

V step – a residential structure, in order to satisfy requirements of different owners, has to:
  - grow into a complex set of a large number of sub-sets, and
be of pluralistic form – to include larger number of different structures;
VI step – it is necessary to ensure individuality to each part of the structure, which has to be at the same time independent and complete and co-operative with all other parts and with the whole.

1.2. Collectivization cycle – course of getting houses united into a building

The process of individualization [3] is basically inseparable from and constantly intermingled with the process of collectivization. They merge with each other, complement each other and inter-change in the course of history, especially on the level of activity separation in the space.

Globally today, the highest level of collectivization [4] has been achieved in residential field. The process of intense collectivization in Europe started in 1920s and was extremely strong in all ex-communist countries after the II World War. The profession was given a task: to have a large number of people economically and functionally placed in joint buildings. According to Le Corbusier [5] the collectivization process in a physical structure has taken several directions: Vertical growth, overall house dimensions growth, reduction of the terrain coverage, increase of inhabitants concentration, etc.

The next stage (Le Corbusier) is formation of a collective object that represents a sum of individual houses (arranged both vertically and horizontally).

In the beginning, individual houses were built closer to each other, were doubled, got united and transformed into increasingly bigger buildings, which became even faster with serial production – prefabrication of elements.
The next development stage is turning into complex systems – the tendency is to ensure individuality to certain entities and, on the other hand, have full collectivity achieved on other entities.

The next stage is when as suggested by Le Corbusier a collective building becomes a sum of individual houses arranged both horizontally and vertically.

The last traces of residential individuality inside collectivity are the attempts to keep the atmosphere and shape of a joint house on one side, and on the other to create a basic residential unit on a higher level – mostly in the form of a duplex – leaving the impression of complete space – as if living in your own house.

Final result of the collectivization process in the beginning is a variation of a multistory residential building that in time reduces to a smaller number of types. Further development resulted in unification of all building shapes under the motto of universal architecture of international style. [6]
1.3. Course of individualization – re-affirmation of urban individual house structures

Characteristics of a multistory residential building are: [7]
- the whole object represents a closed system ruled by totality in all regards;
- all its element always have an unambiguous function – they cannot function without each other and establish only one-way relation between each other;
- the route through the spaces of the object always have only one direction (and several courses);
- the structure consists of multitude parts, which if taken apart from the whole lose the reason of their existence;
- most of the space is common – all tenants use it (the land lot is common, the approaching lane is common, the entrance, the hall and vertical communication).

A residential unit inside the building is the only thing with partial level of individuality, but exclusively inside its own self. In all other aspects of individuality, a residential unit is:
- dependent – because it is permanently connected to other common parts;
- inaccessible – because it can be accessed only through common parts;
- incomplete – because it lacks a certain number of functions;
- non-developing – because it is spatially determined and surrounded with other units.

Structure of a multistory building is based on the principles of multiplying the unified elements on all levels:
- a typical residential unit is a sum of rooms of different purpose;
- a standard story is a row of horizontally arranged standard residential units;
- a multistory structure is made by piling standard stories vertically, around or along vertical communication;
- an urban structure is made by simple adding multistory buildings, which creates a universal urban block.

The mechanism of multiplication
- creating multistory collective buildings
(B.9., pp. 102)
(figure 7.)
Most common in our practice so far has been the situation that there is a single owner of the whole building, namely:
- the state – constructing social apartments;
- socially-owned (the case in ex-socialist countries), when all tenants have the same rights over common space, and
- the property of one owner – when the apartments are rented as residing units.

Introduction of several simultaneous owners and higher number of property forms requires the complexity of the physical structure of a multistory residential building equivalent to the complexity of the property relations in force.

In this regard, contrary to the collectivization process, individualization includes the following procedures:
- detachment of individual elements from a common entity;
- creation of closed residential units fit to function independently;
- specification of such closed entities in accordance with abilities, interests and wishes of the owners;
- integration and inter-connection of units into a complete spatial-physical structure, whose complexity in morphological terms is adequate to the complexity of the given property relations;
- construction of identities for parts and wholes;
- creation of conditions for constant changes (modification, addition, reforming) of elements and the whole;
- re-grouping process is in accordance with market laws and is the function of making profit;
- multistory residential buildings are transformed into complex urban structures that find their justification in linking individualization and collectivization into an inseparable entity;
- construction, furnishing and fixing of such complex urban structures should grow into a unique and complete process of residential space production that will replace mass production of standard buildings with mass production of a large number of different structures by means of flexible production technologies;
- development of a pluralistic approach will be done through improvement of methods and techniques of action and through creation of a wide range of variant-alternative models of urban residential structures.

