

VREDNOTENJE UPORABNE VREDNOSTI STANOVANJ ZA DVIG BIVALNE KAKOVOSTI

USE VALUE ASSESSMENT FOR RAISING THE QUALITY OF HOUSING

Ključne besede

stanovanjska kakovost; uporabna vrednost stanovanja; večstanovanjske stavbe; stanovanjska prenova

Key words

housing quality; use value of dwellings; multi-family residential buildings; housing renovation

Izvleček

Prispevek obravnava različne vidike trajnostnega načrtovanja stanovanj, ki izpostavljajo vrednotenje kakovosti stanovanj na osnovi različnih metod in orodij za vrednotenje načrtovanja stanovanjskih novogradenj in prenove obstoječih stanovanjskih zazidav. Uvodoma opredelimo ožji okvir področja večstanovanjskih stavb, na katerem v zadnjih desetletjih v evropskem prostoru prepoznavamo razvoj različnih orodij, ki kakovost stanovanjske gradnje presoajo vključno iz vidika družbene trajnosti. Ugotavljamo, da v Sloveniji to področje sicer pokrivajo različni predpisi in priporočila, vendar ne vključujejo meril kakovosti arhitekturnih rešitev stanovanj, pomembnih z vidika uporabnika. V nadaljevanju predstavljamo švicarski sistem vrednotenja uporabne vrednosti stanovanj iz vidika uporabnika, ki smo ga ocenili kot primernega za preizkus tudi za slovenske razmere. Izvedli smo ga z vrednotenjem arhitekturnih rešitev stanovanj v treh značilnih večstanovanjskih zazidavah v Mariboru. Na ta način smo pridobili različne vrednosti stanovanj, ki se med seboj razlikujejo glede na arhitekturne, konstrukcijske in tehnološke zasnove izbranih stanovanjskih zazidav. Sklepamo, da rezultati vrednotenja uporabne vrednosti stanovanj nakazujejo nove priložnosti vključevanja inovativnih meril kakovosti v zakonodajne in strateške dokumente tako na področju prenove obstoječega stanovanjskega fonda, kakor tudi na področju načrtovanja novih stanovanjskih zazidav.

Abstract

The paper discusses sustainable housing development, focusing on the assessment of housing quality conducted on the basis of various methods and tools for evaluating the design concepts of new housing developments and the renovation of existing housing estates. The introduction determines the issue of multi-family residential housing as the framework of the research. In the last decades, in view of social sustainability, various tools for evaluating housing quality were developed. We observe that, in Slovenia, certain regulations and recommendations concerning this topic exist, but they do not include the criteria of the quality of architectural design from the residents' point of view. Next, we present a Swiss system for determining the use value of dwellings for the resident, which we consider appropriate for evaluating the housing quality in Slovenia. We tested the tool by assessing individual dwellings in residential buildings located in three characteristic housing estates in Maribor. In this way, we obtained the results regarding the use value of dwellings that varied heavily in view of the architectural, structural and technological characteristics. As a conclusion, we discussed the opportunities of incorporating the use value assessment into the Slovenian regulations and strategic documents concerning the renovation of the existing housing stock as well as new housing developments.

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1. Uvod

Trajnostno načrtovanje stanovanj ponazarja pristop, ki se ni uveljavil samo na področju načrtovanja in gradnje novih stanovanj, temveč tudi na področju prenove obstoječega stanovanjskega fonda, saj vključuje skrb za zagotavljanje kakovostnega bivanja na daljši rok. Kot tak zahteva odgovorno ravnanje vseh udeležencev v procesih odločanja o kakovosti, od priprave projektov, preko načrtovanja in graditve, do vzdrževanja. Prizadevanja za trajnostno urbanistično in arhitekturno načrtovanje na tem področju stremijo k izboljšanju gospodarskih, družbenih in okoljskih razmer za dvig bivalne kakovosti v sozvočju z individualnimi potrebami sedanjih in bodočih stanovalcev. V evropskem prostoru zavzema posebno mesto obravnava stanovanjske kakovosti na področju prenove in preurejanja obstoječih večstanovanjskih zazidav v primestnem prostoru. Večino stavb predstavljajo večstanovanjske stavbe s praviloma majhnimi stanovanji, kjer so arhitekturne rešitve standardizirane, prilagojene konstrukcijskim tehnološkim rešitvam z nizkimi stroški gradnje, ki so zato pogosto slabše kakovosti. Največji izziv danes predstavljajo nove zahteve zaradi sprememb v življenjskih slogih in demografske spremembe gospodinjstev [Sendi, 2013], Gotovo velja, da je kakovostno stanovanje najpomembnejši člen v presoji bivalnega okolja.

Različne metode, namenjene vrednotenju kvalitete stanovanj v večstanovanjskih stavbah, vzpostavljajo razmere za uveljavljanje inovativnih oblik načrtovanja in prenove, ki v postopke odločanja vključujejo najrazličnejše deležnike. V skladu z zgodovinskim razvojem poudarjajo funkcionalne, gradbenotehnične in estetske izboljšave stanovanjskih standardov, ki v mnogih obstoječih zazidavah več ne ustrezajo potrebam današnjih stanovalcev. V zadnjih desetletjih je pojem izboljšanja bivalne kakovosti v največji meri povezan z ukrepi za učinkovito rabo energije, z zmanjšanjem stroškov obratovanja ter povečanjem vgradnje okolju prijaznih materialov, ki poudarjajo upoštevanje sedanjih, pa tudi prihodnjih potreb stanovalcev. Pristopi vrednotenja

kakovosti vključujejo kazalnike, ki presojajo bivalno kakovost na ravni arhitekturne zasnove stanovanj, večstanovanjskih stavb in celotnih stanovanjskih zazidav. Predstavljajo preplet številnih faktorjev, ki izpostavljajo zlasti funkcionalnost arhitekturnih zasnov, prilagojenih sodobnim načinom bivanja v procesih načrtovanja, gradnje in uporabe [Sitar, Skalicky, 2012]. Številne študije primerov, izdelane na osnovi različnih metod, poudarjajo načela družbene trajnosti, ki narekujejo celostni pristop k vrednotenju kakovosti. Le-ta zahteva razvoj novih družbenih, finančnih, tehničnih in postopkovnih modelov, namenjenih najzgodnejšim fazam odločanja na ravni stanovanjskih organizacij, politike, lastnikov in načrtovalcev [COST TU0701, 2008].

V pričujočem prispevku je uporabna vrednost stanovanj definirana kot ocena kvalitete stanovanja z vidika uporabnika in vključuje kakovost razporeditve, velikosti, opremljenosti in orientacije prostorov glede na možnost fleksibilne in variabilne uporabe le-teh.

2. Kakovost stanovanj v slovenskih razmerah

Kakovost stanovanj bistveno vpliva na kakovost bivanja v smislu zagotavljanja primerne varnosti, zaščite, udobja, kakor tudi občutenja pripadnosti prostoru bivanja [Sendi, 2001]. Pojem kakovosti stanovanj v Sloveniji je sicer posredno vključen v ustavno določilo, po katerem država zagotavlja državljanom možnosti za zagotovitev primerne stanovanja [Ur. l. RS, 1991]. Zadostna in kakovostna oskrba stanovanj tradicionalno predstavlja enega bistvenih elementov socialne politike na področju stanovanjske politike v Sloveniji, ki se je udeleževala v praksi do samostojne države in uvedbe tržnega gospodarstva. Največjo rast je stanovanjski fond doživel med leti 1970 in 1980 z intenzivno stanovanjsko gradnjo t.i. družbenih stanovanj, zgrajenih v prevladujoči tipologiji večstanovanjskih stavb, ki so dosegli vrhunec v obliki stanovanjskih sosesk. Po letu 1985 je stanovanjska gradnja zaradi sprememb sistema financiranja in oskrbe pričela upadati, po letu 1991 pa je zaradi novih razmer na stanovanjskem trgu popolnoma zastala.

1. Introduction

Sustainable housing development is a concept that has become established not only in the field of designing and building new housing, but also in the field of renovation of the existing housing stock, since it expresses the concern for ensuring the quality of living in the long term. It thus requires corresponding responsible actions of the stakeholders in all the decision-making processes related to housing quality, from the design and the construction phase, to the maintenance of buildings. Increasing sustainability in this field includes the improvement of the economic, social and environmental conditions in order to raise the quality of living implying in accordance with the individual needs of present and future residents. In Europe, the consideration of housing quality plays an important role in the redevelopment of existing suburban housing estates. The majority of housing structure was constructed in different typologies of multi-family residential buildings, characterised by generally small dwellings of standardised architectural concepts. Therefore, adapted to low-cost constructional and technological solutions, they are often of poorer living quality. Currently, the changes in lifestyles and the changing demographic structure of households present a major challenge [Sendi, 2013]. Namely, a suitable dwelling is the most important element in assessing residential environment.

Tools, intended for the assessment of the multi-family residential buildings housing quality, create the conditions for establishing innovative forms of design that include various stakeholders in decision-making processes. In line with tradition, they emphasise the functional, constructional-technical and aesthetic improvement of the housing standards, which in the existing multi-family residential buildings no longer meet the needs of today's residents. In the last decades, the rise in the aspects of quality housing have been predominantly related to measures for a more efficient use of energy, a reduction in operating costs and an increase in installing environmentally friendly materials.

Tako velja, da je danes 70 % obstoječega stanovanjskega fonda v Sloveniji potrebno obnove, kar vpliva na slabšo kakovost stanovanjskih razmer v starejših večstanovanjskih stavbah in zazidavah. Problematika trajnostne prenove večstanovanjskih stavb je tesno povezana s številnimi ovirami v procesih odločanja, okrepljenih z učinki privatizacije stanovanj v zgodnjih 90-ih letih [Sitar, Skalicky, 2012].

