

ENERGETSKA UČINKOVITOST STAVB

Slovar pojmov
v angleškem in slovenskem jeziku





Ta slovar je bil pripravljen v okviru projekta INTENSE - "Od Estonije do Hrvaške: inteligentni ukrepi za učinkovito rabo energije v stavbah v lokalnih skupnostih vzhodne in srednje Evrope" (2008-2011), ki ga finančno podpira program Intelligent Energy Europe. Projekt se izvaja v 11 državah vzhodne in srednje Evrope in v ZRN.

Slovar vključuje pojme, ki so pogosto v rabi v vsakdanjem jeziku, medijih in tehničnih prispevkih o energetske učinkovitosti kot tudi pojme, ki se vežejo na Smernico o energetske učinkovitosti stavb (2002/91/EC) in Smernico o učinkoviti rabi končne energije v stavbah in energetskih storitvah (2006/32/EC).

Slovar vsebuje kratke razlage pojmov tako v angleščini kot v jezikih držav vključenih v projekt, da bi omogočil sporazumevanje in razumevanje preko nacionalnih meja.

Upamo, da vam bo slovar prišel prav!

Types of buildings

Vrste stavb



New building

New buildings are completely new erected. They are constructed by respecting the newest laws and standards, including meeting minimum energy performance requirements laid down in national legislation. A building will be called new, until newer legislation, newer energy performance standards or refurbishments had taken place.

Nove stavbe

Gre za novo zgrajene stavbe. Pri njihovi gradnji se upoštevajo najnovejša zakonska določila in standardi, vključno z zahtevami po upoštevanju predpisanih energetskega značilnosti. Stavbo lahko imenujemo novo, dokler niso sprejeti novi zakonski standardi pri gradnji ali prenovi hiš.

Existing building

Existing buildings are representing older energy standards. For these buildings data necessary to assess their energy use are known or can be measured. A new building will become an existing building, as soon as newer standards and energy requirements are published by the national legislations.

Obstoječe stavbe

Obstoječe stavbe predstavljajo stavbe, zgrajene na podlagi starejših energetskega standardov. Za njih so znane vrednosti, ki omogočajo oceno porabe energije ali pa jih je mogoče izmeriti. "Nova stavba" bo tako postala "obstoječa stavba" takoj, ko bodo pričeli veljati relevantni novi zakonski in podzakonski akti in/ali tehnični standardi.

Public building	The building is occupied by public authorities or provides public services to a large number of persons. It is frequently visited by members of the general public e.g., administration buildings, schools, hospitals and buildings for sports. Public funding is used for its maintenance.
Javna stavba	Stavba, ki jo uporabljajo javne institucije/organizacije ali v kateri se zagotavljajo javne storitve za večje število oseb. V stavbi se pogosto zadržujejo predstavniki splošne javnosti. Gre za upravne stavbe, šole, bolnišnice in športne dvorane. Za njihovo vzdrževanje se uporabljajo javna sredstva.
Residential house	<p>Occupied or unoccupied, owned or rented, single-family or multifamily house, excluding institutional housing such as hostels or school dormitories, hospitals, night shelters, and military barracks. Types of residential houses:</p> <ul style="list-style-type: none"> • detached house (free standing house e.g., for a single family); • semi-detached or twin house (a pair of houses built side by side as units sharing a party-wall and usually in such a way that each house's layout is a mirror image of its twin); • row house (a row of identical or mirror-image houses share side walls; the first and last of these houses are often larger than those houses in the middle); • a multi-storey residential building contains more than one apartment, drawn together in one building structure. Mostly with similar storey-plans, it has centralized staircases and supply units.
Stanovanjska hiša	<p>Mednje sodijo zasedena ali nezasedene hiše lastniške hiše ali hiše v najemu, enodružinske ali več stanovanjska hiše, razen institucionalnih bivališč kot so mladinski ali dijaški domovi, bolnišnice, zatočišča za begunce in vojašnice. Vrste stanovanjskih stavb:</p> <ul style="list-style-type: none"> • samostojna hiša; • "dvojček" (dve hiši zgrajeni ena zraven druge s skupnim zidom, običajno tako, da je vsaka hiša po izgledu preslikava svoje dvojčice); • vrstna hiša (vrsta identičnih ali po izgledu "preslikanih" hiš; prva in zadnja v vrsti sta pogosto večji kot hiše v sredini); • večstanovanjska stavba ima več kot eno stanovanje v posamezni stavbi. Razporeditev stanovanj je v večini primerov podobna, stavba pa ima praviloma skupno stopnišče in oskrbno enoto.

