



**BUILT ENVIRONMENT
RESEARCH INSTITUTE
ANNUAL REPORT
1 AUGUST 2008 - 31 JULY 2009**

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I. FOREWORD BY THE PRO VICE CHANCELLOR (RESEARCH AND INNOVATION)



I am particularly delighted to provide the Foreword to this year's Annual Reports. Research and Innovation at the University of Ulster continues to grow and to make major contributions to the economic, social and cultural wellbeing of Northern Ireland and beyond. This past year has seen us climb to a position where we are in the top third of research institutions in the country and are, again, amongst the top performers in the UK in translating our research and research expertise into significant economic benefit. In reading the annual reports from University of Ulster Research Institutes I am confident that you will find the research undertaken at Ulster to have more than fulfilled expectations over the past year.

The University's reputation for high quality research was independently confirmed through the results of the most recent Research Assessment Exercise. The overall performance places Ulster in the top third of the UK institutions with three Units in the top three and eleven in the top twenty as measured against peers. This is our best ever performance and confirms our strategy on quality, selectivity and supporting environment. Our exceptional performance in the RAE has boosted our efforts to attract high-calibre research staff to work alongside our existing internationally strong teams, in attracting external research and other income and in completing work that has led to highly prestigious papers, books and other key performance outputs.

We are now in a very strong and confident position as we prepare for the next national assessment due in 2013. This year we produced a new Research Strategy to provide us with an appropriate quality framework that will support our future submission to the newly designed Research Excellence Framework (REF). The new approach to assessment through the REF will present many challenges, particularly in relation to the new Impact category and in the administrative structures. We embark upon this process with great confidence and expectation having evidenced another very strong performance in the translation of our research expertise into economic, social and cultural benefits. There continues to be a very strong flow of research findings coming out of our research activities this year, many as new disclosures, adding to our intellectual property portfolio. We continue to exploit this asset through knowledge and technology transfer activities managed through our Office of Innovation.

University of Ulster research teams were awarded grants totalling over £29M for the academic year 2008/9, up almost £18M on the previous year. During the same period Research Capital funding totalled £8M and the University's Research Council income was approximately £3M. A particularly pleasing aspect of our grant income profile shows that grants were awarded to each of our six faculties and across all four campuses, highlighting research excellence throughout the University.

Cross border research projects funded by the Department for Employment and Learning (DEL) under its Cross Border R&D Funding Programme accounted for the substantial increase in research funding from previous years with five Ulster research teams awarded grants totalling £7.7M to conduct collaborative research projects with sister universities in the Republic of Ireland.

I am, of course, delighted but not surprised at this superb performance since external funders of research only allocate funding where they are confident that quality exists and Ulster's recent research activity is evidence of that quality. It is, however, particularly pleasing to record such a level of funding during a period when there has been significant pressure on the economy in general and finance in particular. It is gratifying that funders have confidence in the quality of our work and are assured that it will reap benefits in the future.

In addition to the annual allocation of DEL postgraduate studentships of £4.91M, this year, the University received just over £1.41M in support of 78 new and continuing DEL funded PhD studentships to be held in research areas that have specific relevance to the Northern Ireland economy; thus allowing further development of R&D talent essential for innovation in business and the public sector. This funding enables Ulster to support 272 full-time research students with a further 123 full-time awards supported from a range of other sources of funding.

The University, through its research and outreach activity, makes a significant contribution on the local and world stages. Our staff inform both policy development at regional and national level and are leaders in gaining understanding of the many global challenges facing us in today's world.

I trust that you will enjoy reading the Report and I commend it to you as evidence that research at the University of Ulster ranks highly amongst UK institutions.



Professor ND Black
Pro Vice Chancellor (Research & Innovation)

2. FOREWORD BY THE RESEARCH INSTITUTE DIRECTOR



The Annual Report for the Built Environment Research Institute (BERI) for August 2008 to July 2009 marks a year of considerable achievement. The major event in this period was the outcome of the UK Research Assessment Exercise in December 2008 which evaluated the quality of university research over the period 2001 to 2007. In the RAE 2008, the Built Environment Research Institute obtained an extremely strong profile with 15% of activities classified as four star (world leading research), 50% rated at three star (internationally excellent), 30% two star (international quality) and 5% at one star (research of national quality). Collectively 95% of activities were considered to be of international standing. Built Environment research was in the top five disciplines submitted by the University and on the basis of power rating was placed in fourth position nationally for Unit of Assessment 30, Architecture and Built Environment.