Ocena kakovosti stanovanj je praviloma omejena na statistične vire o velikosti, lokaciji, številu in opremljenosti stanovanjskih stavb, ki omogočajo določeno primerjavo s povprečnimi vrednostmi na ravni Evropske unije. Viri navajajo, da povprečna velikost stanovanj v mestih v Sloveniji znaša 72,1 m², kar je 16 m² pod evropskim povprečjem [Eurostat, 2015]. Nasprotno je število članov gospodinjstva nad evropskim povprečjem, kar pomeni, da je stanovanjska površina na prebivalca prav tako nižja od evropskega povprečja. V zvezi s presojo kakovosti stanovanj smo zasledili podatek, da v slabih stanovanjskih razmerah živi 32 % gospodinjstev, to je skoraj tretjina prebivalstva [Resolucija o nacionalnem stanovanjskem programu, 2015]. Po drugi strani pa glede na starost obstoječih stanovanj fonda preseneča podatek, da je stopnja zadovoljstva s stanovanji v Sloveniji višja od evropskega povprečja, saj znaša kar 60,4 % [Eurostat, 2015]. Pogled od zunaj takšno stanje pripisuje visokemu deležu lastniških stanovanj, saj imajo lastniki stanovanj v primerjavi z najemniki bolj pozitiven odnos do svojega bivališča [Dekker et al., 2011].

Slovenska zakonodaja ne vključuje posebnih zahtev in standardov v zvezi z vrednotenjem kakovosti stanovanj. Regulativa s področij graditve ter cenitve in oddajanja stanovanj v neprofitni najem pa izpostavlja določena merila, ki so sicer neposredno povezana s kakovostjo stanovanj. Tako Pravilnik o minimalnih tehničnih zahtevah za graditev stanovanjskih stavb in stanovanj [Ur. l. RS, 2011] za novogradnje in rekonstrukcije večstanovanjskih objektov predpisuje minimalne zahteve, ki se nanašajo na načrtovanje posameznih prostorov in njihovo opremljenost, odmike opreme, osvetlitev ipd.

Obrazec cenitve stanovanj, ki je priloga Pravilnika o merilih za ugotavljanje vrednosti stanovanj in stanovanjskih stavb [Ur. l. RS, 2004], pa določa vrednost stanovanj glede na površino stanovanja, ponudbo skupnih prostorov in konstrukcijsko-tehnične značilnosti. Tudi Pravilnik o dodeljevanju neprofitnih stanovanj v najem [Ur. l. RS, 2004] določa minimalne in maksimalne površine stanovanja, vezane na število članov gospodinjstva ter tako kot edini med naštetimi vsebuje dejansko določene površinske normative glede velikosti stanovanja.

Dejstvo je, da za področje prenove v Sloveniji nimamo določil za vrednotenje kakovosti obstoječih stanovanj, čeprav so cilji kakovostne prenove vključeni med prednostne cilje strateških in razvojnih dokumentov. Tako eden zadnjih dokumentov, Resolucija o nacionalnem stanovanjskem programu 2015 – 2025 poudarja celovit pristop za dvig kakovosti stanovanjske gradnje in ponovno postavlja v ospredje aktivno stanovanjsko politiko države [Ur. l. RS, 2015]. Ugotavlja, da je stavbni fond v Sloveniji zastarel in ne ustreza več energetskim in funkcionalnim standardom sodobne družbe. Med osnovne cilje prednostnih projektov v obdobju naslednjih desetih let uvršča prenovo stanovanj v skladu s sodobnimi bivanjskimi in okoljskimi trendi. Kakovostna stanovanja opredeljuje z vidikov kakovostne graditve, primerne velikosti glede na potrebe uporabnikov ter čim manjših stroškov vzdrževanja in bivanja. Načela zagotavljanja kakovosti in funkcionalnosti veljajo tako za novogradnje kot za prenove, vendar za njihovo vrednotenje ni podanih nobenih podrobnejših določil.

3. Metode in kazalniki vrednotenja kakovosti stanovanj

V znanstveni literaturi najdemo različne definicije kakovosti stanovanj. Tako Sendi [2001] med najpomembnejše kazalnike uvršča, med drugimi, dostop do osnovne javne infrastrukture, upoštevanje standardov in zakonodaje s stanovanjskega področja, kakovost konstrukcije in gradbenih materialov, pa tudi arhitekturno zasnovo in fleksibilnost rabe.

Taking into account the present and future needs they emphasize user-friendly dwellings. The assessment approaches include indicators that evaluate quality including the architectural design of dwellings, buildings, and the entire housing estate. They summarise an interweaving of numerous factors that primarily point out the functionality of the architectural design concepts adapted to contemporary living at all levels of design, construction and use (Sitar, Skalicky, 2012). Numerous case studies conducted in various countries according to different methods stress the concept of social sustainability, which requires a comprehensive approach to quality assessment. They support the development of new social, financial, technical, and procedural models adjusted to the earliest stages of decision-making at the level of housing associations, authorities, owners and designers [COST TU0701, 2008].

In this paper, we define residential use value as an assessment of the quality of use of the dwelling for the resident, encompassing the evaluation of the layout, size, possible furnishing and orientation of separate spaces of the dwelling in view of their flexible and variable use.

2. Housing quality in Slovenian context

The quality of housing has an essential impact on the quality of living in terms of provision of suitable shelter, security protection, comfort, and the fulfilling of the sense of belonging to one's place of habitation [Sendi, 2001]. The concept of housing quality is indirectly included in the Slovenian Constitution according to which the state creates the opportunities for citizens to obtain proper housing [1991]. The sufficient provision of suitable dwellings has been traditionally one of the essential elements of social policies, which was also the case in the Slovenian housing policy before Slovenia gained its independence and introduced a market economy. The greatest increase in the housing stock was achieved during intensive housing construction activities periods between the years 1970

and 1980 when the construction of the so-called social dwellings in the predominant typology of multi-family residential buildings and housing estates reached its peak. After 1985, this construction started to decrease due to the changes in the system of funding and the provision of housing, while the new circumstances in the housing market after 1991 caused its stagnation. Thus, today 70 % of the existing housing stock is in need of renovation, which entails a poorer quality of life in older housing estates. The problem of renovating multi-family residential buildings is closely related to numerous obstacles in decision processes of building renovation, which has been intensified by the effects of the privatisation of dwellings in the early 1990s [Sitar, Skalicky, 2012].

Housing quality assessments are generally limited to the statistical data regarding the size, location, number, and equipment of residential buildings that enable a certain comparison of quality with the EU average. According to it, the average size of dwellings in Slovenian cities is 72.1 m², which is 16 m² under the European average [Eurostat, 2015]. In contrast, the number of household members is above the European average, which means that the housing surface per inhabitant is lower than the European average. In addition to this, 32 % of households live in bad conditions [Resolution of the National Housing Programme 2015-2025, 2015]. On the other hand, in view of the age of the existing housing stock, according to Eurostat [2015], the degree of housing satisfaction in Slovenia amounts to 60.4 % and is surprisingly higher than the European average. An external view ascribes the result to a high share of owner-occupied dwellings since compared to the tenants, the owners have a more positive attitude toward their dwelling [Dekker et al., 2011].

The Slovenian legislation does not contain specific standards concerning the quality assessment of dwellings. However, the regulations on building construction and valuation, as well as the regulations on non-profit rental dwellings provide certain criteria that are directly linked to housing quality.

Acre in Wyckmans [2014] govorita o prostorski kakovosti, ki jo opredeljuje prepletenost kazalnikov, kot so možnosti različnih pogledov, notranja prostornost in razporeditev prostorov, prehod med javnim in zasebnim ter zaznane, zgrajene in dejanske gostote poselitve. Po Nielsen in dr. [2016] orodja v pomoč odločevalcem, ki vrednotijo kakovost procesov prenove na osnovi prepoznavanja trajnostnih ciljev v prednačrtovalski in načrtovalski fazi, vključujejo vidike ekološke, ekonomske in družbene trajnosti tako stavb kot celotnih stanovanjskih zazidav ter med pomembne kazalnike uvrščajo arhitekturno kakovost in funkcionalnost. V Sloveniji lahko kot priporočilo za trajnostno arhitekturno načrtovanje razumemo slovenski prevod nemške Smernice trajnostne gradnje [IZS, 2013], ki se sicer v izvirniku uporablja pri javnih investicijah. Le-te v okvir kakovosti uvrščajo vidike ekološke, ekonomske ter družbeno-kulturološke in funkcionalne kakovosti, ki zagotavljajo funkcionalnost, kakovost oblikovanja ter varstvo zdravja, varnosti in ugodja. Del kazalnikov je bil preizkušen v analizi desetih stanovanjskih zazidav gradnje za trg v Sloveniji, zgrajenih v obdobju med leti 2002 in 2011, katere rezultat je z vidika uporabnikov porazen, saj so bile njihove potrebe v fazi načrtovanja docela izključene. Čok kot avtor raziskave ugotavlja, da v stanovanjski gradnji, z izjemo

zagotavljanja energetske učinkovitosti, ki je določena s predpisi, prevladujejo izrazito ekonomski interesi, pogršamo pa vidike kulturološke in družbene kakovosti. Zato je nujno, da se v slovensko zakonodajo vpeljejo primerna orodja za zagotavljanje vseh oblik trajnosti [Čok, 2014].

3.1. Uporabna vrednost stanovanja kot merilo kakovosti

Število raziskav, ki vključujejo presojo kakovosti stanovanj z vidika njihove uporabne vrednosti, je zaradi metodoloških omejitev sorazmerno majhno, saj velja, da se je pri tovrstnem vrednotenju težko izogniti subjektivni oceni. Vsekakor pa vidik uporabne vrednosti na področju vrednotenja kakovosti stanovanj zavzema posebno mesto, saj je osnovan na specifični oceni vpliva kakovosti arhitekturne zasnove na zadovoljstvo uporabnikov [Nogršek, 2001]. Takšen pristop je zasnovan v švicarskem Sistemu vrednotenja stanovanj (v nadaljevanju SVS), ki vključuje presojo kakovosti stanovanj na osnovi uporabne vrednosti izključno z vidika uporabnika [Bundesamt für Wohnungswesen, 2014]. Izbrani sistem se že od leta 1975 uporablja za določitev subvencij za gradnjo neprofitnih stanovanj, ki podpira izvajanje stanovanjske politike, v letih 1986, 1990 in 2015 pa so ga prilagodili sodobnemu razvoju stanovanjske gradnje.

Slika 1: Stanovanjski blok v stanovanjski zazidavi Metalna, 1953 (značilni tloris etaže). Povzeto po načrtih iz Pokrajinskega arhiva Maribor.

Figure 1: Residential building in the Metalna housing estate, 1953 (typical floor layout). Redrawn from plans of Regional Archives Maribor.