Social housing

Social housing is a paraphrased term referring to rental housing, which may be owned and managed by the state, municipal house building associations or by mutual benefit organizations. A key function of social housing is to provide housing that is affordable to people on low incomes. Rents in the social housing sector are kept low through state or municipal subsidy.

Socialna stanovanja

Izraz "socialna stanovanja" je parafraza, ki se nanaša na najemniška stanovanja, katerih lastnik in upravnik je lahko država, lokalna skupnost, stanovanjska zadruga ali organizacija za vzajemno pomoč. Osnovna funkcija socialnih stanovanj je, da zagotavljajo stanovanjski prostor za ljudi z nizkimi dohodki. Najemnine v socialnih stanovanjih so nizke s pomočjo državnih ali občinskih podpor.

Pre-fabricated building

Buildings which are partially or completely built in factories. Most of the prefabricated buildings are made of wooden or of concrete elements which will be completed on site.

Montažne hiše

Hiše, ki so delno ali v celoti sestavljene v tovarnah. Večina montažnih hiš je narejena iz lesenih ali betonskih elementov, ki se jih sestavi na gradbišču.



Types of energy efficient buildings

Vrste energetske učinkovitih stavb

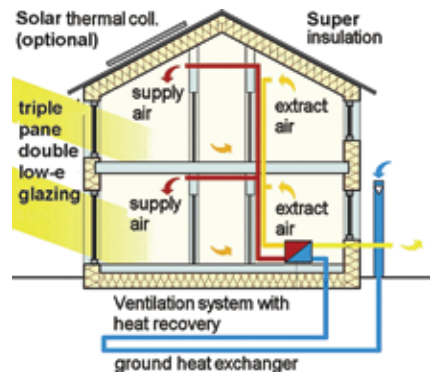


Passive house

A passive house is a building in which a comfortable room temperature of about 20°C can be achieved without conventional heating and cooling systems. Such buildings are called „passive“, because the predominant part of their heat requirement is supplied from „passive“ sources, e.g., sun exposure and waste heat of persons and technical devices. The heat still required can be delivered to rooms by the controlled ventilation system with heat recovery.

The annual heat demand for passive house is very low - in the middle of Europe about 15 kWh/m²/year. The need for total primary energy use should not exceed 120 kWh/m²/year, including heating and cooling, domestic hot water, and household electricity.

The basic features that distinguish passive house construction: compact form and good insulation; southern orientation and



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shade considerations; good air tightness of building envelope; passive preheating of fresh air; highly efficient heat recovery from exhaust air; using an air-to-air heat exchanger; hot water supply using renewable energy sources; using energy-saving household appliances.

The design of passive houses is a holistic process of planning and realization. It can be used for designing new buildings or for energy renovation of existing buildings.

Pasivna hiša

Pasivne hiše so stavbe v katerih je mogoče doseči udobno bivalno temperaturo okoli 20°C brez običajnih sistemov za ogrevanje in hlajenje. Imenujemo jih "pasivne", ker večinski delež pri doseganju udobne bivalne temperature prihaja iz t.i. "pasivnih" virov, kot so sončno sevanje, toplotno sevanje oseb ali tehničnih pripomočkov. Potrebna toplota oz. hlad se v prostore dovaja preko nadzorovanega sistema prezračevanja z rekuperacijo toplote/hladu.

Letno potrebujemo za ogrevanje pasivne hiše približno 15 kWh/m² (1,5 l). Uporaba celotne primarne energije ne sme presežati 120 kWh/m²/leto, vključno z ogrevanjem in hlajenjem, pripravo tople sanitarne vode ter porabo električne energije v stavbi.

Temeljne značilnosti, po katerih se loči zasnova pasivne hiše, so: kompaktna oblika in dobra toplotna izolacija, orientacija proti jugu z ustreznim senčenjem, dobra zrakotesnost stavbnega ovoja, pasivno predgretje svežega vstopnega zraka; visoko učinkovita izraba toplote izrabljenega oz. izstopnega zraka; uporaba toplotnega izmenjevalca zrak-zrak; oskrba sanitarne tople vode na osnovi obnovljivih virov energije; uporaba energijsko varčnih gospodinjskih aparatov.

Koncept pasivne hiše je osnovan na celostnem procesu načrtovanja in izvedbe. Mogoče ga je uporabiti za snovanje novih stavb ali energetske obnovo obstoječih.

Low energy house

Generically said, a low-energy house is any type of house that uses less energy than a regular house but more than a passive house. Energy performance of a low-energy house is about half lower than the minimum requirement.

There is no global definition for low energy house because national standards vary considerably among countries. For example, in Germany a "low energy house" has an energy consumption limit of 50 kWh/m²/year for space heating.

