

EXTERNAL DECKS- A typology in trend

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Abstract

This paper would look into typology of external decks in collective housing, its advantages and shortcomings, its relationship to current building regulations in Croatia and into the appearance of this typology in the recent housing realizations in Croatia.

According to some authors the external deck in collective housing as a way of connecting individual dwelling units first appeared in USA though already in the Middle Ages many European collective housing was based on the same model.

This type of collective housing building is a result of a more economic way of bringing together dwelling units into a single entity by reducing the number of staircases. The length of this external deck is mainly defined by fire regulations stipulating the maximum distance between the dwelling entrance and the staircase (this usually being 30 meters). This dwelling type includes many sub-types : two-storey(maisonnettes) and three-storey dwellings, type with raised or lowered decks, detached decks etc.

External deck typology could show its advantages as shortcomings and vice versa. Most commonly mentioned economic advantage of this type- reduced number of vertical communication per dwelling (a large number of dwellings per one horizontal circulation area) could turn into a shortcoming if the solution results in the lack of privacy of rooms orientated onto this communal connection of dwelling units. The advantage of this type resulting in some solutions in the individualization of dwellings (effect of a "house with garden") is often followed by the increased construction costs due to greater number of outer walls than this is the case in other types of collective housing.

The POS (State Subsidized Housing) regulations in Croatia "do not recommend to designers the use of deck system because of larger circulation areas and defficient economic parameters... In the case of the deck solution only a closed and ventilated deck with two-storey and three-storey dwellings is recommended"

The paradox of the existing situation in Croatia lies in the fact that the great number of realized (and prized) collective housing is of the external deck typology. The main reason probably lies in the possibilities of this type to offer "radically more meaningful approach" introducing into collective housing a semblance of individual dwelling followed by well known advantages of the external deck typology.

1 External decks

“Deck- a long, narrow corridor space usually on the outside of the building, built to connect separate parts of the edifice”. [1]

In this sense a deck implicitly stands for the external deck position, this being the theme of this paper covering that particular housing typology. It could be stated that the external deck system lies at the basis of all other types of deck access systems.

The use of this typology is justified by the reduced number of staircase units in collective housing complexes resulting in reduced construction costs and therefore in greater cost-effectiveness.

The length of this raised and multiplied “street” is conditioned by local fire regulations. In Croatia they stipulate that a multi-storey residential building should be divided in fire sections with the maximum 30m distance from fire escape staircases, their surface not surpassing 700m².

Dimensions of horizontal and vertical communications are set by regulations providing security requirements (to earthquake, fire, their capacity, speed of evacuation).

Deck access typology understands a sequence of great number of dwelling units related to horizontal communication. This typology is based, in the first place, in cost-effectiveness with, at the beginning, neglected requirements for high-quality dwelling.

This typology has undergone during its history ups and downs but is still today intriguing because of its advantages offering a wide range of solutions for various dwelling themes in collective housing. But this typology also results in problems in the spaces orientated to the deck:

- problem of views (from inside out and vice versa)
- problem of privacy of these spaces
- problem of noise nuisance (and protection from it)

This problem could be reduced (but not completely avoided) with decks on every floor level by:

- raised or lowered deck
- by detached decks
- by combination of two above mentioned .

It is because of these disadvantages of the external deck systems that some modified systems appeared like:

- two-storey flats with decks at every second level
- three-storey flats with decks at every third level
- modified systems-with changing positions of decks on both elevations as well as combination of external and internal decks.

The increased dwelling quality of the housing units obtained by research into the possibilities of the external deck typology most probably reduce its cost-effectiveness. The issue of cost-effectiveness in this typology is usually reduced to two extreme poles: cost effective or not cost-effective.

Mostly these parameters of cost-effectiveness are reduced to coefficients of cost-effectiveness resulting from the relations between the useable dwelling spaces and overall built areas with the aim of establishing the ratio and the limits within which these ratios could be accepted as constructively rational and cost-effective.

2 POS - State subsidized housing model in Croatia

This model was introduced in Croatia to solve the housing needs of its citizens within the framework of to them acceptable conditions, with at the same time inciting (helping) the housing construction as an element of economy in general.