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Thus, the Rules on Minimum Technical Conditions for the Construction of Residential Buildings and Dwellings [2011] prescribe the minimum requirements for new housing developments and the reconstructions of multi-family residential buildings that apply to designing individual rooms and their minimum furnishings, lighting, etc. The Housing Assessment Form in the Annex to the Rules on the Criteria for Assessing the Value of Dwellings and Residential Buildings [2004] enables the determination and comparison of the value of dwellings according to size, the variety of common areas and their constructional and technical characteristics. The Rules on the Rental of Non-profit Dwellings [2004] determine the minimum and the maximum floor area of a dwelling according to the number of household members and are thus the only regulation to provide requirements regarding the size of the dwellings according to the number of household members.

Although Slovenia has no relevant regulations regarding quality assessment, the quality renovation of the existing housing stock was adopted as one of the priority objectives of strategic and development documents. One of the latest documents, the Resolution of the National Housing Programme 2015-2025 [2015] reflects a positive attitude toward a comprehensive approach to raising housing quality and highlights an active role of the state in housing policy. The document states that the housing stock in Slovenia is aging and, therefore, it does no longer meet the contemporary standards regarding energy consumption and functionality.

The renovation of dwellings in accordance with contemporary housing and environmental trends is determined as one of the basic objectives to accomplish in the next ten years. The quality of dwellings is characterised by the quality of its construction, appropriate size suitable for the users' needs, and the lowest possible maintenance and living costs. However, the principles of ensuring quality and functionality, apply to both new developments and housing renovation, but do not provide any detailed criteria.

3. Methods and indicators of housing quality assessment

In current literature we find various definitions concerning housing quality. According to Sendi [2001], the most important weighting factors are, among others, access to basic communal infrastructure, compliance with design and building standards, quality of construction and building material, architectural design of the dwelling and the flexibility of the use of dwellings. Acre and Wyckmans [2014] argue the definition of spatial quality as the interrelation between four determinants as defining views, internal spatiality and spatial arrangements, transition between private and public spaces, and perceived, built and human densities.

According to Nielsen et al. [2016], the decision support tools to evaluate the housing quality in building renovation processes identify sustainability goals in the pre-design and design phase. These tools advocate, among others, the aspects of ecological, economic, and social sustainability of buildings and entire urban areas, incorporating in the indicators for accessing architectural quality and functionality.

In Slovenian literature, we can find the translation of German Guideline for Sustainable Building [IZS, 2013], originally applied for the assessment of public investments. A quality sustainable construction is related with ecological, economic, socio-cultural and functional quality, the latter including standards for functionality and quality of design, protection of health, safety and comfort.

According to this tool, Čok [2014] analysed ten housing estates constructed for the Slovenian housing market in the period between 2002 and 2011. He claimed that the needs of the future dwellers were generally excluded from the planning phases. In his conclusion, Čok highlights the necessity to introduce appropriate tools for ensuring all kinds of sustainability into Slovenian legislation since with the exception of ensuring energy efficiency and compliance with building regulations, the Slovenian housing sector is dominated by economic interests and the lack of social aspects of sustainability.

Za razliko od drugih podobnih metod, kot so na primer britanske smernice Evaluating housing proposals step by step [CABE, 2008], večina kazalcev SVS temelji na dejanskih izmerah in numeričnih ocenah, ki puščajo zelo malo prostora za subjektivne interpretacije. To potrjuje tudi izbor SVS kot objektivno merilo za preizkus vrednotenja uporabne vrednosti stanovanj v dvanajstih stanovanjskih zazidavah v avstrijskem Gradcu, ki je dal vzpodbudne rezultate za oblikovanje novih orodij za dvig kakovosti arhitekturnih rešitev [Nogršek, 2001].

Glede na to, da so tipologije obstoječe večstanovanjske gradnje v preteklih desetletjih do določene mere primerljive s Slovenijo, smo se odločili, da metodo SVS vrednotenja uporabne vrednosti stanovanj preizkusimo za naše razmere raziskavi stanovanj in stanovanjskih zazidav v Mariboru.

Izbrano orodje SVS predstavlja sistem vrednotenja kakovosti stanovanj z vidika uporabne vrednosti za stanovalca na osnovi 25 kazalnikov, razdeljenih v tri skupine. Ocenjevani objekt lahko doseže za vsakega od kazalnikov maksimalno štiri točke, ki se seštevajo po posameznih skupinah in kot celota za objekt. Prva skupina na osnovi šestih kriterijev ocenjuje na ravni umestitve zazidave v prostor, druga po osmih kriterijih vrednoti kakovost na ravni celotne stanovanjske zazidave in tretja z enajstimi kriteriji ocenjuje kakovost na ravni posameznih stanovanj. Za preizkus SVS v slovenskih razmerah smo izbrali raven vrednotenja posameznih stanovanj v treh značilnih stanovanjskih zazidavah v drugem največjem slovenskem mestu: Metalna, Jugomont in Poljane.

4. Vrednotenje uporabne vrednosti stanovanj v stanovanjskih zazidavah Metalna, Jugomont in Poljane

V zadnjih desetletjih trajnostni pristopi k raziskavam obstoječega stanovanjskega fonda v Sloveniji izpostavljajo večstanovanjske stavbe, zgrajene po drugi svetovni vojni. Po svojih bivalnih standardih več ne ustrezajo potrebam sedanjih stanovalcev, kar narekuje nujno vpeljavo določenih kriterijev

arhitekturnega načrtovanja za odločanje o prenovi. Da bi pridobili objektivno oceno kakovosti obstoječih stanovanj, smo preizkusili orodje SVS vrednotenja kakovosti z orodjem SVS na primerih stanovanj in večstanovanjskih stavb v treh stanovanjskih zazidavah v Mariboru na osnovi analitične študije iz leta 2011 [Šprah, 2011], ki smo jo za potrebe prispevka aktualizirali in nadgradili z upoštevanjem določil prenovljenega SVS iz leta 2015.

Izbrana stanovanja smo ocenili kot značilna za presojo kakovosti večstanovanjske gradnje v različnih obdobjih po drugi svetovni vojni, iz katerega so se v Mariboru ohranile tipološko različne organizirane stanovanjske zazidave. Stanovanjska zazidava Metalna je bila grajena v obdobju med leti 1949 in 1953, Jugomont med leti 1965 in 1972 in Poljane v leta 2007. Vse tri zazidave so bile zgrajene v okviru t. i. družbene stanovanjske gradnje, financirane z javnimi sredstvi za praviloma najemniški sektor v skladu z normativi za dodelitev stanovanj. V stanovanjski zazidavi Metalna smo analizirali trietažni linijski stanovanjski blok z 18 stanovanji, ki je bil zgrajen leta 1953. Dvosobna stanovanja so skoraj identična v tlorisni zasnovi z veliko bivalno kuhinjo in ostalimi prostori, nanizanimi vzdolž hodnika. Razlikujejo se po balkonih, ki jih pritlična stanovanja nimajo, in dodatnem oknu v kuhinji v vogalnih stanovanjih. Značilna stanovanjska etaža, po daljših stranicah orientirana v smeri vzhod-zahod, veže dve stanovanji na eno stopnišče in tako omogoča dvostransko, v vogalnih stanovanjih pa celo tristransko orientacijo in s tem naravno osvetlitev v vseh prostorih (Slika 1).

Za konstrukcijsko zasnovo je značilna izvedba opečnih nosilnih in nenosilnih sten, medetažne stropne plošče in stopniščne rame pa so v betonski izvedbi. Stavba kaže slabosti, značilne za povojne tipizirane stanovanjske zazidave, kot so toga prostorska in oblikovna zasnova ter uniformiranost tlorisnih rešitev kot posledice pomanjkanja gradbenih materialov in sanitarne opreme, slabe kakovosti gradbeno-obrtniških del in pomanjkljive komunalne opreme [Pirkovič-Kocbek, 1982].

3.1. Use value of dwellings as a criterion of quality

In order to avoid a subjective judgement, and due to methodological limitations, the number of studies that include housing quality assessment from the viewpoint of the use value of dwellings is relatively small. Nevertheless, this aspect plays a specific role in the housing quality evaluation, as it emphasizes the impact of the quality of architectural design on the satisfaction of users [Nogršek, 2001]. This kind of approach at assessing solely the use value for the residents has been adopted in the Swiss system of Use Value Assessment of Dwellings (hereinafter referred to as the UVAD) [Bundesamt für Wohnungswesen, 2015]. As a quality assessment tool, it has been successfully implemented in the Swiss non-profit housing policy in 1975. In 1986, 1990 and 2015, it was adapted to the current stage of housing development. As opposed to other similar methods, such as the British guideline [CABE, 2008], most of the UVAD indicators are based on real measurements and numerical evaluations and thus leave very little space for subjective interpretations.

This was also confirmed by the selection of the UVAD method as the most objective criterion for testing the use value assessment of dwellings in twelve housing estates in Graz, Austria [Nogršek, 2001]. Since the existing typologies of multi-family residential buildings in Graz are to a certain extent comparable with the conditions in Slovenia, we decided to use the UVAD methodology for testing the use value assessment of the dwellings in the Slovenian city of Maribor.

The UVAD method comprises 25 indicators, divided into three categories. The assessed building obtains a maximum of four points for each indicator; the points are added up by category and as a total. The first category comprises six indicators to assess the buildings' location, the second one eight indicators to assess the housing estate, and the third one eleven indicators to assess the individual dwellings. The last one appeared most interesting for our analyses to assess the use value from the view of residents in three characteristic Slovenian housing estates, located in Maribor, the second biggest city of Slovenia.

4. The use value assessment of dwellings in the Metalna, Jugomont and Poljane housing estates

In current decades, the sustainable approaches for assessing the quality of the existing housing stock in Slovenia are focused on multi-family residential buildings constructed after the WWII. Generally, they no longer meet the needs of current residents and urgently call for quality evaluation criteria of architectural design in building renovation. In order to obtain objective information, we tested the UVAD tool in dwellings and residential buildings in three housing estates in Maribor based on the study conducted by Šprah in 2011, and updated according to the revised UVAD from 2015. Concerning the architectural concepts, the selected housing estates have marked three different periods of housing development after the WWII. Metalna housing estate was built in the period from 1949 to 1953, Jugomont from 1965 to 1972, and Poljane in 2007.