Over the period of this report, the Research Institute has been highly successful in achieving new grant income. Several highly prestigious grants were obtained under very competitive conditions notably a £1.54M award under the DEL Cross-Border Research & Development Fund for an inter-disciplinary project on energy storage that embraces three of the research centres within BERI. Fuller details of research grants received are outlined in Section 6 of this report.

Research students are an essential part of the activities of BERI. Over the period of this report, 60 research students were registered for either full-time or part-time study. In total 13 students graduated with PhDs and emphasizing the profile of BERI this included several international candidates.

Over the year Fire Safety Engineering Research & Technology (FireSERT) enhanced its leadership in fire safety science and engineering as evidenced by its activities and recognition. A four year European (two million euro) programme was completed in February 2009 issuing a report that was received by the European Commission with special recommendation, a new EPSRC project on fire retardant chemicals was started and two proof of concepts projects were completed. Two existing EPSRC projects (façade flames and cellular beams) are actively progressing together with a European FP6 project on large scale cellular beam tests.

The HySAFER (Hydrogen Safety Engineering and Research) Centre established in 2008 continues to expand its research and related activities as evidenced by formal completion of two major FP6 projects, the European Network of Excellence HySafe (25 partners) and STREP HYPER (15 partners). HySAFER representatives were invited to become members of influential research related committees in the field, including the Executive Board of the International Association for Hydrogen Safety and the Board of Directors of the UK Hydrogen Association. An advanced research workshop series "Progress in Hydrogen Safety" was supported by leading players Daimler, GM, Volvo, Sandia National Laboratories, CEA and FZK. The World's leading producer of hydrogen Air Liquide and HySAFER established a research collaboration and applied for Industry-Academia Partnership funding through FP7's Joint Technology Initiative in Fuel Cell and Hydrogen Technologies. A Proof of Concept proposal was supported by Invest NI in collaboration with Health and Safety Laboratory (UK). These activities are based on the standing

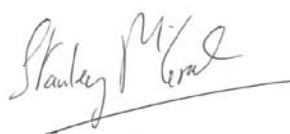
of HySAFER in modelling and large eddy simulations of hydrogen releases and dispersion, spontaneous ignition and jet fires, deflagrations and detonations, mitigation techniques and development of innovative hydrogen safety engineering framework. The third European Hydrogen Safety Summer School was hosted at the University of Ulster in August 2008.

The Centre for Sustainable Technologies (CST) has seen a growth in the number of academic and research staff and research students through considerable success in attracting funding for its energy and related research. Specifically, CST has built upon its technical expertise in Energy Storage and through engagement with the wider Research Institute (BERI) has succeeded in obtaining significant research funding, notably the DEL Cross Border Funding. Major funding was received from EPSRC (£250K) for the CALEBRE project on low energy technologies for building retrofitting. Through these activities CST has demonstrated leadership across the techno-socio-economic factors shaping energy storage research in Ireland and beyond.

The Centre for Research on Property and Planning (RPP) hosted the Commonwealth Association of Surveying and Land Economy (CASLE) conference in August 2008. A key activity over the year was the significant role played by the Real Estate Initiative with the recruitment of the initial 4 PhD scholars under the programme, major engagement with the property sector including high level interaction with government in Northern Ireland and production of a series of research reports reflecting the extreme market conditions of 2008-09 and impacts. The partnership with the International Centre for Local and Regional Development (ICLRD) saw the launching of two major reports, the Newry-Dundalk Twin City study and Rural Re-structuring, attended by government ministers from both Northern Ireland and the Republic of Ireland. The private rental index, funded by the Northern Ireland Housing Executive, was launched to complement the existing index on the house sales market. Spatial planning research was enhanced through the DEL Cross-Border R&D Funding and through projects funded by ICLR D.