This model is meant to help citizens when buying a flat by securing all the conditions necessary for the constructions of cheap and cost-effective flats which at the same time would satisfy the dwelling required qualities.

The financial model of POS is based on the partner relationship of various parties brought together by the model holder- the Republic of Croatia.

The sources of financing the construction of flats within the POS model are State budget funds, the local government funds, the citizens participation for the buying of the flat, and finally the free money market funds ie. the commercial banks money that are finding their interest in this model. In this way the funding of the construction costs is secured and ,at the same time, the cost for the flat user is acceptable within the average citizens paying possibilities.

The POS housing construction is regulated by the Act of State Subsidized Housing Construction(NN 109/2001) which regulates all the basic legal and economic issues of the POS model.

According to the Decision on the distribution and the use of budget funds in the realization of the capital project “ Social flats” of the Ministry of Public works, Rebuilding and Construction the flat size, ie the number of rooms and the maximum netto useable dwelling area is dependant on the number of family members :

- | | | |
|--------------|--------------------|-----------------------------|
| • one person | | up to 50m ² |
| • 2 persons | min. 1,5 room flat | up to 65m ² |
| • 3 persons | min. 2,0 room flat | up to 80m ² |
| • 4 persons | min. 2,5 room flat | up to 90m ² |
| • 5 persons | min. 3,0 room flat | up to 100m ² |
| • 6 persons | min. 3,5 room flat | up to 110m ² |
| • 7 persons | min 4,0 room flat | up to 120m ² [2] |

All the technical conditions are set by the Rulebook that takes over a part of the standards and technical conditions from the “ Standards of flats in the building and the settlement of State directed(subsidized) housing construction” as published for the city of Zgreb in 1984 , as well as using the “ Directions for the design of multi-storey housing construction for victims of Croatian War for Independance” from 1998.

The project qualities are measured through:

- the qualities of each flat
- the qualities of the building design
- the qualities of the surroundings
- the coefficient of the building cost-effectiveness.

“When designing POS buildings it is necessary to apply all the regulations from the housing construction field, but also the special conditions set by the investor with the aim of providing greater model acceptability to all the interested citizens of the Republic of Croatia.” [3]

According to the Rulebok architect in his choice of the building typology and morphology has to pay special attention to horizontal and vertical harmony of all the building parts as well as that of the new building and its surrounding . The functionality of the given solution is checked by the relationship of the elements of the building plans sections within the cost.-effectiveness limits.

The Rule book on the theme of the deck access system says:

“A deck is a corridor placed on the building front. It could be open or closed. Its use is mainly not recommended because of larger communication surfaces and inadequate coefficients of cost-effectiveness. If used, only closed and ventilated deck with two-storey and three-storey flats (a deck on each second or third level)is recommended. Exceptionally the use of open decks is allowed in seaside locations with no strong winds....

In the case of open decks the deck floor should be at least 5cm lower from dwelling floor levels, its floor should be in waterproof materials with rainwater evacuated towards the building front at the

maximum distance of 6m. Every flat must have a windshield space with two doors of which the outer should be made of water-resistant materials.” [4]

So says the Rule book

But POS model realizations are something quite different. A great number of buildings constructed between 2.000-2005. are of the open deck access system,

They were chosen in the Ministry open competitions by the members of the jury chosen by the same Ministry.

3 Realizations

Architect Goran Rako in 2002. had realized in Gornji Zamet in Rijeka a residential building for the victims of the Croatian War for Independence.

In this case the external deck system is justified both locally and urbanistically-wise and is very well designed. In his project by the help of the main staircase architect Rako is harmoniously staggering the decks on the vertical and through the section is obtaining a double-orientated flat. The deck also provides a possibility that every dweller enjoys beautiful views over the Bay of Kvarner.