Nizkoenergijska hiša

Na splošno rečeno je nizkoenergijska hiša katerakoli hiša, ki porabi manj energije kot običajna hiša iste vrste, a več kot pasivna hiša. Poraba energije nizkoenergijske stavbe je približno pol nižja od minimalnih zahtev.

Splošne definicije nizkoenergijske stavbe ni, saj se standardi precej razlikujejo od države do države. V Nemčiji je npr. mejna vrednost porabe energije za ogrevanje pri „nizkoenergijski hiši“ 50 kWh/m²/leto.

Energy-self-sufficient building

An energy-self-sufficient building is completely independent of external power supply. Electricity and heat are produced and stored completely with e.g., micro power plants or active solar systems in or at the building.

Energetska samozadostna stavba

Energetska samozadostna stavba je popolnoma neodvisna od zunanje oskrbe z energijo. Potrebno električno energijo in toploto proizvajajo v stavbi nameščene mikro enote za soproizvodnjo ali sprejemniki sončne energije in foto-napetostni moduli, nameščeni na stavbi.



Engineering networks (heating, cooling, ventilation)

Energetske instalacije (ogrevanje, hlajenje, prezračevanje)



Passive heating

At passive heating a large part of the heat for heating is covered over internal profits, i.e. the heat emission by persons and devices as well as over solar profits (heat entry over the windows).

Pasivno ogrevanje

Pri pasivnem ogrevanju se velik del toplote za ogrevanje pokriva z notranjimi dobitki, oz. s toploto, ki jo oddajajo osebe in naprave, kot tudi s solarnimi dobitki (pretvorba svetlobe, ki vstopa v hišo skozi okna, v toplotno sevanje).

Passive cooling

Passive cooling is minimising heat gain from the external environment (e.g., by shading a building from the sun and insulating the walls) and removing unwanted heat from a building e.g., by using natural ventilation.

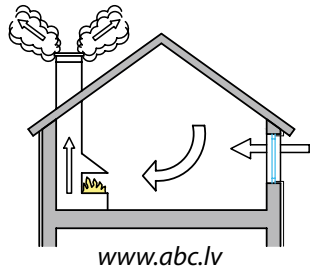
Pasivno hlajenje

Pasivno hlajenje zmanjšuje toplotne dobitke iz okolice (npr. s senčenjem stavbe ter toplotno izolacijo stavbnega ovoja) ter z odstranjevanjem nezaželene toplote iz stavbe oz. z uporabo naravnega prezračevanja.

Natural ventilation

Process of supplying and removing air of an interior room with air from the outside by openings and leakages in the building shell/envelope.

There are two principles of natural ventilation: wind driven ventilation and stack ventilation. Stack ventilation is generated by a difference in the



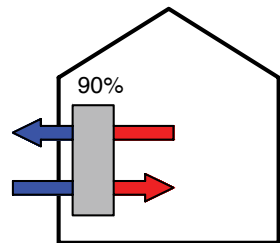
density of warm interior air and the cold air from outside. Both ventilation systems are depending on the weather and so they are uncontrollable, mostly too low or much too strong. Modern, energy efficient buildings are working with „controlled mechanical ventilation“ (by fans) - the antonym for „natural ventilation“.

Naravno prezračevanje

Je proces oskrbe notranjega prostora z zrakom in njegove zamenjave z zrakom skozi odprtine in špranje v stavbnem ovoju. Obstajata dva načina naravnega prezračevanja: prezračevanje zaradi kroženja zraka in zaradi vzgona. Vzgonsko prezračevanje poganja razlika v gostoti toplega notranjega in hladnega zunanega zraka. Oba sistema prezračevanja sta odvisna od vetra in ju tako ni mogoče nadzirati, tako da je prezračevanje velikokrat preslabotno ali premočno. Sodobne energetsko učinkovite hiše so opremljene s “nadzorovanim mehanskim prezračevanjem” (ventilatorji), kar je pravo nasprotje “naravnega prezračevanja”.

Controlled ventilation with heat recovery

Ventilation is a necessary procedure of replacing the used up interior air by air from outside. Through a duct – system, the air from outside is being drawn in by electrically propelled fans (direct current motors). It is filtered, and led to a heat transducer, optionally warmed up and then led into the individual areas (e.g. living room, sleep area, classroom, work spaces). Used up air is drawn off in the kitchen, bath-room, toilets and led by the way of a second duct system to the heat transducer and blown outside. The amount of air needed per person amounts to approx. 20-30 m³/h. A controlled ventilation system with heat recovery is necessary for all energy-efficient buildings. The efficiency for high-efficient heat recovery systems is over 90%.



