



TrinityHaus

ResearchMatters Spring 2011

The manner in which people interact with each other, their environment, their city, their buildings and associated technology, is critical to the success of a sustainable and low carbon society. The projects being undertaken at TrinityHaus focus on this human / built environment interface. Practical challenges set in real world situations, such as occupied buildings and existing urban areas, provide the context for in-depth analysis of day-to-day occupancy, interactions and consumption patterns. This context specific and occupant centred research provides knowledge and experience which feeds into the people centred design approach that underpins the work at TrinityHaus.

In the recent past TrinityHaus has been involved in the use of personas as a user centred design tool for the built environment and design challenges which team up designers with disabled people. We have coordinated user-centred student design projects where students use the design process to plan and build full scale shelters based on real world users and sites. This people and context centred approach now continues in our current projects and we are constantly striving to further understand the rich and varied interactions thrown up by everyday life.

We hope you enjoy reading this Spring Edition of our newsletter . We are always happy to answer any questions about these projects and to discuss any other potential areas of research.

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In this issue

1. **Low Carbon Adaptable Homes – Phase 2**
2. **Wood Quay Building Energy Analysis**
3. **eGMS - Geophysical Monitoring System for Flood Embankments**
4. **Sustainable Indicators for the Dublin Region**
5. **E2B Association**
6. **New Staff and Postgraduate Researchers**

Low Carbon Adaptable Homes - Phase 2

Client: Glenbeigh Offsite

Researchers: Tom Grey and Oliver Kinnane

Following on from Phase 1 of this project, the second phase has recently been approved for funding from Enterprise Ireland. This phase will involve a family living in the dwelling and detailed monitoring of the building's performance, energy and water consumption and post occupancy evaluation. Further to this the house will be extended after a 6 month period to test the adaptability strategy and measure the impact of this change on both the core house and the occupants. The real emphasis of this project looks at the interaction of the occupants with the house and an examination of occupancy patterns in this living lab to gain an in-depth understanding of the relationship between energy consumption, indoor environment conditions and quality of life. (Contact tom.grey@tcd.ie or KINNANEO@tcd.ie)



Wood Quay Building Energy Analysis

Client: Dublin City Council

Researchers: Mark Dyer, Oliver Kinnane and Tom Grey

Post Graduate Researchers: Simeon Walsh and Rory Walsh

TrinityHaus have been engaged by Dublin City Council to carry out a comprehensive review of the energy consumption within their Wood Quay Headquarters. This analysis will examine key areas of consumption while also looking in greater detail at both the Wood Quay Venue and the Atrium space between buildings 3 and 4. A Post Occupancy Evaluation will also be carried out to evaluate the relationship between occupant satisfaction and energy consumption within these key spaces. The Post Graduate Researchers will focus on specific research regarding natural ventilation strategies and the use of thermal imaging to determine occupant thermal comfort.

(Contact KINNANEO@tcd.ie)



eGMS - Geophysical Monitoring System for Flood Embankments

Funded: Enterprise Ireland

Researchers: Ruth Jackson, Matteo Viganotti and Mark Dyer

This Eureka! approved project investigates a novel geophysical technique that combines advances in hardware with innovative software technologies. The technique produces a quantitative condition assessment of flood embankments which would increase the accuracy of Flood Risk Management Plans. In order to maximise the impact of the research results the pilot sites for this project have been selected in collaboration with the OPW and will involve a number of flood embankments on the Shannon estuary. The project is carried out in collaboration with industry partners in Ireland, Minerex Geophysics Ltd., the Czech Republic, Vodni Zdroje a.s, & Slovenia, Geoko d.o.o.

(Contact jacksoru@tcd.ie or viganom@tcd.ie)



Sustainability Indicators for the Dublin Region

Client: DRA & Dublin City Council

Researchers: Emma Siddall and Tom Grey

Through multi-stakeholder consultation, this project aims to 1) develop a vision of sustainability for the Dublin Region, and 2) identify a set of indicators to measure progress towards this vision. The work is being jointly conducted by TrinityHaus and Dublin City Council and is funded by the Dublin Regional Authority (DRA). The steering committee also includes members from Codema and the Dublin Regional Authority. (Contact siddale@tcd.ie)



E2B Association - European Construction Technology Platform

Researchers: Mark Dyer

Mark Dyer has recently been appointed to the Scientific Committee of the E2B (Energy Efficient Buildings) Association's Ad-hoc Industrial Advisory Group. See <http://www.e2b-ei.eu> (Contact m.dyer@tcd.ie)



New Staff Members

Oliver Kinnane is a "Design Engineer / Architect who has joined TrinityHaus to work in the field of building energy analysis and design. Oliver has a diverse background in Control Engineering, Electrical Engineering, Architecture and Industrial Design. He has a Ph.D. and Bachelors degree in Engineering and a Masters in Architecture.

Ruth Jackson has come to TrinityHaus to work primarily on the eGMS Project. Ruth describes herself as Geophysicist that has come back to solid ground after many years working offshore in the oil and gas industry!

New Postgraduate Researchers

Eoghan O Shea graduated from the School of Architecture, University College Dublin, in 2003, and is a member of the RIAI. He has worked for firms including Shay Cleary Architects and Grafton Architects, and has also practiced in New Zealand and Hong Kong. He started his PhD researching Universal Design in 2010 at TrinityHaus.

Rory Walsh recently completed a research masters with Energy Research Group in UCD and has worked as a Building Performance Analyst with Building Design Partnership. Rory's current research investigates the use of dynamic thermal simulation in the development of low energy, comfort control, strategies.

Simeon Walsh graduated from Trinity College Mechanical Engineering in 2005. Simeon went on to work with Mercury Engineering as engineer, quantity surveyor and project manager on many high profile projects, including Dublin Airport Terminal 2 and Intel. He has now joined TrinityHaus researching smart energy efficient control of large spaces.



TrinityHaus was formed in 2008 to provide innovative solutions for buildings, neighbourhoods and cities. Over the last two years the main research effort has focused on two principal themes. These are energy efficient buildings and eco-districts and secondly people centred design in homes and neighbourhoods for all ages, sizes and abilities.

Please see website www.trinityhaus.tcd.ie for further information on these and other projects. The contact details of each researcher can be found on the 'People' section of the website.