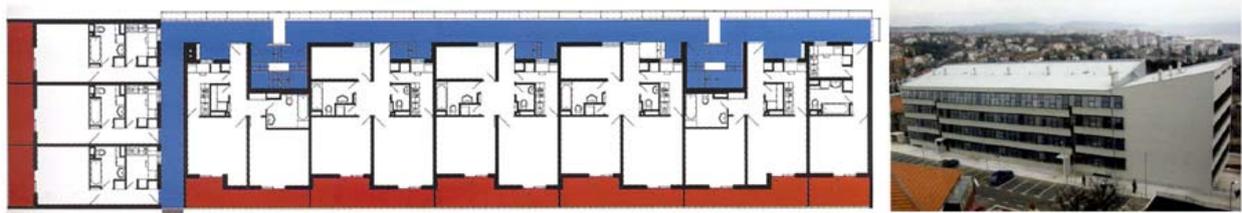


Figure 1: Goran Rako - residential building for the victims of the Croatian War for Independence, Gornji Zamet, Rijeka

In Zagreb, a competition for the 3 POS buildings was published in 2001. Architect Sanja Filep for one of the buildings won the first prize and its realization. She designed a building of two separate volumes inter-connected by a deck. Between the volumes with dwelling units are vertical communications (a staircase and lift) and an open horizontal communication enabling double-sided orientation for 12 flats and three-sided orientation for 18 flats. This design made possible the different orientation of particular flats, cross-ventilation and an illusion of dwelling in one's “own private house”.

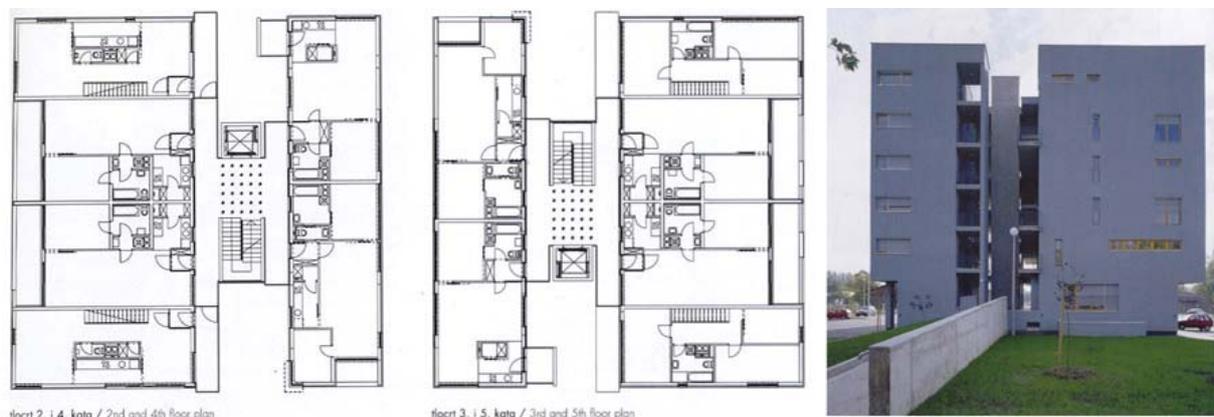


Figure 2: Sanja Filep – POS building, Spansko, Zagreb

Two buildings in the POS model by the author duo Iva Letilovic and Morana Vlahovic typologically stand between the terrace housing and collective housing.

In Krapinske Toplice the deck and the balconies are playing on the theme of so called “ganjak” while in volumes the building is reminiscent of a huge “kozlec”, an autochthonous village architecture building. All these elements are designed in the spirit of the times and the function. The deck and external and internal staircases are directly connected to the main access road along the whole length of the building west elevation.