Nadzorovano prezračevanje

Prezračevanje je potrebno za izmenjavo izrabljenega notranjega zraka, ki ima običajno visok delež (izdihanega) ogljikovega dioksida (CO₂), vlage in nekaterih onesnaževal zraka, s svežim zunanjim. Zunanji zrak se skozi zračnik in filter preko toplotnega izmenjevalca s pomočjo ventilatorjev vsesa v hišo. Toplotni izmenjevalec omogoča, da doseže optimalno temperaturo, potem pa se ga vodi v posamezne bivalne prostore (dnevna soba, spalnica, delovni prostor, učilnica). Izrabljeni zrak se vsesa v kuhinji, kopalnici, sanitarijah ter preko drugega zračnega kanala preko toplotnega izmenjevalca odvede iz stavbe. Vsaka oseba potrebuje na uro okoli 20-30 m³ svežega zraka. Sistem nadzorovanega zračenja s toplotnim izmenjevalcem je nujen za vse energetske učinkovite stavbe. Učinkovitost visoko učinkovitega sistema za izrabo toplote odpadnega zraka presega 90 %.

Thermal comfort

Human thermal comfort is defined as the state of mind that expresses satisfaction with the surrounding environment. Maintaining thermal comfort for buildings' inhabitants is one of the most important goals for engineers when designing plans for heating, ventilation, air conditioning and the building envelope. Factors, which determine thermal comfort are: indoor and outdoor air temperature, air movement, relative humidity, clothing people are wearing and the activity level they are engaged in.

Toplotno ugodje

Toplotno ugodje definiramo kot stanje zavesti, ki izraža zadovoljstvo z okoljem, ki jo obkroža. Eden najpomembnejših ciljev inženirjev pri načrtovanju ogrevanja, prezračevanja, hlajenja zraka in ovoja stavbe je prav doseganje in vzdrževanje toplotnega ugodja. Dejavniki, ki ga določajo so: notranja in zunanja temperatura, gibanje zraka, njegova relativna vlažnost kot tudi to, kako so ljudje oblečeni ter s čim se ukvarjajo oz. kakšna je stopnja njihove telesne aktivnosti.

Air humidity

Humidity is the amount of water vapour in the air. Water sources in buildings are:

- the exhalation of people staying inside (dependent on the level of the physical work);
- the utilization of the room (drying, cooking, working, doing sports);
- "free water" which is coming into new buildings by manufacturing the materials and by the manufacturing process of the building itself.

To describe the amount of water vapour in the air the "relative humidity" is used. Comfortable feeling for a human being is at relative air humidity around 50% (air temperature of 20°C).

Vlažnost zraka

Vlažnost je količina vodne pare v zraku. Izvori vlage v stavbi so:

- izdih ljudi, ki se nahajajo v stavbi (odvisno od ravni njihovih telesnih aktivnosti);
- dejavnosti, ki potekajo v prostoru (sušenje, kuhanje, delo, telovadba);
- "vgrajena vlaga", ki prihaja v novo stavbo zaradi vgrajenih materialov ter procesa izgradnje same stavbe.

Za opis količine vodne pare v zraku v vsakdanjem jeziku uporabljamo izraz "relativna vlažnost". Ljudje se udobno počutimo, kadar je relativna vlažnost zraka okoli 50% (in temperature zraka npr. 20°C).



Energetska učinkovitost stavb



Minimum energy performance requirements

Member States should set minimum requirements for the energy performance of buildings and may differentiate between new and existing buildings as well as different categories of buildings. The requirements should be set with a view to achieving the cost-optimal balance between the investments involved and the energy costs saved throughout the life-cycle of the building.

Zahteve glede minimalne energetske učinkovitosti

Države članice EU morajo postaviti minimalne zahteve glede energetske učinkovitosti stavb, ki se lahko razlikujejo za nove in obstoječe stavbe kot tudi med različnimi vrstami stavb. Zahteve morajo biti postavljene glede na doseganje optimalnega stroškovnega ravnotežja med potrebnimi investicijskimi vlaganji ter prihranjenimi stroški energetske storitve v celotni predvideni življenjski dobi stavbe.

Energy audit

Inspection, survey and analysis of energy flows in a building with the objective of understanding the energy dynamics of the system. Typically an energy audit is conducted to seek opportunities to reduce the amount of energy input into the system without negatively affecting the output. It seeks to prioritize the energy usage according to the greatest to least cost effective opportunities for energy savings. Member States shall ensure the availability of efficient, high-quality energy audit schemes which are carried out in an independent manner, to all final consumers.

