



# WORKSHOP

## DESIGNING FACADES FOR NEAR ZERO ENERGY BUILDINGS

### SUMMARY

**Facade u-value:** In Sweden a consultant report suggests 0,4 as the total u-value for facades. What does this mean as regard to the geometry of windows, glass share in facade, cold bridges and spandrel design?

**Plus energy:** A short look at existing solutions for solar cells integrated in facades. And other suggestions for spandrel aesthetics

**HVAC and solar control:** To decrease use of A/C equipment the g-value for the façade must be minimized to a level where standard ventilation does most of the job. Demands will be different for different room sizes. These demands need to be handled together with the demands for healthy daylight levels and low u-values. The solution is dynamic facades and here lies the main focus of the workshop.

**Calculating dynamic facades:** Here lies a deeper discussion on dynamic facades covering outside shading/double skin, inside shading plus solar control glass, blinds integrated into IGU, electrochromic glass and micro lamella in the glass (Microshade). The pros and cons are discussed for each type and a basic training in the SSF ESBO Light / ES-SO ESBO light freeware is held. The upside of the whole workshop is to present the advantages coming from new fully spectral calculation modeling of facades, especially for modern solar control glass plus new inside shaders. This calculation mode I will explain and it is not a new thing but has never before been integrated into a freeware. Nor has it been integrated into a full building simulation program. But since January 30 2018 the IDA ICE building simulation program integrates fully spectral calculation.

The IDA ICE program is dominating the Swedish market with some 2000 consultants working at least half of their time in the software. It is a very complicated tool. But it communicates with the ESBO program. Now standard people can produce a façade solution in ESBO that can be exported to IDA ICE for a full scale building simulation, thus creating a new way for communication with these engineers.

The workshop is dimensioned for a half day and each participant will get a copy of my booklet for free.



### TIMETABLE 26TH OF JUNE

9:00 Welcome to workshop, introduction of the participants

13:00 End of the workshop

Duration: 4 hours



### ORGANISER

#### **OSKAR STORM, BUILDING GLASS POLSKA**

With 20 years in the glass business Oskar has experienced controlling, production and sales before going into marketing and specification in 2014. O has worked a lot with indoor climate consultants, his competence cuts across from glass to facade and building simulation. The workshop is based on his booklet, that will be distributed for free as workshop documentation