

Unit 1_4 Energy Use and climate - Analysis of building performance

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The session focussed on analysis and studies of various energy efficient systems in and outside the building that affects the comfort levels in the building. Jukka Rantala from Finland started the session by presenting an analysis of "Heat losses from a slab-on-ground structure with a low temperature floor heating system in Nordic climate". Marta Hoi Yen Lam from the University of Brighton, UK presented the process of calculating the shading coefficients of green vertical walls in "Thermal shading effect of climbing plants on glazed facades". "Development of a passive cooling strategy using double-roofing system with rainwater spraying and its field testing in terms of the indoor thermal environment" was presented by Itaru Takahashi from Japan. Thomas Metz from Netherlands presented a study on a very important aspect of modern design, use of glazing in buildings and its "Environmental analysis of large glazed spaces". Kenichi Hasegawa from Japan followed it up with his analysis of "Energy consumption of residential buildings designed environmental conscious concept in Japan. Arne Elmroth discussed the ways for "Efficient energy use and good indoor climate in a prefabricated timber framed house in Sweden". An innovative approach of "Development of an on-site evaluation method for building thermal performance using an infra-red camera" was presented by Seung-Eon Lee from the Republic of Korea. Among the last speakers was Kenjiro Yamaguchi from Japan presenting his "Study on the procedure to verify the effect of energy conservation retrofit of existing buildings". The session was finally concluded by Ales Krainer who presented "Heating-cooling wall panels system in Slovene Ethnographic Museum – SEM".

A wide range of issues that are associated with integrating energy efficient systems in buildings were presented in the session. The presenters shared very valuable information and experience through their careful analysis. This information has the potential to be used as starting points for future designers to refer to while designing bioclimatic designs. The Chairs should be appreciated for selecting these globally represented topics and focussing entirely on Action and not theories and thus adhering to the theme of the conference.