



# TrinityHaus

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EnergyMatters October 2010

It has been twelve months since TrinityHaus embarked on its GREENprint energy efficiency research programme for cities and buildings. During that time 15 full-time PhD students have joined fellows. The research projects have taken us from Dublin to Europe and the Middle East with key partnerships being formed with Arup, Codema, CEUD, D'Appolonia, Dublin City Council, Enterprise Ireland, Glenbeigh, IRCSET, Philips, TNO, SEIA, UCD Earth Systems Institute and Urban Planning Institute and Arabtec EnviroGreen. If there was one major lesson learnt over the last year, it has been the importance of grounding research projects in reality with a practical connection. It still means we can carry out high quality research but the approach avoids wasting time solving unnecessary problems but more importantly creates momentum and credibility. At the same time we have seen the link between people and technology as a catalyst for innovation. This was best illustrated by the 24 Hr Universal Design Challenge we co-hosted last November 2009 with the Centre of Excellence in Universal Design in Dublin. You are welcome to see the video at <http://www.youtube.com/watch?v=3DLJLekIMDY>.

So I hope you enjoy reading about our projects and we are always interested in making new partnerships .

Professor Mark Dyer  
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Michael McNamara Chair  
in Construction Innovation  
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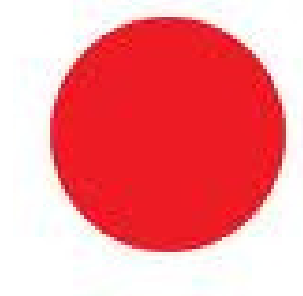
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## Transatlantic Energy Efficiency

**Client:** European Commission FP7

**Researchers:** Mark Dyer and Pat Shiel

As part of the EC FP7 Transatlantic Energy Efficiency project, a comprehensive review is underway of existing policies, regulations and incentives for energy efficiency measures in Japan covering industry, buildings and transportation. The 12 month project is being undertaken in collaboration with by the Earth Sciences Institute, University College Dublin (Frank J Convery, Director) in partnership with the University of California Berkeley, the Centre for European Policy Studies and the Sustainable Energy Authority of Ireland, guided by a steering committee which includes the International Energy Agency and the Association for the Conservation of Energy. (Contact [mark.dyer@tcd.ie](mailto:mark.dyer@tcd.ie))



## Dublin City Civic Offices

**Client:** Dublin City Council

**Researchers:** Ruth Collins and Tom Grey

Following a preliminary energy audit of the Wood Quay Civic Offices and Conference Centre (36,000 sqm), a series of applied research projects are being carried out to reduce energy consumption by coupling BMS information with Internal Environment Quality and building thermal mass. In addition the building complex is being used as part of a European project to demonstrate energy savings linked to advances in IEQ systems analysis and occupant centric monitoring. (Contact [tom.grey@tcd.ie](mailto:tom.grey@tcd.ie))



## Transition to a Low Carbon Society

**Client:** Atomium Culture

**Researcher:** Mark Dyer

TrinityHaus (Prof Mark Dyer) has been invited to deliver an opening address for a high level workshop hosted by the Belgium Presidency to develop a roadmap for European transition to a low carbon society. Fellow participants include government minister from Sweden, Belgium and EC Commissioners and internal industries including Siemens. <http://atomiumculture.eu/> (Contact [mark.dyer@tcd.ie](mailto:mark.dyer@tcd.ie))



## Monitoring of Energy Savings from Retrofitting of Social Housing

**Client:** Kilkenny City Council

**Researchers:** Derek Sinnott and Mark Dyer

Ten houses are being continuously monitored for energy consumption (gas, electricity and solid fuel) over two heating seasons, both pre- and post retrofitting works in order to assess the actual energy savings brought about by retrofitting. Apart from yielding actual data on energy usage, the project is expected to provide more information that can be used to deliver better returns on investment for future refurbished of domestic dwellings. (Contact [dsinnott@wit.ie](mailto:dsinnott@wit.ie))

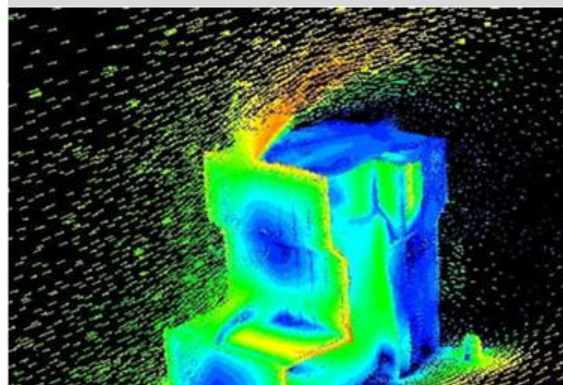


## Smart Cooling Strategy for Data Centres

**Client:** Intel

**Researchers:** Cristiana Paduano and Mark Dyer

The European Data Centre at Intel Ireland is a high-power consuming facility with 3 air handling units to maintain the temperature levels at a correct range of values for the servers. Computational Fluid Dynamics analysis (CFD) is being used by TrinityHaus to model the air flow in the facility to optimise the efficiency of the system and thus reduce energy consumption and associated costs. Future scenarios are also being modelled to inform future efficient planning. (Contact [paduanoc@tcd.ie](mailto:paduanoc@tcd.ie))



## Low Carbon Adaptable Home

**Client:** Glenbeigh Offsite

**Researchers:** Ruth Collins and Tom Grey

TrinityHaus have been commissioned to design a low carbon adaptable house for Glenbeigh Construction. The low carbon adaptable home has been granted planning permission and construction is scheduled to start in November 2010. The demonstration house will be occupied by a family for 24 months and monitored for energy consumption as a living laboratory. (Contact [tom.grey@tcd.ie](mailto:tom.grey@tcd.ie))

## Ecological Footprint and Sustainability Indicators for Dublin City

**Client:** Dublin City Council

**Researcher:** Emma Siddall

TrinityHaus are advising Dublin City Council on the use of Ecological Footprint as a tool for assessing the sustainability of Dublin compared with other comparable European Cities. Concurrently TrinityHaus is reviewing other suitable indicators for assessment of sustainability to be used within Dublin City's Development Plan. (Contact [siddale@tcd.ie](mailto:siddale@tcd.ie))

## Globe Forum Dublin 2010

**Client:** IRCSET

**Researcher:** Mark Dyer

Prof. Mark Dyer has been invited by Irish Council for Science Engineering and Technology to deliver a lecture at the forthcoming Globe Forum Dublin 2010 hosted by the King and Queen of Sweden. The subject is Health, Well-Being and the Design of the City. [www.globeforum.com](http://www.globeforum.com)

(Contact [mark.dyer@tcd.ie](mailto:mark.dyer@tcd.ie))

## Irish Government Policy on Architecture

**Client:** Department of Environment Heritage & Local Government

**Researchers:** Mark Dyer, Ruth Collins, Emma Siddall, Matteo Viganotti & Tom Grey

TrinityHaus has recently been selected to form part of a panel to help the Government Policy on Architecture Advisory Committee implement the Government's Policy on Architecture '*Towards a Sustainable Future: delivering Quality within the Built Environment*' (Contact [tom.grey@tcd.ie](mailto:tom.grey@tcd.ie))



Comhshaol, Oidhreacht agus Rialtas Áitiúil  
**Environment, Heritage and Local Government**

**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](http://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.