

2015.g. 3. jūnijā

Latvijas Universitātes Energoefektivitātes pētījumu centrs

Iepazīšanās ar testēšanas poligonu LU Botāniskajā dārzā

Būvkonstrukciju energoefektivitāte, ilgtspēja un telpu termiskais komforts Latvijas klimatā

Programma

9.20 – Pulcēšanās LU Botāniskajā dārzā (Rīga, Kandavas iela 2)

9.30 – 9.40: Atklāšana un apsveikumi (I. Pilmanis, A. Sparinska)

9.40 – 9.50: Ievadinformācija par pētījumu mērķiem un poligona infrastruktūru (A. Jakovičs)

9.50 – 10.15: Pētījumu rezultātu raksturojums (S. Gendelis)

10.15 – 10.25: Pētījumu perspektīvas un pakalpojumi industrijai (M. Ščepanskis)

10.25 – 10.45: Jautājumi un diskusija pie kafijas

10.45 – 11.20: Demonstrācijas dalībnieku grupām:

A) Mērsistēmas un apkures/ventilācijas/dzesēšanas sistēmas standos

B) Izvēlēti standartizēti mērījumi (spiediena tests, gaisa apmaiņas un piemaisījumu noteikšana, siltuma caurlaidības noteikšana un termogfrāfija)

11.20 – 11.30: Noslēguma diskusija

Summary

According to EU directive 2010/31/EU all EU countries should ensure near zero energy building (nZEB) starting from 2020. Particular definition of nZEB varies in different EU countries in respect to climate peculiarities.

Testing stands in Botanic garden of University of Latvia were created to investigate energy efficiency, thermal comfort and sustainability of popular building materials and constructions in real climate of Baltic countries. Such stands and an interdisciplinary research group, which analyses the results, are unique in Baltic countries and provide essential objective information on real efficiency and behaviour of different building constructions and actual performance of heat pumps in heating/cooling regimes. Such research is very important for approbation of national regulations of nZEB and to enhance quality of new buildings and tolerance of their designing in terms of predicted energy consumption, thermal comfort and sustainability.

Three-year-long monitoring and research already showed thermal transmittance (U-value) at significantly higher level than measured at standard laboratory tests for some constructions. This difference results in up to 20% higher energy consumption than predicted by standardized calculation. Moreover, due to excessive humidity accumulated within building constructions, some materials have significant risk of negative biological activity. The measured actual performance of heat pumps is also remarkably lower than standardized estimated seasonal COP-values.

This research is still in progress now. However, the team of the project generated an idea of commercial testing service in real climate and further classification of building constructions and systems in terms of their energy efficiency, thermal comfort and sustainability. Perspectives of such service in accordance with EU guidelines and actual possibilities of commercial testing provided by this spin-off enterprise will be also presented.