

Optimization and cost control of zero energy massive and passive buildings for affordable social housing



Prof. ir. Patrick Ampe
patrick.ampe@hogent.be
University college Ghent
Belgium

Challenges

- Europe demands energy neutral buildings by 2021
- Current building methods aren't satisfactory
- No cost efficiency optimization
- Current software doesn't give sufficient solutions
- The calculated values don't accord with the real ones

Calculating tool

Financial and technical simulation model

- A tool which enables the user to simulate costs
 - Current standard of buildings
 - Low energy buildings
 - Passive buildings
 - Zero energy buildings
- Specifically for social buildings companies
- Stand alone buildings and apartments

Dynamic calculation of the energy need

- Engineered by research partner University Ghent
- Standard calculations overestimate the energy need
=> expensive
- Goal: predict the realistic need of energy

Spin-off

- Establishing a spin-off: offering support to the market
=> architects, contractors, professionals,...
- Assisting the design (calculations)
- Organising trainings, workshops at different levels.
- Building a laboratory model to illustrate and test the new details.

Pioneer project

- Design and built 4 buildings, social housing
- Monitoring these buildings
 - ⇒ Comparison calculations and real values
- Controlling existing buildings
 - ⇒ Blower door test and thermal camera
 - ⇒ Map out a procedure to measure consistent

Collaboration

- Start date: 1/10/2011
- End date: 30/09/2014

Looking for PARTNERS in the domains:

- Sustainable electricity, heat and cooling producing devices
- Controlled ventilation of buildings.
- Zero energy, passive buildings
- Writing software to determine the optimal combination of the different building materials, devices,...

Questions



Personal

Prof. ir. Patrick Ampe

patrick.ampe@hogent.be

Cell-phone: +32 475 46 56 67

Address

University College Ghent

Valentin Vaerwyckweg 1

BE-9000 Ghent

Belguim