2. METHODS AND MODELS OF INDIVIDUALIZATION (instead of the conclusion)

In order to conquer the road from total collectivization to general individualization, it is necessary to make several methodical steps:
- (de) composition of a multistory residential building structure
- (re) affirmation of original values of individual houses
- (re) definition of the level of individualization of property relations
- (de) aggregation of individual structures
- (re) structuring of spatial structures according to property relations.
2.1. De-composition of a multistory residential building structure

This assumes decomposition of the structure to its basic elements. There are two levels of decomposition:
- external decomposition
- internal decomposition

External decomposition refers to clear recognition of basic property rights to the territory used for placing the structure and its parts, which can be classified into:
- private lots that should belong to the apartments in the basement and on the ground floor;
- common zones belonging only to the tenants of the given building;
- semi-public zones belonging to the tenants of the block;
- communal areas – belonging to the tenants of the block, but used also by the tenants of other areas for communication purposes (passages, etc...);
- public areas – belonging to the local community (municipality).

![Diagram showing external decomposition](image8.png)

Internal decomposition consists of the following elements:
- residential cells;
- vertical communication;
- horizontal passage to individual apartments;
- entrance to the building;
- entrance to the residential cells.

![Diagram showing internal decomposition](image9.png)
2.2. Re-affirmation

Re-affirmation of original values of private individual houses can be seen in their recognition, survey and incorporation into multistory residential units. Original values consist of:
- estate – front and back yards;
- the entire house with its own vertical connections;
- individual access
- individual entrance to the estate and entrance to the house.

All these values should be a framework for the creation of an individual unit within a plural, urban multistory residential area.

(figure 10.)

2.3. Re-definition of property relations

This is the next necessary step in spatial elements of a multistory residential building. Basic residential unit, regardless the form of property relations, has to be treated as a completely privatized unit. Other areas, depending on desired level of individualization can have one of the characters of ownerships:
- fully private;
- mutual on the level of different groups;
- communal-users
- town-public
Re-definition of the level of ownership individualization

a) external zones

private zones  common zones  communal zones  public zones

b) internal zones

fully grouped common

horizontal access entrance vertical communication

combination of individual front yards
combination of individual communications
combination of individual back yards
combination according to ownership individualization

combination of individual horizontal accesses
combination of individual entrances
combination of vertical communication
combination of individualization according to the level of individualization
2.4. Re-aggregation of individual structures

This process of element detachment from the whole has to include complete residential units, which are connected to accompanying space in various ways and which have a different level of ownership individuality.

The following forms of individual structure aggregations are possible:
- concentrated aggregation;
- linear aggregation;
- point aggregation;
- superficial number of combinations is endless, both horizontally and vertically.

2.5. Pre-structuring

Pre-structuring of multistory urban residential structures based on the principles of pre-drawn methods produces an endless number of models.
For example, the paper shows the structuring of four basic models of complete individuality in the way which presents a combined position and property character of the following elements:

- vertical connection
- entrance individuality
- way of organizing a residential unit.

<table>
<thead>
<tr>
<th>Model</th>
<th>Vertical Communication in the Building</th>
<th>Vertical Communication Apart from Building</th>
<th>Vertical Communication for Separate Vertical Communication</th>
</tr>
</thead>
</table>
| 1. individual multi-story unit vertical | - individual entrance  
- individual access  
- individual vertical communication | - individual entrance  
- individual access  
- individual vertical communication | - individual entrance  
- individual access  
- individual vertical communication |
| 2. | g.f. 1  
2nd floor  
3rd floor  
4th floor | g.f. 1  
2nd floor  
3rd floor  
4th floor | g.f. 1  
2nd floor  
3rd floor  
4th floor |
| 3. individual one-story unit horizontal | - individual entrance  
- individual access  
- individual vertical communication | - individual entrance  
- individual vertical communication  
- collective vertical communication | - individual entrance  
- individual vertical communication  
- collective vertical communication |
| 4. individual one-story unit horizontal | - individual entrance  
- individual access  
- individual vertical communication | - individual entrance  
- individual access  
- individual vertical communication | - individual entrance  
- individual access  
- individual vertical communication |

Superficial number of combinations is endless

(figure 13.)
Numerous are the suggestions of individualization that can be found in architectural-city planning theory and practice. An example from Berlin is given as one of the most famous models.


Individual floors of collective buildings B. 13. pp. 54 (figure 16.)

Arch. O.M. Ungers (B. 13. pp. 94) (figure 17.)
Individual plots (B. 13. pp. 249) (figure 18.)
2.6. References

[4] Rambert C., B.2.,

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