All three housing estates were built within the frame of the publically funded social housing system, planned for rent tenants selected in accordance with specific requirements for socially weak citizens. In the Metalna housing estate we analysed a three-storey residential block with 18 dwellings, built in 1953. The layout concepts of individual floors with two-room dwellings are almost identical, including a large kitchen and rooms lined-up along the corridor. They differ in terms of the availability of balconies (the ground floor does not have balconies), and additional windows in kitchens of corner dwellings. The typical floor layouts are positioned in the east-west direction of the longer side of the building, with a staircase connecting two dwellings per floor, thus enabling the windows to face two, in corner dwellings even three different directions, and the daylight in all rooms (Figure 1). In regard to the construction system, both, the load-bearing and non-load-bearing walls are brick masonry, while the ceiling slabs and the staircases are built in concrete. All in all, the analysed building represents all the characteristics of post-war typified housing structure with an inflexible spatial and design concept, uniform layout solutions dictated by the lack of building materials and bathroom equipment, poor construction and finishing works, and a deficient public utility infrastructure [Pirkovič-Kocbek, 1982].

Slika 2: Stanovanjski blok v stanovanjski soseski Jugomont, 1967 (značilni tloris etaže). Povzeto po načrtih iz Pokrajinskega arhiva Maribor.

Figure 2: Residential building in the Jugomont housing estate, 1967 (typical floor layout). Redrawn from plans of Regional Archives Maribor.



Slika 3: Linijski blok s stolpičem v stanovanjski zazidavi Poljane, 2007 (značilni tloris etaže).

Figure 3: Residential buildings in the Poljane housing estate, 2007 (of a typical floor layout).



Drugi primer je stanovanjski blok v stanovanjski soseski Jugomont, zgrajen leta 1967, ki kaže značilno arhitekturno zasnovo v betonski montažni konstrukciji. Le-ta je med letoma 1960 in 1985 prevladovala v izvedbah vseh večjih stanovanjskih projektov v okviru nekdanje Jugoslavije [Jovanović et al., 2012]. Montažni sistemi so zagotavljali hitrejšo, cenejšo in kakovostnejšo gradnjo, ki so jo podpirali tako investitorji kot izvajalci gradbenih del [Mercina, 2006]. V šestih etažah stanovanjskega bloka se nahaja 70 stanovanj v razponu od garsonjer do 2,5-sobnih stanovanj, vezanih na dve notranji stopnišči. Značilni tloris stanovanjske etaže, ki je po daljših stranicah orientiran v smeri vzhod-zahod, niza stanovanja, ki so manjša orientirana enostransko, večja pa dvostransko. Majhne kopalnice so brez oken (Slika 2). Konstrukcijski sistem uporablja betonske montažne elemente sistema Jugomont, ki strogo ločuje nosilne in nenosilne zidove, prečne nosilne zidove na osni razdalji 372 cm pa povezuje sredinski vzdolžni zid [Mercina, 2006]. Montažni fasadni elementi so izvedeni v betonu, med okni pa kot sendvič plošče s pločevinasto oblogo. Stanovanja v tretji stanovanjski zazidavi Poljane se nahajajo v linijskem bloku in stolpiču, povezanim s podzemno garažo. Neprofitna stanovanja, zgrajena leta 2007, vključujejo 65 stanovanj različnih velikosti od garsonjer do 3,5-sobnih stanovanj. Značilna stanovanjska zasnova obsega »dnevni dek«, ki vključuje kuhinjo, jedilnico, dnevni prostor in dva balkona, ter »nočni dek« z eno ali dvema spalnicama, sanitarnimi prostori in hodnikom. Stanovanjske enote so umeščene okrog osrednjega stopnišča. Daljši stranici tlorsa značilne etaže linijske stavbe sta orientirani v smeri vzhod-zahod, kar vogalnim stanovanjem omogoča dvostransko orientacijo, medtem ko so ostala stanovanja enostransko orientirana. V stolpiču so vsa stanovanja vogalna in dvostransko orientirana. Nosilna konstrukcija je betonska, vključuje prefabricirane sanitarne kabine in inštalacijske bloke za kuhinje. Stanovanjska zazidava Poljane predstavlja značilen primer razvojne stopnje stanovanjske gradnje v obdobju pred nepremičninsko krizo leta 2008, v katerem so stanovanjski skladi v zavesti družbene odgovornosti močno vplivali na kakovost načrtovanja in graditve stanovanj.

All in all, the analysed building represents all the characteristics of post-war typified housing structure with an inflexible spatial and design concept, uniform layout solutions dictated by the lack of building materials and bathroom equipment, poor construction and finishing works, and a deficient public utility infrastructure [Pirkovič-Kocbek, 1982].

The second building, a residential block in the Jugomont housing estate, built in 1967 is a typical example of a construction with industrially prefabricated components. It represents the predominant typology of residential building in former Yugoslavia, built between 1960 and 1985 [Jovanović et al., 2012]. Prefabricated systems ensured a faster, cheaper and better quality of the construction forced by both investors and development contractors [Mercina, 2006]. We analysed a six-storey residential building with 70 dwellings differing in size, from studio flats to 2.5-room dwellings, with two internal staircases positioned in each floor. The floor-layouts are oriented in the east-west direction along the longer sides of the block, with the windows of the smaller dwellings facing one direction only, and the windows of the larger facing two directions. The small bathrooms have no windows (Figure 2). The construction system is based on the Jugomont concrete prefabricated elements, characterised by strictly separate load-bearing and non-load-bearing walls, while the cross-linking

load-bearing system, with a width of 372 cm, is represented by a central longitudinal wall [Mercina, 2006].

The prefabricated façade elements are made of concrete in combination with sandwich panels with sheet metal coating. In the Poljane housing estate, constructed in 2007, we analysed the dwellings in a linear residential block and in a point building, both connected by an underground parking garage. The buildings comprise all together 65 non-profit dwellings of different size, from studios to 3.5-room dwellings. The typical dwelling layout concept is based on zoning of functions divided in the 'living' area with kitchen, dining area, living area and balcony, and in the 'sleeping' area with one or two bedrooms, and a bathroom. In each floor, the dwellings are positioned around a central communication core. The longer sides of the linear building are oriented east-west, which means that the windows in corner dwellings are facing two directions, while the windows in other dwellings are facing only one direction. In the point building, all dwellings are of corner type and therefore, they have windows facing two directions (Figure 3). The load-bearing structure in concrete includes prefabricated sanitary units and installation blocks for kitchens. The Poljane housing estate is a typical example of a housing development before the economic crisis in 2008. At that time, the awareness of social

responsibility of public housing funds had a strong influence on the quality of urban and architectural design.

4.1. Characteristics and limits of testing the use value of dwellings in Slovenia

As already explained, in this paper we focused our research on the use value assessment at the level of individual dwelling, the most significant category of the UVAD method in view of renovation projects. Since the precondition for the UVAD assessment of individual dwellings is the compliance with minimum standards regarding the room size and furnishing, we first compared them with the Slovenian Rules on Minimum Technical Conditions for the Construction of Residential Buildings and Dwellings [2011].

We found that the essential difference between them is in the categorization of dwellings. In Slovenia, the minimum standards are based on the number of household members, while the UVAD ranks the dwellings into categories based on the number of rooms, thereby enabling their versatile use independently of the number of residents. In order to compare the minimum conditions of the UVAD with the Slovenian ones (Table 1), the minimum floor area of dwellings was determined by standards of the Rules on the Rental of Non-profit Dwellings [2004].

LEGEND:  UVAD minimum requirements
 Slovenian minimum requirements

Tabela 1: Primerjava minimalnih zahtev SVS z zahtevami Pravilnika o minimalnih tehničnih zahtevah za graditev stanovanjskih stavb in stanovanj.
Table 1: Comparison between minimum requirements of the UVAD and the Rules on Minimum Technical Conditions for the Construction of Residential Buildings and Dwellings.

NO. OF ROOMS IN THE DWELLING	1 (14m ²)	2 (14m ² +10m ²)	3 (2x14m ² +10m ²)	4 (2x14m ² +2x10m ²)
PLANNED NO. OF PERSONS IN THE DWELLING	1-2	3	4-5	6
MIN. NET RESIDENTIAL FLOOR AREA	30 m ² 1 person: over 20 m ² 2 persons: over 30 m ²	45 m ² over 45 m ²	60 m ² 4 persons: over 55 m ² 5 persons: over 65 m ²	80 m ² over 75 m ²
COMMUNICATIONS	at least 90 cm in width, with 120x120 cm of room in front of the doors at 1m in width			
NO. OF SEATS IN THE DINING AREA	2 160x160cm 2.5 m ² 1 person: 1 2 persons: 2	3 160x270cm 4.5 m ² 3	4 180x270cm 5 m ² 4 persons: 4 5 persons: 5	6 240x270cm 6.5 m ² 6
NUMBER OF KITCHEN ELEMENTS OCCUPYING 60X60 CM ON THE FLOOR	4.5 5 m ² 1 person: 2.7 2 persons: 5.0	4.5 5 m ² 5.7	5.5 6 m ² 4 persons: 6.3 5 persons: 7	5.5 6 m ² 7.3
STORAGE SPACE: NUMBER OF STORAGE UNITS OCCUPYING 60X60 CM ON THE FLOOR	2 - in communications or service areas 1 person: 2 2 persons: 4 anywhere in the dwelling	2 - in communications or service areas 6 anywhere in the dwelling	3 - in communications or service areas 4 persons: 8 5 persons: 10 anywhere in the dwelling	4 - in communications or service areas 12 anywhere in the dwelling
BATHROOMS	1 - min. area 3.8 m ² 1 - basin, tub/shower, toilet	1 - min. area 3.8 m ² 1 - basin, tub/shower 1 - basin, toilet	1 - min. area 3.8 m ² 4 persons: 1 - basin, tub/shower 1 - basin, toilet 5 persons: 1 - basin, tub/shower, toilet 1 - basin, toilet	1 - min. area 3.8 m ² 1 - min. area 2 m ² 1 - basin, tub/shower, toilet 1 - basin, toilet
PRIVATE OUTDOOR AREA	3 m ² no requirements	3 m ² no requirements	3 m ² no requirements	3 m ² no requirements