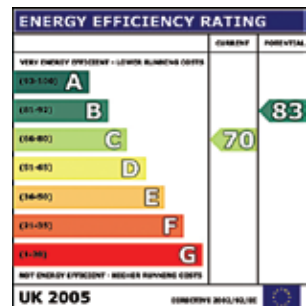
Energetski pregled

Energetski pregled vsebuje pregled, poročilo in analizo energetskih tokov v stavbi s ciljem razumevanja dinamike energetskega sistema. Običajno se energetski pregled izvaja z namenom iskanja priložnosti za zmanjševanje potrebnih energijskih vložkov v sistem ob ohranjanju oz. izboljšanju energetski storitev. Ob tem se poskušajo postaviti prioritete glede izboljšanja energetske učinkovitosti po vrstnem redu od najmanjših do največjih stroškov za enoto prihranjene energije oz. stroška za energetske storitve. Države članice morajo končnim porabnikom zagotoviti dostopnost učinkovitih in kvalitetnih energetskih pregledov s strani neodvisnih strokovnjakov.

Energy performance certificate

It shows energy performance of a building. Member States shall ensure that, when buildings are constructed, sold or rented out, an energy performance certificate is made available to the owner or by the owner to the prospective buyer or tenant, as the case might be. The validity of the certificate shall not exceed 10 years.

The energy certificate for buildings shall include reference values such as current legal standards and benchmarks in order to make it possible for consumers to compare and assess the energy performance of the building. The certificate shall be accompanied by recommendations for the cost-effective improvement of the energy performance.



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Energetska izkaznica stavbe

Energetska izkaznica stavbe kaže njeno energetsko učinkovitost. Države članice morajo zagotoviti, da je ob izgradnji, prodaji ali najemu stavbe oz. njenega dela, na voljo energetska izkaznica stavbe, s katero razpolaga lastnik stavbe in se ob nakupu ali najemu predloži novemu lastniku oz. najemniku stavbe oz. njenega dela. Obdobje veljavnosti izkaznice ne sme presegati 10 let.

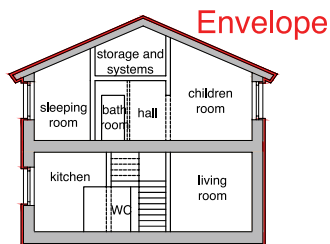
Energetska izkaznica stavbe mora vključevati referenčne vrednosti kot so npr. veljavni standardi in primerjalne vrednosti, s čimer se uporabnikom omogoča primerjava in ocena energetskih značilnosti stavbe. Izkaznico morajo dopolnjevati priporočila glede stroškovno učinkovitih izboljšav energetskih značilnosti stavbe.

<p>Major renovation</p>	<p>Renovation is changing or substitution of parts of a building. A major renovation is the case, where the total cost of the renovation related to the existing building is more than 25% of the value of the building (exclusive the land where the building is situated) or the case where more than 25% of the building shell undergoes renovation.</p>
<p>Večje preнове</p>	<p>Prenova je zamenjava ali nadomestitev delov stavbe. Večje preнове pomenijo zamenjavo ali nadomeščanje elementov ali dela stavbe z namenom njene obnove ali prenove. Obnova se obravnava kot večja v primeru, ko so skupni stroški obnove večji od 25% vrednosti obnovljene stavbe (brez vrednosti zemljišča na katerem stoji).</p>
<p>Blower door test</p>	<p>A diagnostic tool developed to measure the air tightness of a building and to help locate air leakage sites. The test procedure consists of the measurement of the volumetric air flow, which is produced by the differential pressure by a calibrated fan. With a differential pressure of 50 Pa the air flow volumes is determined [m³/h]. The change of air rate is determined by division with the internal air volume of the building. SI-Unit: [h⁻¹]. Typical values for the air-change-rates (n50) are:</p> <ul style="list-style-type: none"> • untight building: n50 > 3 h⁻¹ • low-energy house: n50 < 1,5 h⁻¹ • passive house: n50 < 0,6 h⁻¹
<p>Blowerjev test (test zrakotesnosti)</p>	<p>Test zrakotesnosti je postopek, ki omogoča merjenje prepustnosti ovoja stavbe za zrak oz. ter določanje mest prepustnosti. Testni postopek sestavljajo meritve volumetričnih zračnih tokov, ki jih povzročajo razlika v tlaku zaradi delovanja kalibriranega ventilatorja. Pri tlačni razliki 50 Pa so določeni volumni zračnih tokov (m³/h). Spremembo izrazimo s številom izmenjav celotne prostornine zraka v eni uri. [h⁻¹].</p> <p>Tipične vrednosti stopenj izmenjave zraka so:</p> <ul style="list-style-type: none"> • netesna stavba: n50 >3 h⁻¹ • nizko-energijska hiša: n50 < 1,5 h⁻¹ • pasivna hiša: n50 <0,6 h⁻¹



