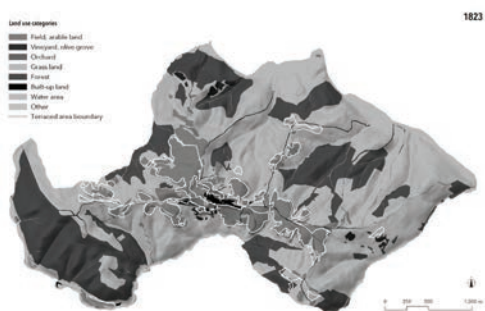
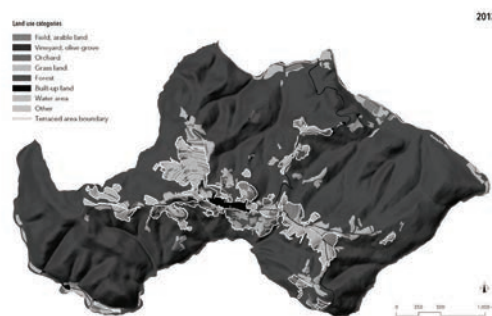




Slika 7: Raba tal v naselju Ostrožno Brdo v letu 1823 (Arhiv Republike Slovenije, GURS).
Figure 7: Land use in the village Ostrožno Brdo, 1823 (Slovenian National Archive, GURS).



Slika 8: Raba tal v naselju Ostrožno Brdo v letu 2012 (Arhiv Republike Slovenije, GURS).
Figure 8: Land use in the village Ostrožno Brdo, 2012 (Slovenian National Archive, GURS).

Martina Zbašnik-Senegačnik METODE IN ORODJA ZA OCENJEVANJE TRAJNOSTNIH ENODRUŽINSKIH HIŠ

METHODS AND TOOLS FOR EVALUATION OF SUSTAINABLE SINGLE-FAMILY HOUSES

POVZETEK

Stavbe imajo negativne vplive na okolje v celotnem življenjskem ciklusu, torej od faze pridobivanja surovin ter proizvodnje gradiv in polizdelkov, do prodaje, vgradnje in uporabe do končne faze odstranitve, ko stavba odsluži svojemu namenu. Trenutna zakonodaja omejuje v glavnem rabo energije in emisije v obratovanju, manj pa ostale parametre, ki prav tako definirajo zasnovo sodobne trajnostne stavbe. Preverjanje trajnostne zasnove stavbe je smiselno že v začetnih fazah projektiranja, ko je še mogoče vplivati na rezultat.

V raziskavi je bila med drugim izdelana enostavna metoda, s pomočjo katere se z izbranimi petimi indikatorji ocenjuje kakovost trajnostnih zasnov: energijska učinkovitost, raba primarne energije, emisije CO₂, stroški ter na doseženo bivalno ugodje. Ocenjevanje s pomočjo indikatorjev poteka po treh načinih objektivnega in subjektivnega ponderiranja, s čimer se v skupno oceno vključijo vidiki neodvisnosti presojevalca ter vidiki nacionalnih in uporabniških zahtev.

Na osnovi rezultatov, zbranih v raziskavi na velikem statističnem vzorcu enodružinskih pasivnih hiš, je bil izdelan tudi računski model za ocenjevanje energijskih tokov v stavba. V praksi se uporablja veliko število računskih orodij za izračunavanje energijskih tokov. Njihova uporaba prinaša natančne rezultate, zahteva pa vnos velikega števila parametrov v zapletene računske postopke. Vrednost teh parametrov je znana šele na koncu načrtovalskega procesa. Razvita je bila enostavna metoda za ocenjevanje energijske učinkovitosti enodružinske hiše, ki je vključevala čim manjše število parametrov in enostavne računske postopke.

UPORABNOST REZULTATOV

Sodobna stavba mora torej ustrezati številnim zahtevam, zato pa mora biti ustrezno zasnovana. Z enostavnimi metodami in orodji se predvsem zagotovi, da jo uporabijo projektanti v fazi idejnega načrtovanja in s tem takoj na začetku načrtovanja poiščejo najoptimalnejšo zasnovo stavbe.

KLJUČNE BESEDE

energijska učinkovitost, trajnostni koncept, enodružinska hiša, enostavna metoda, enostavno orodje

SUMMARY

Buildings have negative effects on the environment throughout their life cycle, i.e. from the phase of obtaining raw materials and manufacturing materials and components up to the sale, building and use through the final phase of removal when the building is decommissioned. In general, current legislation limits both the use of energy and the emissions allowed during operation, but do not limit the other parameters that define the design of contemporary sustainable buildings. Determining the sustainability of buildings should take place in the planning phase of the project, when it is still possible to influence the outcome.

In a research study, a simplified method using five chosen indicators was elaborated to evaluate the level of sustainability. The areas to be evaluated are energy efficiency, use of primary energy, CO₂ emissions, costs, and the level of living comfort achieved. The evaluation using these indicators is carried out using three subjective and objective weighting methods, such that the final evaluation includes the viewpoints of an independent evaluator and the points of view of both the user and the state.

On the basis of results obtained in a research study conducted on a large statistical sample of Slovenian single-family houses the calculation model was created, which calculate the energy flows in buildings. In practice a number of calculation tools are used to calculate annual energy flows. Their use yields accurate results but requires the input of a large number of parameters in the complex calculation procedures involved. The values of these parameters are usually known only after the planning process of a building has been completed. A simplified evaluation method for energy efficiency in single-family houses has been developed with the aim of using as few building parameters as possible with the simplest calculation procedures possible.