4.1. Značilnosti in omejitve preizkusa vrednotenja kakovosti stanovanj v slovenskih razmerah

Kot že navedeno, smo raziskavo omejili na segment vrednotenja uporabne vrednosti arhitekturnih rešitev na ravni posameznih stanovanj, ki po našem mnenju predstavlja najpomembnejšo skupino kazalnikov za ocenjevanje kakovosti obstoječih stanovanj za potrebe prenove. Ker je v Švici predpogoj za ocenjevanje stanovanj s SVS izpolnjevanje minimalnih pogojev glede velikosti in opremljenosti prostorov, smo le-te najprej primerjali z minimalnimi zahtevami, ki jih predpisuje Pravilnik o minimalnih tehničnih zahtevah za graditev stanovanjskih stavb in stanovanj [Ur. l. RS, 2011]. Ugotovljamo, da je bistvena razlika med švicarskimi in slovenskimi v tem, da so slovenska določila v zvezi z velikostjo stanovanja in prostorov v Sloveniji vezana na število oseb v gospodinjstvu, medtem ko je SVS v tem pogledu fleksibilnejši, saj določa velikost in opremljenost stanovanj glede na število sob ter s tem omogoča raznovrstno rabo stanovanj, neodvisno od števila stanovalcev. Za primerjavo minimalnih pogojev SVS z zahtevami Pravilnika o minimalnih tehničnih zahtevah za graditev stanovanjskih stavb in stanovanj (Tabela 1) smo minimalno velikost površin stanovanj določili na osnovi Pravilnika o dodeljevanju neprofitnih stanovanj v najem [Ur. l. RS, 2004]. Tak pristop je bil izvedljiv le pri manjših stanovanjih, pri večjih stanovanjih so razlike namreč prevelike in onemogočajo primerjavo: po slovenskem pravilniku se stanovanja, namenjena več kot šestim osebam, za vsako nadaljnjo osebo v gospodinjstvu povečajo za 6 m², po SVS pa vsak dodatni prostor narekuje povečanje skupne površine stanovanja za 20 m².

Primerjava minimalnih švicarskih in slovenskih določil pokaže največja odstopanja pri zahtevah o številu kopalnic, količini omar za shranjevanje in velikosti zunanjega bivalnega prostora. Slovenski pravilnik namreč ne vključuje minimalnih površin posameznih prostorov. V luči te ugotovitve ni presenetljivo, da obravnavana stanovanja po opremljenosti bistveno ne odstopajo od zahtev SVS, medtem ko se največje

razlike pojavijo zaradi premajhnih površin sob in kopalnic ter zunanjih površin. Glede na to, da so bila vsa stanovanja zgrajena pred sprejetjem Pravilnika o minimalnih tehničnih zahtevah za graditev stanovanjskih stavb in stanovanj [Ur. l. RS, 2011], je razumljivo, da nekatera med njimi ne dosegajo niti minimalnih zahtev slovenskega pravilnika, predvsem glede velikosti kopalnic. Prav dejstvo, da ocenjujemo že obstoječa stanovanja in ne načrtovanih novogradenj, je bilo razlog za to, da stanovanj, ki niso dosegala vseh minimalnih zahtev, nismo izključili, smo pa določene kazalnike glede na zaznane pomanjkljivosti ovrednotili nižje. Po tem, ko smo zbrali razpoložljive podatke, smo ugotovili, da razpolagamo s podatki za vrednotenje po desetih kazalnikih od enajstih v SVS, saj določenih podatkov za obe starejši zazidavi, Metalna in Jugomont, nismo uspeli pridobiti. V raziskavi smo tako ocenjevali uporabno vrednost stanovanj za vsako posamezno stanovanje po kriterijih desetih kazalnikov, ki je vključevalo 18 stanovanj v stanovanjski zazidavi Metalna, 70 stanovanj v stanovanjski zazidavi Jugomont ter 65 stanovanj v stanovanjski zazidavi Poljane, skupaj 153 stanovanj. Zatem smo sešteli vrednosti točk po posameznih kazalnikih za vsa stanovanja v večstanovanjski stavbi, skupno vrednost točk delili s številom stanovanj v stavbi ter tako pridobili primerjalne vrednosti posameznih kazalnikov za celotno stavbo kot značilno za vsako od treh stanovanjskih zazidav, predstavljenih v Sliki 7. Dodatna tabela posreduje informacije o posplošeni povprečni vrednosti na osnovi vsote desetih kazalnikov za posamezno stanovanjsko zazidavo.

4.2. Kazalniki in kriteriji ocenjevanja uporabne vrednosti stanovanj v treh stanovanjskih zazidavah

(1) *Površina stanovanja*. Kazalec temelji na predpostavki, da se z večanjem površine stanovanja povečajo možnosti načinov njegove uporabnosti, zaradi ekonomičnosti izrabe prostora pa je določena največja skupna površina stanovanja glede na število sob. Več točk stanovanjem prinaša večja višina in širina prostorov ter dodatni prostori.

Slika 4: Prikaz načina ocenjevanja kazalnika raznovrstne rabe prostorov v stanovanju soseske Jugomont. Lega stanovanja v tlorisu objekta je označena na Sliki 2.

Figure 4: Assessment of the multifunctionality of rooms in a Jugomont housing estate dwelling. The position of the dwelling in the buildings' floor plan is marked in Figure 2.



This approach was possible to apply only in the case of smaller dwellings since in larger dwellings the differences between both systems are too great. Namely, in accordance with Slovenian rules, the floor area in dwellings, intended for more than six persons, increases by 6 m² for every person, while the UVAD requires 20 m² floor area for every additional room.

The comparison of minimum between Swiss and Slovenian requirements reveals a divergence in the requirements regarding the number of bathrooms, the amount of storage closets and the size of the outdoor living area. Slovenian rules do not include standards on the size of individual spaces. In light of these findings, the evaluation of furnishings in dwellings did not significantly deviate from the minimum requirements of the UVAD, while in some dwellings the size of rooms, bathrooms and outdoor areas was too small. Since all of the analysed dwellings were built before the adoption of the Rules on Minimum Technical Conditions for the Construction of Residential Buildings and Dwellings, it is understandable that certain dwellings did not meet the minimum Slovenian requirements, mainly in regard to the size of bathrooms. As we assessed the existing dwellings and not the new ones, we decided not to exclude the dwellings which did not meet the minimum requirements, but rather to assess them with equivalently less points.

After examining the available data needed for the evaluation, we realised that could not obtain the necessary information regarding all the eleven

indicators for the older housing estates Metalna and Jugomont. Thus, we assessed the ten indicators for 18 dwellings in the Metalna housing estate, 70 dwellings in the Jugomont housing estate, and 65 dwellings in the Poljane housing estate. The UVAD was tested by the assessment of the indicators for individual dwelling. Then, we added up the points of dwellings in a building and divided the sum by the number of dwellings in order to obtain comparative values of ten indicators for analysed buildings presented as a table in the Figure 7. The additional table provides the information on the average values housing estates calculated as a sum of comparative values of assessed buildings.

4.2. The indicators and criteria to access the use value of dwellings in three housing estates

(1) *Dwelling floor area.* The indicator is based on the premise that a larger floor area increases the usability of dwelling. Simultaneously, the UVAD determines the maximum total dwelling floor area in relation to the number of rooms to ensure economic use of space. Additional points are attained for over-average room heights and widths, as well as for additional usable spaces. Considering these requirements, the dwellings in the Metalna housing estate received no points, as the total surface area is too large due to comparatively spacious rooms and dining areas. Similar results were attained by some of the larger dwellings in the Poljane housing estate. The majority of the dwellings in the Jugomont housing estate are

optimally-sized and therefore, they attained the highest number of points.

(2) *Size of the rooms and additional spaces.* Here, the assessment is based on the premise that larger rooms allow greater flexibility and usability for residents. Additional points are attained for a bigger floor area of one of the rooms or for a separate entrance hall. The dwelling also attains additional points for flexible spaces as lofts, studios etc. The dwellings in the Metalna housing estate attained the highest number of points due to the spacious rooms. The dwellings in the Poljane housing estate were similarly rated, while the dwellings in the Jugomont housing estate with smaller rooms attained the lowest number of points.

(3) *Multifunctionality of rooms.* The indicator emphasizes the dwellings adaptability by identifying rooms whose measures and proportions allow variety of usage. This is proofed by the number of possible ways of placing the floor area module of 14 m² in individual rooms (Figure 4). Additional points are attained for an extra floor area, for the exceptional width of the room, and for the orientation toward a less noisy outdoor areas, e.g. the courtyards. In this view, the dwellings in the Metalna housing estate attained the highest number of points, as the area module was possible to place in two rooms. The dwellings in the Poljane were also rated relatively high, while the dwellings in the Jugomont housing estate attained a lower number of points due to smaller floor areas and an unfavourable ratio between the sides of individual rooms in smaller apartments.

Slika 5: Prikaz načina ocenjevanja kazalnika raznovrstne opremljenosti sob v stanovanju stanovanjske zazidave Metalna. Vir: Nataša Šprah. Lega stanovanja v tlorisu objekta je označena na Sliki 1.

Figure 5: Assessment of possible room furnishing in a Metalna housing estate dwelling. The position of the dwelling in the buildings' floor plan is marked in Figure 1.



Glede na te zahteve vsa stanovanja v stanovanjski zazidavi Metalna ostanejo brez točk, saj so zaradi velikih sob in prostorne jedilnice prevelika. Podobno velja tudi za večja stanovanja v stanovanjski zazidavi Poljane. Večina stanovanj soseske Jugomont izkazuje optimalno velikost površin ter dosega najvišje število točk med stanovanjskimi zazidavami.

(2) *Velikost sob in dodatnih prostorov.* Vrednotenje po tem kriteriju se opira na predpostavko, da so večje sobe fleksibilnejše in s tem za stanovalce bolj uporabne. Dodatne točke stanovanje doseže z večjo površino ene izmed sob, z vetrolovom ali če spada med fleksibilne oblike bivališč (lofti, garsonjere ipd.) Največje število točk dosegajo stanovanja v stanovanjski zazidavi Metalna, podobno so ovrednotena tudi stanovanja v stanovanjski zazidavi Poljane, stanovanja v soseski Jugomont pa z manjšimi površinami sob dosegaajo najnižje število točk.