Building shell / building envelope

A building shell is the separation between the interior and the exterior environments of a building. The building shell includes the roof, the walls, the doors and the windows, as well as the bottom slab and encloses thereby the heated or air-conditioned space volume.



www.passivhaustagung.de/Passive_House_E/energybalance.html

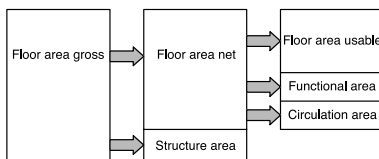
Stavbni ovoj

Stavbni ovoj je ločnica med notranjim in zunanjim okoljem stavbe. Vključuje streho, zidove, vrata in okna, kot tudi talno ploščo in tako obsega ogrevane oz. hlajene površine oz. volumne.

Floor area

Floor area gross

Total floor area of all floors of a building calculated with the external dimensions of the building including structures, partitions, corridors and stairs.



www.euleb.info

Floor area net

Sum of all areas between the vertical building components (walls, partitions), i.e. gross floor area reduced by the area for structural components.

Floor area usable

The fraction of the net floor area for the intended use of the building, i.e. net floor area reduced by circulation areas (corridors, stairs etc.) and functional areas (WCs, storage rooms etc.).

Stanovanjska površina

Bruto stanovanjska površina

Celotna stanovanjska površina vseh nadstropij v stavbi, ki vključuje zunanje dimenzije stavbe, nosilne in podporne strukture, vključno z notranjimi zidovi, hodniki in stopnišči.

Neto stanovanjska površina

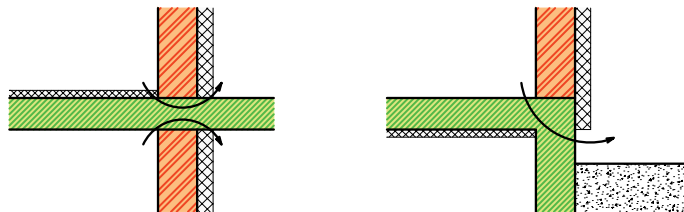
Vsota vseh površin med vertikalnimi komponentami stavbe (zunanji in notranji zidovi) oz. bruto stanovanjska površina zmanjšana za površino, ki jo zavzemajo strukturni elementi.

Uporabna površina

Del neto stanovanjske površine, ki je namenjen bivanju oz. Neto stanovanjska površina brez prehodnih prostorov (hodniki, stopnišča) in funkcionalnih prostorov (sanitarije, shambe itd.).

Thermal bridge

An area in the building envelope which has a higher heat flow than the surrounding is called a thermal bridge. A classic thermal bridge is the overhanging balcony plate, leading through an insulated outer wall. Typical effects of thermal bridges are: decreased interior surface temperatures; in the worst cases this can result in high humidity in parts of the construction; significantly increased heat losses.



Toplotni most

Mesto v toplotnem ovoju stavbe, ki ima večji toplotni tok kot ostali del ovoja, imenujemo toplotni most. Klasičen toplotni most je balkon kot zunanji podaljšek (notranje) talne površine, ki prebija izolirani zunanji zid. Tipična posledica toplotnega mostu je zmanjšanje temperature v prostoru. V najslabšem primeru to lahko pripelje do visoke vlažnosti v delih konstrukcije, kar povzroči tudi znatno povečanje toplotnih izgub.

Air tightness of buildings

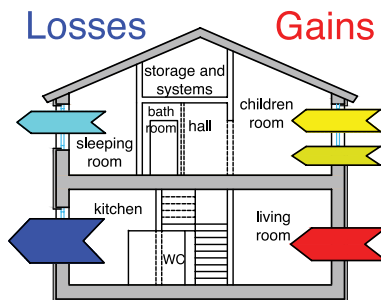
Airtight building is a building in which no air can get in or out through any kind of leakage. The air tightness of a building is a useful knowledge when trying to increase energy efficiency. If the building envelope is not airtight enough, significant amounts of energy may be lost due to exfiltrating air, or damage to structural elements may occur due to condensation. To ensure the necessary air-change rates, it has to be ventilated manually (by opening the windows) or by an air ventilation system.

Zrakotesnost stavbe

Zrakotesna stavba je stavba v katero ne more skozi nobeno špranjo zrak niti prehajati niti izhajati. Znanja s področja zrakotesnosti ovoja stavbe so zelo koristna, kadar želimo povečati njeno energetsko učinkovitost. Če ovoj stavbe ni dovolj zrakotesen, lahko izgubimo velike količine energije zaradi dodatnega prehajanja zraka, poleg tega pa lahko pride do poškodb konstrukcijskih elementov zaradi kondenzacije. Za zagotovitev ustreznih stopenj oz. količin izmenjave zraka je potrebno ročno prezračevanje (odpiranje oken) ali prezračevalni sistem.

