



MORE-CONNECT project newsletter

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ISSUE #2 OVERALL PROJECT PROGRESS

Development and advanced prefabrication of innovative, multifunctional building envelope elements for MODular RETrofitting and CONNECTIONs

by MORE-CONNECT team
www.more-connect.eu

The main objective of MORE-CONNECT group is to promote energy efficiency in buildings demonstrating the benefits of prefabricated modular retrofitting technology and the components for buildings' renovation in five geo-clusters across Europe: Portugal, Netherlands, Denmark, Czech Republic, Estonia and Latvia.

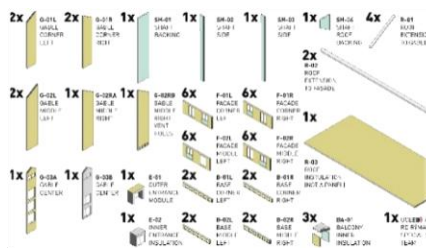


Figure 1. (Antonín Lupíšek, Martin Volf & UCEEB Team)

Tallinn University of Technology have made significant contribution to the analysis of moisture dry-out problems in prefabricated modular renovation elements. Application of smart vapor retarder allows accumulated moisture dry out of existing construction as well as prevents interstitial condensation. The review of first prototypes done in Estonia and Latvia is available here: <https://www.youtube.com/channel/UCo73vcDtTkEOwWpHoKYwrgA>

Production and Process

Photogrammetric and laser scanning methods have been used and tested for the building documentation in the MORE-CONNECT project. Testing shows that both methods are convenient. Use of a particular method is based on project specifications and requirements as

well as on ordering party preferences. Use of Ground control points (GCP) is recommended for higher accuracy demands (<5mm) and when larger objects (residential houses) are of interest. Use of a particular method is based on project specifications and requirements as well as on ordering party preferences. The accuracy of a manually traced BIM model of the building highly depends on the accuracy of point cloud and the experience and the skills of the modeler. The tested building example is very simple therefore in the case of realistic and more complex buildings more precise scan data might be required.

Pilots in Geo Clusters

- The testing and demonstration in practice will be organised on six locations:
- ✓ Czech Republic (RLLL setting for in deep testing)
 - ✓ Denmark (full real setting)
 - ✓ Estonia (full real setting)
 - ✓ Latvia (full real setting)
 - ✓ The Netherlands (full real setting and RLLL setting for in deep testing)
 - ✓ Portugal (partial in real setting)



Figure 2. Project pilot buildings

Technology Development

The technologies should comply with the requirements of the end-user and be suitable to be applied as plug & play to the platforms. Components should be able to communicate with:

- ✓ the occupant/user, as well as actively controlled by the user;
- ✓ external signals and parameters, like weather forecasting and remote control;
- ✓ other components to control and adaptive optimization.

The UCEEB Team have developed modular solutions for facades and roofs. The proposed modular solutions will be available as catalogue of modules.

International cooperation



Figure 3. Workshop in Tallinn, SBE16

Project team has a strong international cooperation with such relevant EU projects as [PROF/TRAC](#); [IMPRESS](#); [REFURB](#); [RetroKit](#); [SuRE-FIT](#);

The international MORE-CONNECT workshops are organized at the following highly recognizable international conferences:

- ✓ REHVA Annual Conference - Advanced HVAC and Natural Gas Technologies - Riga, Latvia, 8-9.05.2015;
- ✓ REHVA Annual Meeting and CLIMA2016, 2-25 May - Aalborg, Denmark;
- ✓ CESB16 | Central Europe towards Sustainable Building Conference Innovations for Sustainable Future, June 22-24, 2016, Prague;
- ✓ SBE16 Tallinn and Helsinki Conference; Build Green and Renovate Deep, 5-7 October 2016 Tallinn and Helsinki;
- ✓ Upcoming events are posted on web-page and LinkedIn group;

Our publications

Please check our web-page for more detailed information on project results and publications.

Most recent and import publication are:

1. Faltýnová, M., Matoušková, E., Šedina, J., & Pavelka, K. (2016). Building facade documentation using laser scanning and photogrammetry and data implementation into BIM. Paper presented at the International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences - ISPRS Archives, , 41 215-220. doi:10.5194/isprsarchives-XLI-B3-215-2016

Full text is available here:

<http://www.int-arch-photogramm-remote-sens-spatial-inf-sci.net/XLI-B3/215/2016/isprs-archives-XLI-B3-215-2016.pdf>

2. Kalamees, T., Lupišek, A., Sojková, K., Mørck, O., Borodinecs, A., Almeida, M., Rovers, R. What kind of heat loss requirements NZEB and deep renovation sets for building envelope?. In: CESB 2016 - Central Europe Towards Sustainable Building 2016: Innovations for Sustainable Future, Czech Republic, Prague, 22-24 June, 2016. Prague: Grada

Publishing, 2016, pp.137-144. ISBN 978-802710248-8.

3. Op't Veld P., Kalamees T., Rovers R. MORE-CONNECT: New developments in prefabricated multifunctional building envelope elements and installation platforms for NZE renovation. CLIMA 2016 - proceedings of the 12th REHVA World Congress: volume 1. Aalborg: Aalborg University, Department of Civil Engineering, May 2016, p. 10

Full text is available here:

http://vbn.aau.dk/files/233707117/paper_419.pdf

Further newsletters will provide detailed updates and descriptions of developed prefabricated modules, development of 3D building model, specifics of integrated solutions as well as progress done in pilot buildings.

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