(3) *Raznovrstna raba prostorov.* Pri tem kazalcu je izpostavljena prilagodljivost stanovanja, saj sobe vrednotimo glede uporabnosti za različne namene, ki daje prednost prostorom, ki po svoji površini in razmerjih stranic omogočajo fleksibilno in adaptabilno rabo. Preverjamo jo z možnostjo umestitve modula površine 14 m² v posamezne prostore (Slika 4). Dodatne točke prinaša dodatna površina v sobi, večja širina prostorov in orientacija na manj hrupen zunanji prostor, na primer na dvorišče. Po tem kriteriju stanovanja v stanovanjski zazidavi Metalna dosegaajo največje možno število točk, saj je modul mogoče umestiti v obe sobi. Tudi stanovanja v stanovanjski zazidavi Poljane so visoko ovrednotena, medtem ko stanovanja v soseski Jugomont zaradi manjših tlorisnih površin in neugodnega razmerja stranic posameznih sob v manjših stanovanjih dosegaajo manjše število točk.

(4) *Opremljenost sob.* Pri kazalcu opremljenosti so merodajni velikost in mere stranic ter položaja vhoda in oken, ki omogočajo različne možnosti opreme in uporabe sobe. Za vrednotenje preverjamo število možnih umestitev modula enega ali dveh ležišč (Slika 5).

V sobah površine nad 12 m² smo preverjali umestitve dvojnega oz. dveh

enojnih ležišč, v sobah velikosti med 10 in 12 m² pa enojnega ležišča. Dodatne točke prinaša možnost umestitve dvojnega ležišča v več kot samo en prostor ter dodaten prostor ob ležišču in zlasti kadar omogoča obračanje invalidskega vozička. Najvišje število točk dosegaajo stanovanja v stanovanjski zazidavi Metalna, saj je v prostorne sobe možno umestiti več modulov dveh ležišč. Tudi stanovanja v stanovanjski zazidavi Poljane dosegaajo veliko število točk na račun velikih površin sob in ugodnih razmerij stranic sob ter primerne razporeditve okenskih odprtin. Najnižje število točk spet dosega stanovanjska soseska Jugomont.

(5) *Kubinja in jedilnica.* Kazalec za ta dva stanovanjska prostora vrednoti možnosti povezave med jedilnim prostorom in kuhinjo, naravno osvetlitev in naravno prezračevanje kuhinje, postavitev dodatnih sedišč v jedilnici ter možnosti postavitve jedilnega kota/jedilnice v več kot en prostor. Najnižje število točk dosegaajo stanovanja v stanovanjski zazidavi Jugomont, kjer v jedilnici ni možno umestiti dodatnih stolov, kuhinje pa v večini stanovanj niso naravno osvetljene. Enako velja tudi za kuhinje v stanovanjih v stanovanjski zazidavi Poljane, ki pa v večjih stanovanjih zaradi velike površine jedilnic in možnosti postavitve jedilnice v dodatni prostor prinašajo stanovanjem dodatne točke. Stanovanja v stanovanjski zazidavi Metalna z direktno osvetljenimi kuhinjami in velikimi površinami jedilnic dosegaajo najvišje vrednosti.

(6) *Kopalnice.* Pri tem kazalcu je pomembno število elementov kopalniške opreme. Dodatne točke prinašajo umestitev oken v sanitarne prostore in možnost uporabe kopalnice za invalide. Ugotavljamo, da število elementov opreme v vseh stanovanjih ustreza, kar pa ne velja za velikost površin sanitarnih prostorov. Kopalnice v stanovanjih v soseski Jugomont, kot tudi kopalnice v večini stanovanj v stanovanjski zazidavi Poljane, so namreč manjše od zahtevanih. Izjema so kopalnice v stanovanjih, namenjenih gibalno oviranim osebam, ki so primerne velikosti. Enako velja tudi za kopalnice v stanovanjih v stanovanjski zazidavi Metalna, ki z naravno osvetlitvijo kopalnic dosegaajo najvišjo vrednost točk.



Slika 6: Prikaz načina ocenjevanja kazalnika prilagodljivosti prostorov v stanovanju stanovanjske zazidave Poljane. Lega stanovanja v tlorisu objekta je prikazana na Sliki 3.

Figure 6: Assessment of adaptability of rooms in a dwelling in the Poljane housing estate. The position of the dwelling in the buildings' floor plan is marked in Figure 3.

4) *Room furnishings.* Here, room dimensions and the positioning of the entrance and the windows, allowing different furnishing and usability of the rooms, are appraised. This is accomplished by counting the number of possible ways of placing a floor area module for one or two beds (Figure 5). We counted possible ways of placing a double bed or two single beds in rooms larger than 12 m² and of a single bed in rooms between 10 and 12 m². Additionally, the possible ways of placing a double bed in more than one room and an additional space for a wheelchair next to the bed are counted. The dwellings in the Metalna housing estate attained the highest number of points, as the rooms allowed the placement of several modules of two beds. The dwellings in the Poljane housing estate also attained a high number of points because of large rooms, favourable ratios between the sides of rooms and appropriate positioning of windows. Again, the dwellings in the Jugomont housing estate attained the lowest number of points.

(5) *Kitchen and dining area.* The indicator evaluates the possible ways to connect the dining area with the kitchen, the daylighting and ventilation of the kitchen, the possible placing of additional chairs in the dining area, and the possibility of placing the dining area in more than one room. The dwellings in the Jugomont housing estate attained the lowest number of points, as there was no space for additional chairs in the dining areas and the kitchens have no windows. The latter also applies to kitchens of the dwellings in the Poljane housing estate which, however, attained additional

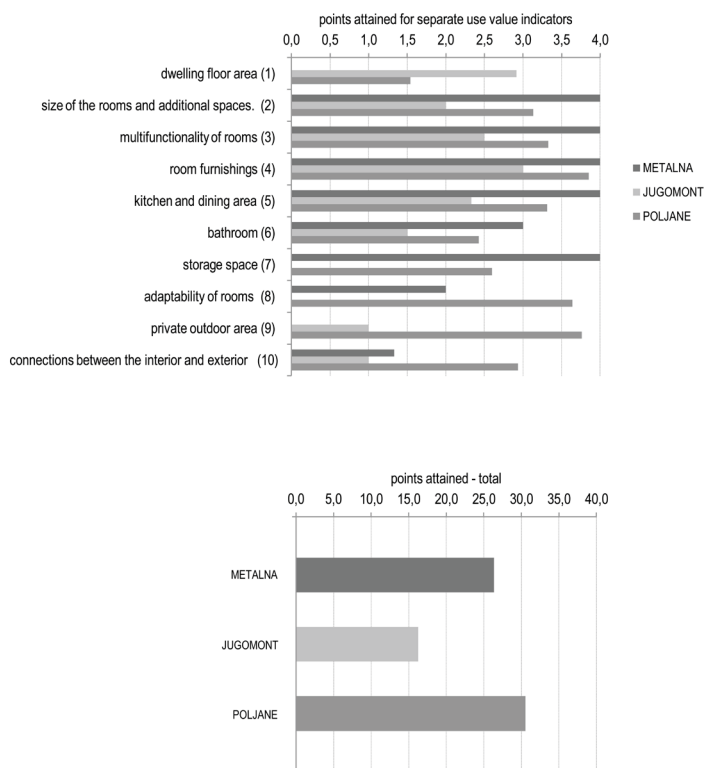
points for large dining areas and, in larger dwellings, for the possibility of placing the dining area in an additional room. The dwellings in the Metalna housing estate attained the highest number of points because of kitchen windows and large dining areas.

(6) *Bathroom.* Here, appropriate sanitary equipment in bathrooms is evaluated. Additional points are attained for bathroom windows and for bathrooms suitable for disabled persons. While the sanitary equipment in bathrooms was appropriate in all dwellings, the size of most of the bathrooms did not meet the minimum UVAD requirements. The bathrooms in the Jugomont housing estate and in the majority of dwellings in the Poljane housing estate are smaller than required, with the only exception of dwellings for disabled persons on the ground floor. Since bathrooms in the dwellings in the Metalna housing estate have windows and are large enough, this estate attained the highest points.

(7) *Storage space.* The indicator investigates the possibilities of placement of additional storage units in spaces, whose primary function is not 'living', such as in kitchens, bathrooms, pantries, and corridors. It also assesses the number of possible ways of placing a basic module of a closet measuring 60x60x180 cm. In view of this, the built-in closets, pantries, and outdoor storage rooms bring additional points. The dwellings in the Jugomont housing estate did not achieve points, since narrow corridors, and small floor areas of kitchens and bathrooms do not allow the fitting of additional closets. On the other hand, the dwellings in the Metalna housing estate with its

spacious corridors, bathrooms, kitchens and pantries attained the highest number of points. Due to wide corridors, the dwellings in the Poljane housing estate attained a relatively high number of points.

(8) *Adaptability of rooms.* The indicator highlights the ability of the dwelling space adapted in a simple way adapted to the changeable needs of residents. It relates to the number of non-load-bearing walls that can be easily removed, and the possibility to install additional walls to create a new room with the floor area of at least 10 m², with daylight and natural ventilation. Additional points are attained if the primary construction system (load-bearing walls), the secondary system (partitions), and the furnishing are structurally separated. The possibility of installing movable wall elements, including sliding, folding or double doors to enable the connection or separation of rooms is also evaluated. Additionally, the rooms with the possibility to be adjoined to the neighbouring dwellings also received points. The dwellings in the Jugomont housing estate did not attain points, as the walls between rooms are load-bearing and cannot be easily removed, and a subdivision of small rooms would have no effect. On the contrary, the rooms in the Metalna housing estate dwellings were easily joined to each other, however, in rooms no new partitions were possible to install. The dwellings in the Poljane housing estate attained the highest points, since the non-load-bearing walls can be easily removed, and, in some dwellings within the 'living' area new rooms with a floor area of a minimum of 10 m² with a window were possible to arrange (Figure 6).



Slika 7: Prikaz načina ocenjevanja kazalnika prilagodljivosti prostorov v stanovanju stanovanjske zazidave Poljane.
Figure 7: Assessment of adaptability of rooms in a dwelling in the Poljane housing estate.

(7) *Prostori za shranjevanje.* Posebnost kazalca je v vrednotenju možnosti dodatne opreme za shranjevanje v prostorih, kot so kuhinja, kopalnica, shramba in hodnik, ki niso v prvi vrsti namenjeni bivanju. Pri tem vrednotimo možnosti umestitve osnovnega modula omare 60x60x180 cm. Dodatne točke prinašajo možnosti vgradnih omar in shramb ter prostori za shranjevanje na zunanjih površinah. Po tem kazalcu stanovanja v soseski Jugomont ne dosegajo točk, saj ozki hodniki ter majhne površine kuhinj in kopalnic ne omogočajo postavitve dodatnih omar. Nasprotno pa stanovanja v stanovanjski zazidavi Metalna s prostornimi hodniki, kopalnicami, kuhinjami in shrambami dosegajo najvišje vrednosti točk, ki se jim po zaslugi širokih hodnikov približajo vrednosti stanovanj v stanovanjski zazidavi Poljane.