Energy balance of a building

Energy balance of a building refers to the sum of the heat losses (e.g., heat going out through the roofs, external walls and windows) being equal to the sum of the heat gains (e.g., passive solar gains, internal gains and active heating).



www.passivhaustagung.de/Passive_House_E/energybalance.html

Energetska bilanca stavbe

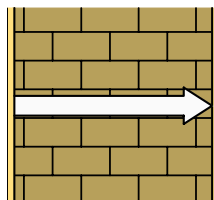
Energetska bilanca stavbe se nanaša na vsoto toplotnih izgub (se pravi toplote, ki prehaja preko strehe, zunanjih izdov in oken), ki je enaka vsoti toplotnih dobitkov (se pravi pasivnih dobitkov sončnega sevanja, notranjih dobitkov in aktivnega sistema ogrevanja).

U-value

Heat transmission coefficient (thermal transmittance) of a structure, describes the heat flow through a building element in W per m² and temperature difference of one kelvin (K). SI-Unit: [W/(m²K)]. The higher the value the lower its thermal resistance and therefore the more heat/energy pass through the element. Examples of U-values depending of material thickness ($\lambda=0,040$ W/(mK)):

- 10cm: $U = 0,4$ W/(m²K)
- 20cm: $U = 0,2$ W/(m²K)
- 40cm: $U = 0,1$ W/(m²K)

U-value is equal to the inverse of the sum of the R-values (thermal resistance) of the construction. SI-Unit: [(m²K)/W].



U - vrednost

Toplotno prehodnost (toplotno prevodnost) strukture stavbe opisuje pretok toplote skozi gradbeni element v W na m² pri temperaturni razliki 1 kelvin (K). SI-enota [W/(m²K)]. Višja kot je vrednost, nižji je toplotni upor in zaradi česar skozi element prehaja več toplote oz. energije. Primeri U-vrednosti glede na debelino materiala ($\lambda=0,040$ W/(mK)):

- 10cm: $U = 0,4$ W/(m²K)
- 20cm: $U = 0,2$ W/(m²K)
- 40cm: $U = 0,1$ W/(m²K)

U- vrednost je enaka obratni vrednosti vsote R-vrednosti (toplotni upor) konstrukcije. SI-enota: [(m²K)/W].

Double/triple glazing

Windows made by glazing with two or three glass panes. The inter-space between the panes is filled with gas in order to reduce the transmissions of energy. To reduce the solar radiation, the surface of one or more panes is coated. Typical values are:

- 2-panes-glazing: $U_g = 2,8-3,0 \text{ W}/(\text{m}^2\text{K})$
- 2-panes-heat protection glazing: $U_g = 1,1-1,3 \text{ W}/(\text{m}^2\text{K})$
- 3-panes-heat protection glazing: $U_g = 0,6-0,8 \text{ W}/(\text{m}^2\text{K})$

Dvojna/trojna zasteklitev

Dvo oz. troslojna okna imajo dve oz. tri stekla. Vmesi prostor med njimi je zapolnjen s plinom, ki zmanjšuje prenos energije. Da bi zmanjšali vnos sončnega sevanja je površina enega ali več stekel prevlečena s posebnim premazom. Tipične vrednosti so:

- 2-slojna zasteklitev: $U_g = 2,8-3,0 \text{ W}/(\text{m}^2\text{K})$
- 2-slojna-s toplotno-zaščitnim premazom: $U_g = 1,1-1,3 \text{ W}/(\text{m}^2\text{K})$
- 3-slojna- s toplotnozaščitnim premazom: $U_g = 0,6-0,8 \text{ W}/(\text{m}^2\text{K})$

Proizvodnja energije



Primary energy

Energy that has not been subjected to any conversion or transformation process. Primary energy includes non-renewable energy and renewable energy. If both are taken into account it can be called total primary energy.

Primarna energija

Primarna energija je energija, ki ni bila podvržena nobenemu procesu pretvorbe ali preobrazbe. Primarna energija vključuje obnovljivo in neobnovljivo energijo. Če upoštevamo tako eno kot drugo lahko govorimo o skupni primarni energiji.

Co-generation

Simultaneous conversion of primary fuels into thermal energy and electrical energy, meeting certain quality criteria of energy efficiency. Also known as combined heat and power (CHP).