ISSUES AND THEIR SIGNIFICANCE

A contemporary building must answer to a number of demands and therefore must be designed accordingly. The simplicity of the new

REZULTATI

Izvirni znanstveni članki

PRAZNIK, Miha, BUTALA, Vincenc, ZBAŠNIK-SENEGAČNIK, Martina. Simplified evaluation method for energy efficiency in single-family houses using key quality parameters. *Energy and buildings*, ISSN 0378-7788. [Print ed.], Dec. 2013, vol. 67, str. 489-499.

PRAZNIK, Miha, BUTALA, Vincenc, ZBAŠNIK-SENEGAČNIK, Martina. A simple method for evaluating the sustainable design of energy efficient family houses. *Strojniški vestnik*, ISSN 0039-2480, Jun. 2014, vol. 60, no. 6, str. 425-436

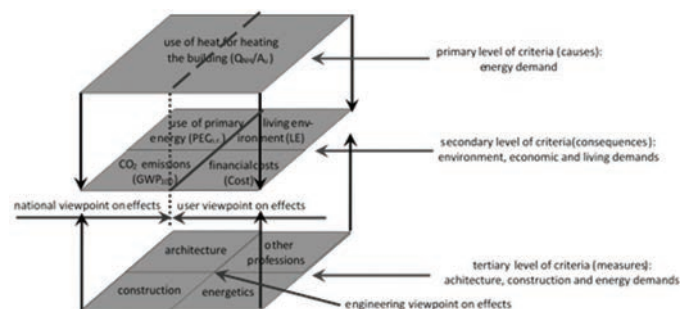
Mentorstvo pri doktoratu

PRAZNIK, Miha. Kvalitativni parametri za energijsko učinkovite enodružinske hiše : doktorska disertacija = Quality parameters for the energy single-family houses : doctoral thesis. [Ljubljana: M. Praznik], 2014. XVII, 171 str.

methods and tools ensures that planners use it in the idea phase so that they seek the most optimal design for the building from the beginning.

KEY WORDS

energy efficiency, sustainable concept, single family house, simplified method, simplified tool



Slika 9: Prikaz prvih dveh nivojev zahtev oz. kriterijev za vrednotenje, s petimi ključnimi indikatorji.

Figure 9: Representation of the first two levels of demand or the criteria for evaluation using 5 key indicator.

Domen Kušar

SPREMEMBE TESTA MISELNE ROTACIJE

CHANGES OF MENTAL ROTATING TEST (MRT)

POVZETEK

Ena izmed inteligenc, ki med drugim zajema lingvistično, matematično, glasbeno, gibalno itd., je prostorska inteligenca. Sestavni del slednje je prostorska predstava. Ta sposobnost je ključna za vse osebe, vpletene v proces oblikovanja in upravljanja s prostorom. Proučevanje prostorske predstave je relativno mlada disciplina. Za začetnika raziskav s tega področja se smatra Sir Francis Galton, ki je leta 1880 poročal o svojih eksperimentalnih raziskavah na področju miselne predstavljalivosti. Hkrati s preučevanjem prostorske predstave so se razvijali tudi različni instrumenti – testi za njeno vrednotenje. Eden izmed standardnih splošno razširjenih testov je test miselne rotacije (Mental rotation test – v nadaljevanju MRT), ki pa je tudi povržen razvijanju, zlasti na Japonskem. Na Fakulteti za arhitekturo MRT uporabljamo za ugotavljanje prostorske predstave študentov in vrednotimo tudi sam test. Na osnovi rezultatov smo skupaj s kolegi iz Budimpešte predlagali spremembe točkovanja MRT. Rezultati obstoječega sistema točkovanja namreč niso ustrezali pričakovani normalni razporeditvi. S predlagano rešitvijo smo odpravili anomalijo obstoječega testa in to dokazali z rezultati testiranja študentov v Ljubljani in Budimpešti (tabela 1). Rezultati raziskave so bili predstavljeni v članku: Bölcskei, A., Kovács, A. Z., Kušar, D. (2013): New ideas in scoring the Mental rotating test. V: *Ybl Journal of built environment*, 2013/1, str.: 59-69 in na znanstvenih konferencah v Innsbrucku ter v Supetru poleti 2014.

UPORABNOST REZULTATOV

MRT je splošno uporabljan test po vsem svetu. Rezultati predlagane spremembe načina ocenjevanja pomenijo novost

SUMMARY

Spatial intelligence is one of the human intelligences (other abilities are linguistic, mathematical, musical, physical, etc...). An integral part of spatial intelligence is spatial ability. This ability is crucial for all parties involved in the process of creating and managing space. Spatial ability is a relatively young discipline. For the originator of the research in this area is considered Sir Francis Galton. He reported about his experimental research in the field of mental visualization in 1880. Parallel with the study of spatial ability, they have also developed various testing instruments. One of the widely used standard test is Mental rotation test (MRT). Nevertheless, it has been developing, especially in Japan. At the Faculty of Architecture, we use MRT to determine the spatial ability of students. At the same time, we also evaluate the test itself. Based on our results, and together with colleagues from Budapest, we proposed changes to the scoring system of MRT. The results of the current scoring system did not fit to the expected normal distribution. We eliminated the anomaly of existing test in proposed the solution. This was proven by the results of students in Ljubljana and Budapest (Table 1).

The survey results were presented in the article: Bölcskei, A., Kovács, A. Z., Kušar, D. (2013): New ideas and scoring the Mental rotating test. In: Ybl the Journal of the built environment, 2013/1, p.: 59-69 and on scientific conferences in Innsbruck and in Supetar on summer of 2014.

ISSUES AND THEIR SIGNIFICANCE

MRT test is widely used around the world. The results of the proposed changes in scoring system means a novelty in this