(8) *Prilagodljivost prostorov.* Kazalec izpostavlja hitro prilagodljivost spreminjajočim se potrebam stanovalcev. Določila se nanašajo na število nenosilnih sten, ki jih je možno brez težav odstraniti, možnost postavitve dodatnih sten, pri čemer mora novonastali prostor imeti površino najmanj 10 m², naravno

osvetlitev in prezračevanje. Pomembna je strukturna ločitev primarnega konstrukcijskega sistema nosilnih sten od sekundarnega sistema predelnih sten in opreme. Upošteva se tudi možnost postavitve premičnih elementov, kot so drsna, z gibna ali dvojna vrata, ki omogočajo takojšnjo povezavo ali ločitev dveh prostorov. Prav tako se vrednotijo sobe, ki jih je mogoče priključiti sosednjemu stanovanju. Ugotavljamo, da stanovanja v soseski Jugomont po tem kazalcu ostajajo brez točk, saj so vsi ločilni zidovi med sobami nosilni in jih je težko odstraniti, naknadna delitev majhnih površin prostorov pa ni smiselna. V stanovanjih v stanovanjski zazidavi Metalna je, nasprotno, možno na enostavni način združiti sobi, vendar postavitve novih predelnih sten v sobah ni možna, saj novonastali prostori ne bi dosegli zahtevane površine 10 m². Najvišjo vrednost dosegajo stanovanja v stanovanjski zazidavi Poljane, kjer je možno enostavno odstraniti nenosilne zidove med sobami, v bivalnem prostoru nekaterih stanovanj pa oddeliti prostor z oknom velikosti najmanj 10 m² (Slika 6).

(9) *Zasebni zunanji prostor.* Po tem

kazalcu vsakemu stanovanju pripada zasebni zunanji prostor, katerega najmanjša velikost je odvisna od števila sob v stanovanju. Višje so vrednotene zunanje površine, ki so umeščene na manj hrupni strani zazidave, dostopne iz dveh ali več prostorov ter zaščitene pred pogledi in vremenskimi vplivi, kot jih predstavljajo (lože ipd.). Stanovanja v stanovanjski zazidavi Metalna so zaradi pomanjkanja zasebnih zunanjih prostorov v pritličnih stanovanjih in premajhnih površin balkonov glede na velikost stanovanj v nadstropjih ostala brez točk. V soseski Jugomont so balkoni samo pri večjih stanovanjih, različno velika stanovanja v stanovanjski zazidavi Poljane pa glede na navedena določila kljub enako velikim balkonom/loggiam dosegajo različne vrednosti točk.

(10) *Prehodi med notranjostjo in zunanjostjo.* Po tem kazalcu vrednotimo vizualno in fizično obliko povezave notranjega prostora stanovanja z zunanjim, ki vključuje orientacijo oken in kakovost pogledov, zimski vrt in vetrolov ter čim širši prehod v zunanji bivalni prostor in možnost zapiranja s pomičnimi elementi. Dodatne točke prinašajo odprtine v višini prostora. V osnovi ugotavljamo, da stanovanja v vseh treh zazidavah nimajo prostorov, v katerih so okna, ki bi bila orientirana proti severu. Najvišjo vrednost po tem kriteriju dosegajo stanovanja v stanovanjski zazidavi Poljane, ki razpolagajo s prostori z različno orientiranimi okni, kar velja tudi za določena stanovanja v stanovanjski zazidavi Metalna. V stanovanjski soseski Jugomont nobeden izmed prostorov ne razpolaga z različno orientiranimi okni, kar je tem stanovanjem pri zadnjem kriteriju prineslo najnižje število točk.

Skupni rezultati ocenjevanja uporabne vrednosti stanovanj po desetih kazalnikih v treh stanovanjskih zazidavah izkazujejo velike razlike med njimi (Slika 7). Ugotavljamo, da stanovanja v stanovanjskih zazidavah Metalna in Jugomont kar po dveh različnih kazalnikih ne dosegajo nobenih točk. Tako so stanovanja v zazidavi Metalna ostala brez točk pri kazalnikih površine stanovanj (1) zaradi prevelike površine in pri zasebnih zunanjih prostorih (9), saj so le-ti premajhni oziroma neobstoječi.

(9) *Private outdoor area.* In accordance with this indicator, every dwelling should have a private outdoor area. The number of points attained depends on the size of the private outdoor area in correlation to the floor area of the dwelling. Additional points are given for the outdoor areas on the less noisy side of the estate, accessible from two or more rooms and protected from view (e.g. loggias). Due to the lack of private outdoor areas on the ground floor and to the insufficient size of balconies on the first and the second floor, the dwellings in the Metalna housing estate did not attain any points. In the Jugomont housing estate, only larger dwellings have balconies, while in the Poljane housing estate due to different size of outdoor floor areas the dwellings with equally sized loggias/balconies attained a different number of points.

(10) *Connections between interior and exterior.* This indicator assesses the visual and physical form of the connection between the interior and the exterior, including the sun orientation of windows and the quality of views, a greenhouse and the size of the physical connection to the outdoor living area. Room-high windows bring additional points. We concluded that the dwellings in all three housing estates generally do not have windows oriented to the north. The dwellings in the Poljane housing estate attained the highest number of points due to the windows facing in different directions, which was also the case in the corner dwellings in the Metalna housing estate. As all rooms in the Jugomont housing estate have windows facing only one direction, these dwellings attained the lowest number of points.

A comparison of the use value of dwellings in three housing estates assessed by ten indicators identified significant differences between them (Figure 7). The dwellings in the housing estates Metalna and Jugomont did not attain any points for two indicators, in the Metalna housing estate for the indicator according to the dwelling floor area because of their unfavourable spaciousness (1), and for private outdoor area that is too small or even non-existent (9). The lack of storage space (7) proved to be a deficiency of dwellings in the Jugomont housing estate, whose rigid construction system with minimum dimensions did not

enable any adaptability of rooms (8). Despite the low number of points for most indicators, the dwellings in the Jugomont housing estate received a surprisingly high number of points in regard to the indicator of the floor area of the dwellings (1), which can be explained by the fact that while limiting the size of the dwelling for reasons of economy, this indicator serves as a counterweight to the others. Extremely spacious dwellings in the Metalna housing estate are the only ones to attain the highest number of points for as many as six indicators. This is due to the large size of rooms (2) which enabled multifunctionality (3) and a variety of possible furnishing (4). The maximum number of points was granted to spacious kitchens and dining areas with daylight (5) and the diverse possibilities of storage placement (7). The dwellings in the Poljane housing estate attained points for all indicators, ranging from a relatively low number of points for indicators of surface area (1), an average number of points for the connections between the interior and exterior (10), bathroom (6), storage space (7), size of rooms and additional spaces (2), multi-functionality of rooms (3), kitchen and dining area (5), to the highest number of points attained for the adaptability of rooms (8), the size of private outdoor area (9), and room furnishings (4). The final presentation of the average use values shows a noticeably low value for dwellings in the Jugomont housing estate. We estimate that the reason for this is a general inflexibility in the use of dwellings and the minimum size of floor areas mainly due to the technology of prefabricated concrete components and rigid construction grids that do not allow any subsequent joining and division of rooms. The use value of dwellings in the Metalna housing estate was assessed higher, particularly due to the timelessly universal conception of dwellings' layouts with relatively large rooms linked by a central corridor in each floor. Conventional construction in brick masonry is also a vital advantage that allows adaptability of the interior layout in accordance with the changing needs of residents. The dwellings in the Poljane housing estate attained the highest average use value due to the dwellings' layout concepts and the construction system representing a mixture of the other two housing estates characteristics.

Kazalnik prostorov za shranjevanje (7) se pokaže kot največja pomanjkljivost stanovanj v zazidavi Jugomont, ki obenem zaradi rigidnega konstrukcijskega sistema minimalnih razponov ne prinašajo točk pri kazalniku prilagodljivosti zasebnega prostora (8). Kljub nizki vrednosti točk pri večini ostalih kazalnikov stanovanja v stanovanjski zazidavi Jugomont dosegajo nadpovprečne vrednosti pri kazalniku površine stanovanja (1), kar je mogoče razložiti z dejstvom, da ta kriterij z zgornjo omejitvijo velikosti zaradi ekonomičnosti služi kot protiutež vsem ostalim kazalcem.

Tako je razumljivo, da (pre) prostorna stanovanja v stanovanjski zazidavi Metalna kot edina po kar šestih kazalnikih dosegajo najvišje vrednosti. Točke prinašajo kazalniki ocenjevanja prostornosti sob (2), raznovrstne rabe prostorov (3) in opremljenosti sob (4). Najvišje so ocenjene tudi prostorni in naravno osvetljeni kuhinja in jedilnica (5) in številne možnosti glede opremljenosti prostorov za shranjevanje (7). Visoka uporabna vrednost stanovanj v stanovanjski zazidavi Poljane je razvidna v vrednotenju vseh kazalnikov, ki izrazito odstopajo v številu točk. Lete segajo od relativno nizke vrednosti za kazalnik površine stanovanj (1) in naraščajo pri kazalnikih ocenjevanja možnih prehodov iz notranjosti v zunanost (10), sanitarnih prostorov (6), prostorov za shranjevanje (7) ter velikosti sob in dodatnih prostorov (2), možnosti raznovrstne rabe prostorov (3), kuhinje in jedilnice (5), do najvišjih vrednosti za kazalnike ocenjevanja prilagodljivosti zasebnega prostora (8), zasebnih zunanjih prostorov (9) in opremljenosti sob (4).

Prikaz povprečnih vrednosti vseh desetih ocenjevanih kazalnikov uporabne vrednosti (Slika 7) pokaže opazno najnižje vrednosti za stanovanja stanovanjske zazidave Jugomont. Razloge gre iskati v splošni nefleksibilnosti stanovanjskih zasnov in minimalnih površin posameznih prostorov, ki so v največji meri posledica tehnologije prefabricirane montažne gradnje v togem konstrukcijskem rastru v betonski izvedbi, ki ne dopušča naknadnega združevanja, pa tudi

delitve posameznih prostorov.