So-proizvodnja

So-proizvodnja je sočasna proizvodnja toplotne energije in električne energije v enem samem procesu, ki ustreza določenim kriterijem energetske učinkovitosti. Govorimo tudi o kogeneraciji, označujemo jo tudi z angleško kratico CHP (combined heat and power).

White certificate

A document certifying a certain reduction of energy consumption, which has been attained by companies (energy producers, suppliers or distributors) in the energy market. In most applications, the white certificates are tradable. Corresponding to the closely related concept of "emission trading", it should guarantee, that the overall energy saving target is achieved. The system of the "white certificates" has to be set up and controlled by government bodies.

Beli certifikati

Beli certifikati so dokumenti, ki potrjujejo določeno zmanjšanje porabe energije, ki so ga dosegla energetska podjetja (proizvajalci, dobavitelji in distributerji) na trgu z energijo. V večini projektov je z belimi certifikati mogoče trgovati.

Skladno z zelo podobnim konceptom "trgovanja z izpusti" je potrebno zagotoviti, da se doseže splošni cilj doseganja energetskih prihrankov. Sistem "belih certifikatov" mora biti vzpostavljen in nadzorovan s strani vladnih teles in agencij.





Trajnostni pristop



Holistic planning

A process, which tries to integrate a lot of different factors into the planning of urban & environmental areas. The importance is drawn on all affecting factors, like: all involved parties and their needs, the expertise of the designers, cost effectiveness over the entire life-cycle of the building, security, accessibility, flexibility, aesthetic and sustainability, the location of the property and used building materials.

Celotno načrtovanje

Proces, ki poskuša integrirati številne različne dejavnike v načrtovanje urbanih in okoljevarstvenih področij. Pri tem se obravnavajo vsi dejavniki s pomembnim vplivom, kot so: vsi deležniki in njihovi interesi, znanje načrtovalcev, stroškovna učinkovitost v času celotnega življenjskega cikla stavbe, varnost, dostopnost, prožnost, estetika in trajnostnost, lokacija ter uporabljeni gradbeni in izolacijski materiali.

Green public procurement

Green public procurement means that contracting authorities and entities take environmental issues into account when tendering for goods or services with tax payers money in order to reduce the impact of the procurement on human health and the environment.

Examples - energy efficient computers and buildings, environmentally friendly public transport, recyclable paper, organic food in canteens, electric cars, office equipment made of environmentally sustainable timber, electricity stemming from renewable energy sources, air conditioning systems complying with state-of-the-art environmental solutions.

Zelena javna naročila

Zelena javna naročila pomenijo da tisti, ki v imenu javnih organov, zavodov in agencij sklepajo pogodbe, v okviru javnih naročil za dobrine in storitve pri tem upoštevajo vidike vpliva na okolje oz. varovanja okolja, z namenom zmanjšaja negativnih vplivov na zdravje ljudi in kakovost okolja. Lahko gre npr. za energetsko učinkovite računalnike ali zgradbe, recikliran papir, javni transport, ekološko pridelano in predelano hrano, električna vozila, ekološko certificirane lesne proizvode, električno energijo in/ali toploto oz. hlad na osnovi obnovljivih virov energije, okolju prijazne sisteme prezračevanja ipd.

Referenčna lista

Smernice Evropske komisije :

Smernica EC 2002/91/EC o energetske učinkovitosti stavb

Smernica ES 2006/32/EC o končni rabi energije in energetskih storitvah

Spletni viri:

http://ec.europa.eu/environment/gpp/toolkit_en.htm

http://erg.ucd.ie/pep/pdf/Passive_House_Sol_English.pdf

www.passivhaustagung.de/Passive_House_E/energybalance.html

www.foreignword.com/glossary/fenestration/stu.htm

www.statemaster.com/encyclopedia/Passive-cooling

www.businessdictionary.com

www.natural-building.co.uk

www.buildingsplatform.org

www.efficientwindows.org

www.passive-house.co.uk

www.rensolutions.co.uk

www.landlord-epc.co.uk

www.passivehouse.us

www.our-energy.com

www.britannica.com

www.solarserver.de

www.passivhaus.de

www.euroace.org

www.sbsa.gov.uk

www.euleb.info

www.wbdg.org

www.passiv.de

www.abc.lv

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Tisk: "Jelgavas tipogrāfija", Latvija
Junij 2009



"Od Estonije do Hrvaške: inteligentni ukrepi za učinkovito rabo energije v stavbah v lokalnih skupnostih srednje in vzhodne Evrope" (INTENSE)

Projektna pogodba: IEE/07/823 SI2.500392

Energetska učinkovitost stavb: Slovar pojmov v angleščini in slovenščini (D.2.1.)

