

Sofinanciranje energetske prenove javnih stavb v Sloveniji

Pravi balzam za gradbeno sušo v Sloveniji je drugi javni razpis Ministrstva za infrastrukturo in prostor RS za sofinanciranje energetske sanacije javnih objektov (vrtcev, šol, zdravstvenih domov, knjižnic, ...) v lasti lokalnih skupnosti v višini 47,6 milijona evrov. Ti obnovitveni projekti pomenijo za gradbena podjetja, industrijo gradbenega materiala in proizvajalce opreme več dela in s tem lajšanje kriznih časov.

Naložbe v energetske sanacije stavb imajo dolgoročen in večstranski učinek, ker gre za delovno intenzivne investicije, kar pomeni, da ob sami izvedbi investicije ustvarimo še nova delovna mesta, povečamo proizvodnjo gradbenega materiala in seveda prihranimo na energentih. Žal razpisani znesek predstavlja le majhen del potrebnega prometa gradbenih podjetij, ki naj bi na letnem nivoju znašal okrog 1,5 milijarde evrov. Razpisani znesek tako predstavlja le okrog 5 odstotkov potrebnega prometa v gradbeništvu.

Vendar samo energetska sanacija objektov sčasoma ne bo več dovolj. Lep zgled je npr. Francija, kjer so z letošnjim letom zaostriili predpise glede porabe primarne energije na največ 50 kilovatnih ur po kvadratnem metru stavbe na letnem nivoju ($50 \text{ kWh/m}^2/\text{leto}$). Ta zaostritev je trikrat nižja od tiste, ki so jo dopuščali stari predpisi izpred sedmih let. Zanimiva je tudi zahteva v novih predpisih, ki narekuje najmanj sedemnajst odstotkov zastekljenih površin po kvadraturi stavbe. To pomeni na sto kvadratnih metrov uporabne površine stavbe vsaj sedemnajst kvadratnih metrov steklenih površin. S tem predpisom želijo vzpodbuditi predvsem pasivni energetski del izkoriščanja sončne energije za ogrevanje stavb. A to hkrati pomeni večjo toplotno obremenitev stavb v poletnem času. To pomeni, da se bo razvoj stekla in stavbnega pohištva (oken) moral prilagoditi novim zaostrenim energetskim zahtevam. Temperaturno področje v našem podnebju se giblje od -30°C do $+35^\circ\text{C}$, kar znaša cca. 65°C temperaturne difference. Toplotna prevodnost današnjih dvo-slojnih stekel in oken, ki znaša $1,1 \text{ W/m}^2\text{K}$, za nove zahteve tako ne bo več zadoščala. Za to bo primernejša tro-slojna zasteklitev s toplotno prevodnostjo $0,6 \text{ W/m}^2\text{K}$. Pri tem pa bo potrebno rešiti še nevarnost kondenzacije zračne vlage na zunanem steklu tro-slojne zasteklitve. Danes se to rešuje s tanko-plastnimi nanosi kovinskih oksidov na zunanji strani zunanjega stekla, ki preprečujejo izpust infrardečega toplotnega sevanja iz notranjosti stavbe v okolje.

Razvoj novih zasteklitev, vključno s kombinacijo prosojnih foto-voltaičnih modulov kot steklenih delov stavb, bo s temi novimi predpisi v Franciji, ki jim bodo verjetno sledile tudi druge države, še pospešen.

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Co-financing of energy renovation of public buildings in Slovenia

One remedy for the building construction drought in Slovenia is the second invitation of the Ministry of Infrastructure RS to the co-financing of energy renovation of public facilities (kindergartens, schools, health centres, libraries, etc.) owned by the local communities, to the amount of 47.6 million euros. These projects represent recovery for construction companies, industry, building material and equipment manufacturers, and more work, and thus relieve the effects of the crisis.

Investments in energy efficiency renovation have long-term and multifaceted effects; because it is labour-intensive investment, its essence is to create more jobs, to increase the production of building materials and, of course, to save on energy. Unfortunately, the modest tendered amount represents only a small fraction of the needs of construction companies in Slovenia, which are assessed as needing €1.5 billion on an annual basis. Therefore, the tendered amount represents only about 5 percent of the needed yearly funds.

However, the energy renovation of buildings alone will no longer suffice. A good example of this can be found in France, which this year tightened rules on primary energy consumption to a maximum of 50 kilowatt hours per square meter of the building per year (50 kWh/m²/year); this is a mere third of what the previous regulations of seven years ago permitted. Also interesting is the new requirement that at least seventeen percent of the exterior surface of a new building be glass. This aims to encourage passive solar energy for heating buildings, but it also means greater heat loads in the summer. Consequently, the development of glass and windows has to adapt to the new stringent energy requirements.

The temperature range in Slovenia's climate zone is from -30 to +35 degrees or about 65 degrees difference. The thermal conductivity of current two-parallel glass windows is 1.1 W/m²K, which will no longer be enough for the new requirements. A new standard must be more efficient: triple-layer glass with a thermal conductivity of 0.6 W/m²K. For this, we will need to resolve the danger of condensation on the outer glass surface of triple-layer glass. Today, this is addressed by a thin coating of metal oxides on the outer side of the outer glass pane, preventing the release of infrared radiation (heat) from the interior of the building to the outside environment.

The development of new glass and windows including a combination of transparent photovoltaic modules will be encouraged by these new regulations in France, which are expected to be followed by other countries.