Uporabna vrednost stanovanj v stanovanjski zazidavi Metalna je ovrednotena veliko višje po zaslugi univerzalno zasnovane tlorisne zasnove stanovanj z velikimi sobami, nanizanimi ob centralnem hodniku. Klasična opečna gradnja prav tako predstavlja bistveno prednost z vidika možnosti prilagajanja notranje ureditve spreminjajočim se potrebam stanovalcev.

Najvišjo povprečno uporabno vrednost dosegajo stanovanja v stanovanjski zazidavi Poljane, ki v tlorisnih zasnovah in konstrukcijskem sistemu predstavlja določeno mešanico ostalih dveh zazidav. Tlorisna zasnova posameznih etaž je v primerjavi s stanovanjsko zazidavo Metalna racionalnejša, prefabricirane sanitarne enote, sicer brez naravne svetlobe, pa omogočajo hitrejšo gradnjo. Relativno velike sobe ločujejo nenosilne predelne stene, ki omogočajo združevanje v večje prostore, pa tudi določene delitve v manjše.

5. Diskusija in sklep

V zadnjih desetletjih se zaradi zmanjšanja dejavnosti na področju stanovanjske gradnje in posledično pomanjkanja stanovanj v Sloveniji zmanjšuje tudi vloga arhitekturnega načrtovanja stanovanj in s tem posredni učinki na kakovost bivanja. Z namenom, da bi z vidika trajnostnih načel osvetlili sedanje razmere na področju stanovanjske kakovosti in z njo povezane stanovanjske politike, katere tradicionalna vloga se zrcali v oskrbi stanovanj za državljane v določenem sistemskem okviru financiranja, smo za potrebe prispevka o vrednotenju kakovosti stanovanj najprej analizirali obstoječe zakonodajne in strateške dokumente.

V zavesti, da številna stanovanja v večstanovanjskih zazidavah, na katere smo se osredotočili, več ne odgovarjajo sodobnim potrebam in zahtevam sedanjih uporabnikov, smo proučili nekatere nove standarde kakovosti arhitekturnega načrtovanja, ki se odražajo v orodjih vrednotenja kakovosti, uporabnih v procesih odločanja zlasti na področju stanovanjske prenove, pa tudi novogradenj.

In comparison to the Metalna housing estate, the floor layout concept of the Poljane housing estate presents a more rational solution. However, the windowless prefabricated concrete sanitary units enabled rapid construction. The relatively large rooms separated by non-load-bearing partition walls can be easily joined.

5. Discussion and conclusion

In recent decades, in Slovenia the shortage of housing construction the discussion addressing the impacts of architectural design on housing quality in theory and practice reduces the importance of the discussion. In view of the Slovenian housing policy, whose has traditional role was the housing provision in frame of an appropriate system, we analysed applicable regulations and standards related to housing quality. Being conscious about current conditions, we researched new incentives of architectural design standards that promote the quality dwellings that meet the needs of current residents. The aim of the paper was to consider different approaches to the assessment of housing quality with primary focus on the usability of dwellings. The study of literature on methods and tools to evaluate the quality of dwellings from different viewpoints was concentrated on the endeavours to find an appropriate tool to be proofed for Slovenian conditions. The decision to apply the predominantly numerical Swiss method UVAD was based on its feature of the housing quality assessment, exclusively from the viewpoint of use value for residents and, additionally, on the experience of the UVAD tool conducted for housing estates in the neighbouring city of Graz. Our intention was to test the method by evaluating the dwellings, characteristic for multi-family residential construction in the city of Maribor, by taking into account the housing typologies of the housing estates Metalna, Jugomont, and Poljane. After checking the available data we decided to investigate only one category of the UVAD that determines the criteria of ten indicators at the level of individual dwellings. Since the relevant Slovenian documents do not include specific requirements of housing quality we first carried out preliminary analyses of comparable Swiss standards and Slovenian rules

and regulations. The analyses acquired a variety of points in regard to different indicators for assessing the dwellings and buildings. The results based on the generalized average values for housing estates distinctly differ from each other. Though expected to a certain extent, they indicate specific features of housing typologies in the past decades. However, it has to be mentioned that they do not directly depend on the age of buildings but are predominantly related to economic, social, and technical conditions of housing policies at one side, and the availability of the construction industry. The idea to test the Swiss tool UVAD for Slovenian conditions has proved as applicable. In comments concerning each indicator we exposed the main characteristics of dwellings in order to stress the advantages and weaknesses of analysed housing typologies. Our intention was also to highlight decisive shortcomings in view of possible recommendations. First, it may be pointed out that the comparison between Swiss and Slovenian requirements has opened several unclear definitions. Accordingly, a special attention has to be paid to the criterion of available floor area of rooms and associated private outdoor areas, as well as to the size of bathrooms, which in some dwellings did not achieve the minimum of requirements. Second, we recommend the issues addressing the flexibility and the adaptability of dwelling space as a norm, inclusively the adaptability for the disabled and ageing population for entire housing fond, followed by the requirement to enable the joining and division of rooms in accordance to the changes of households during the entire dwellings' lifetime. Last but not least, we recommend specific indicators with detailed criteria on house furnishing and availability of storerooms which have significant impacts on housing quality in everyday life. All in all, the results of the use value testing of dwellings in Maribor demonstrate the need to raise the quality of existing housing fond in Slovenia. Promoting the aspects of social sustainability, we recommend the decision makers, politicians and designers to introduce an innovative quality assessment tool applicable in planning processes of building renovation and new housing developments.

Cilj prispevka je bil izbrati iz nabora metod in orodij, predstavljenih v literaturi in praksi, takšen sistem vrednotenja kakovosti stanovanj, ki bo primarno osredotočen na stanovalce in bo uporaben tudi v slovenskih razmerah.

Odločitev za preučitev švicarskega sistema vrednotenja stanovanj (SVS) je bila osnovana na objektivno merljivih kazalnikih za ocenjevanje kakovosti stanovanj, ki je zasnovan izključno z vidika uporabnika. Dodaten razlog so bile izkušnje z uporabo SVS v raziskavi obstoječih stanovanjskih zazidav, zgrajenih v preteklih desetletjih v avstrijskem Gradcu, ki jih ocenjujemo kot tipološko sorodne slovenskim. Namen raziskave, ki je temeljila na obstoječi študiji ene od avtoric, je bil testirati orodje SVS za ocenjevanje uporabne vrednosti stanovanj v treh stanovanjskih zazidavah v Mariboru (Metalna, Jugomont, Poljane), ki jih zaznamujejo značilne arhitekturne in konstrukcijske rešitve iz treh različnih obdobj organizirane stanovanjske gradnje v Sloveniji. Na osnovi pridobljenih podatkov smo se omejili na raven ocenjevanja stanovanj na osnovi desetih kazalnikov, ki smo ga izvedli z grafičnimi in numeričnimi metodami analize tlorisnih zasnov. Ker slovenski dokumenti ne vsebujejo specifičnih zahtev z vidika uporabne vrednosti, smo predhodno pregledali možne primerljivosti švicarskih in slovenskih določil na področju arhitekturnega načrtovanja stanovanj.

V sklopu raziskave so bili pridobljeni določeni rezultati z vidika uporabne vrednosti, pridobljeni na osnovi ocenjevanja po kriterijih posameznih kazalnikov, pri čemer, nasprotno od pričakovanj, ugotavljamo, da uporabna vrednost ni neposredno odvisna od starosti stanovanj. Razloge za velike razlike med posameznimi stanovanjskimi zazidavami prepoznavamo v ekonomskem in družbenem okolju, ki odraža tudi vplive takrat veljavne stanovanjske politike. Ugotavljamo, da je nizka uporabna vrednost v največji meri posledica minimiziranih stanovanjskih določil in z njimi povezane racionalizacije načrtovanja stanovanj, najizrazitejše v 60-ih in 70-ih letih prejšnjega stoletja, ki je narekovala toge stanovanjske tlorise,

omejene praviloma na en način rabe.

Preizkus vrednotenja kakovosti stanovanj z uporabo švicarske metode SVS je pokazal njeno uporabnost tudi v slovenskih razmerah. V komentarjih posameznih kazalnikov izpostavljamo prednosti in slabosti posameznih arhitekturnih rešitev, ki smo jih ocenili po specifičnih kriterijih posameznih kazalnikov z namenom, da jih prepoznamo tudi kot možna priporočila v različnih procesih načrtovanja in prenove. Primerjava slovenskih in švicarskih minimalnih zahtev ter priporočil je pokazala na različne definicije pri nekaterih določilih. Zlasti to velja za primerno velikost sob in zunanjih ter sanitarnih prostorov, ki ponekod niso zadostovali zahtevam. Naslednje generalno priporočilo velja vključevanju fleksibilnosti in adaptabilnosti stanovanjskih prostorov kot osnovni zahtevi uporabne vrednosti s poudarkom na možnostih prilagajanja starejšim in gibalno oviranim, kar naj velja normativno za vsa stanovanja. V stanovanjih se visoko cenijo tudi možnosti raznovrstnega povezovanja in delitve prostorov, ki sledijo spremembah struktur in navad uporabnikov v različnih življenjskih obdobjih. Ne nazadnje so izjemno koristna tudi izrazito praktična priporočila, kot so dodatne možnosti za opremljanje in shranjevanje izven konvencionalnih načinov v stanovanjskih zasnovah ipd.

Sklepne ugotovitve ocenjevanja uporabne vrednosti stanovanj z vidika stanovalca, ki smo jih pridobili s testiranjem vrednotenja kakovosti stanovanj v treh soseskah v Mariboru, lahko strnemo v spoznanju, da se kažejo veliki potenciali za dvig kakovosti, zlasti obstoječega stanovanjskega fonda, ki jih je možno izkoristiti s celostnim pristopom k načrtovanju in prenovi stanovanj po načelih družbene trajnosti. V procese odločanja, načrtovanja, gradnje in vzdrževanja stanovanjskih zazidav uvaja pojem kakovosti stanovanjskih zasnov, ki predstavlja vzpodbudo za oblikovanje novih orodij, namenjenih odločevalcem, politikom, načrtovalcem in uporabnikom.

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