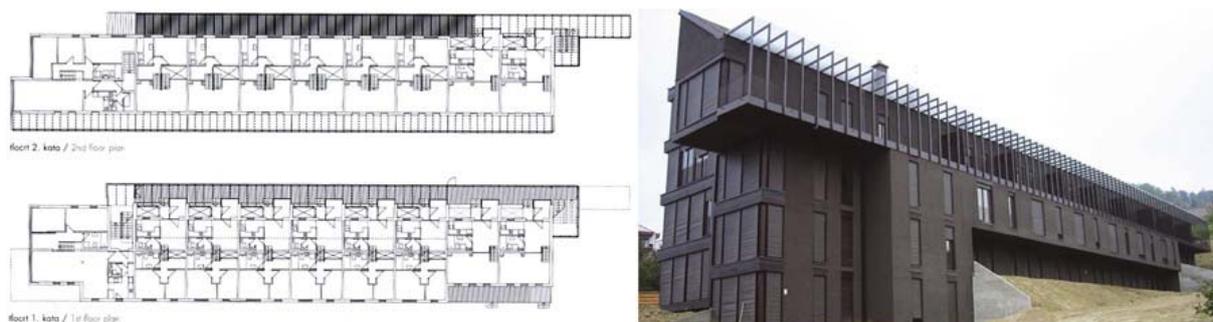


Figure 3: I. Letilovic and M. Vlahovic: POS building, Krapina

On the example of the Samobor building the same duo is again showing a perfect mastering of the typological system and the building dimensions. By the manner of how the building fits into its surroundings of the Samobor rural periphery and in the landscape it could be difficult to guess that the building consists of 25 flats. A great attention was paid to the good insulation of flats as well as to the good cross-ventilation of each dwelling unit. This was achieved by using in one part a typology of two flats per staircase and in the other part the system of open deck access.

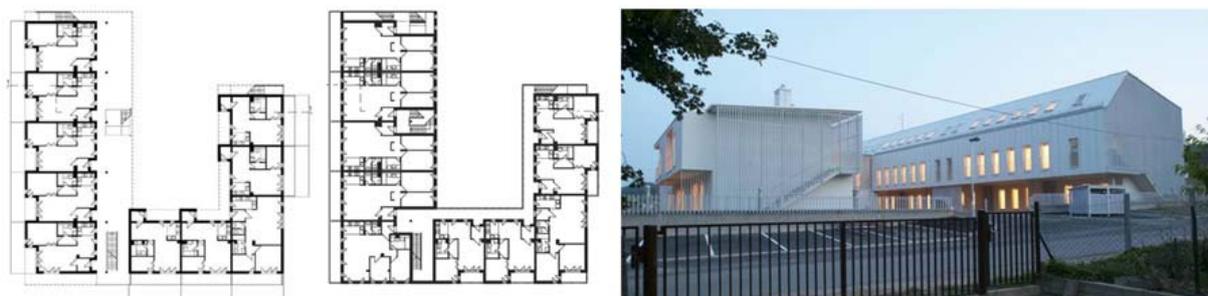


Figure 4: I. Letilovic and M. Vlahovic: POS building, Krapina

In Karlovac the Baletic couple of architects built in 2001/2003 the building with an external deck inside the building. The building was designed as a tripartite edifice, consisting of two open patios surrounded by two L-shaped buildings. These two L-shaped plans are mirrored and vertically staggered for half a storey. This enabled a double orientation of all the flats and good cross ventilation and lighting. Short decks connect greater number of dwelling units avoiding all the well known disadvantages of the deck access systems (length of the horizontal communication and loss of privacy).



Figure 5: Z. Baletic & B. Baletic– POS building, Karlovac

4 Conclusion

These (almost at random) chosen examples of the recently built deck access collective housing in Croatia show the full richness of the possible solutions. In these examples (in each case original and site adequate) the deck typology is showing almost only its advantages.

It is a proof that any recommendation for the avoidance of this or another typology is unnecessary.

Creative architects by their projects prove this statement. Everyone within a given location gives the best answer to the set task, by providing the adequate number of high-quality flats responding in the best possible way to the building context.

By playing on the theme of deck access system, they are, by modifying and combining it, creating interesting solutions of connecting dwellings into harmonious wholes. They are at the same time satisfying all the required qualities such as – the quality of every flat, the quality of the building and the building cost-effectiveness.

It is the proof that the prejudices of any kind are not good including those on the external decks systems.

And so, though in trend, they provide good answers (solutions).

Citations

- [1] B. Klaić, *Dictionary*, Zagreb (1951), page 241
- [2] *POS Regulation book*, Zagreb (2003), pages 5-6
- [3] *POS Regulation book*, Zagreb (2003), page 25
- [4] *POS Regulation book*, Zagreb (2003), pages 32-42

Reference

- [5] G. Knežević: *Visestambene zgrade*, TK, Zagreb (1984)
- [6] *Realizacije POS-a*, Arhitektonski fakultet, Zagreb (2004/2005)