The period covered by this Annual Report has seen a further growth in the size of the Research Institute with membership at the end of July 2009 of 52 staff, split between core (32) and associate (20) members. During the year, we were pleased to welcome new staff appointments into the Research Institute: Jane Boyd, Robert Eadie, Terry Grissom, Greg Lloyd, Sean McIntyre, Ursula McAnulty, Deborah Peel and Jianping Zhang. The expertise of staff members, new and existing, is reflected in the wide range of international, national, regional and local activities that they are involved in, with many requests to act as invited or keynote speakers, serve on editorial boards, sit on government committees and other activities as noted in Section 7 of this report on esteem indicators. It is also important to recognize the key role played by a strong core of research contract staff working in each of the four research centres in BERI.

In summary, I would encourage you to read through this Annual Report on the activities of the Built Environment Research Institute, University of Ulster over the period August 2008 to July 2009. I look forward to receiving any comments or queries that you may have on research activities in built environment.



Stanley McGreal
Director, Built Environment Research Institute

3. RESEARCH INSTITUTE MEMBERS

Surname	Forename	Title	Position	Institute Status
Adair	Alastair	Prof	PVC (Communication & External Affairs)	Core
Ali	Faris	Dr	Senior Lecturer	Core
Berry	James	Prof	Professor in Urban Planning & Property Development	Core
Blair	Neale	Dr	Lecturer	Associate
Boyce	Karen	Dr	Lecturer	Core
Boyd	Jane	Dr	Lecturer	Associate
Brennan	Sile	Dr	Lecturer	Associate
Brown	Louise	Mrs	Lecturer	Associate
Choi	Seng-Kwan	Dr	Lecturer	Core
Dahoe	Arief	Dr	Lecturer	Core
Davis	Peadar	Mr	Lecturer	Associate
Delichatsios	Michael	Prof	Professor of Fire Dynamics and Material Flammability and Fire Modelling/Director of FireSERT	Core
Eadie	Robert	Dr	Lecturer	Associate
Gray	Paddy	Mr	Senior Lecturer	Associate
Griffiths	Philip	Dr	Reader	Core
Grissom	Terry	Dr	Lecturer	Associate
Gunay	Banihan	Dr	Lecturer	Core
Haran	Imelda	Dr	Lecturer	Associate
Heaney	George	Mr	Senior Lecturer	Associate
Hemphill	Lesley	Dr	Lecturer	Core
Hewitt	Neil	Prof	Professor of Energy/ Director of CST	Core
Hine	Julian	Prof	Professor of Transport	Core
Huang	Ye	Dr	Lecturer	Core
Hyde	Trevor	Dr	Lecturer	Core
Joseph	Paul	Dr	Lecturer	Core
Kashyap	Anil	Dr	Lecturer	Associate
Keenan	Michaela	Dr	Lecturer	Associate
Lim	Lay-Cheng	Dr	Lecturer	Core
Lloyd	Greg	Prof	Head of School of the Built Environment	Core
Lyness	John	Dr	Reader	Core
MacIntyre	Sean	Mr	Senior Lecturer	Associate
Makarov	Dmitriy	Dr	Reader	Core
McAnulty	Ursula	Miss	Lecturer	Associate
McCluskey	William	Dr	Reader	Core

Surname	Forename	Title	Position	Institute Status
McGreal	Stanley	Prof	Professor of Property Research/Director of BERI and RPP	Core
McIlveen-Wright	David	Dr	Lecturer	Core
McQueen	Michael	Mr	Lecturer	Associate
Molkov	Vladimir	Prof	Professor of Fire Safety Science/ Director of HySAFER	Core
Myers	William	Dr	Reader	Core
Nadjai	Ali	Prof	Professor of Fire Structural Engineering	Core
Novozhilov	Vasily	Prof	Professor in Fire Dynamics	Core
Odeyinka	Henry	Dr	Lecturer	Associate
Parsa	Ali	Prof	Professor of Urban Planning & Business Development	Core
Peel	Deborah	Ms	Senior Lecturer	Core
Perera	Srinath	Dr	Lecturer	Core
Smyth	Mervyn	Dr	Reader	Core
Strong	Alan	Mr	Senior Lecturer	Associate
Thompson	William	Dr	Lecturer	Associate
Woodside	Alan	Prof	Professor of Highway Engineering	Associate
Woodward	William	Dr	Reader	Core
Yohanis	Yigsaw	Prof	Professor of Building Services Engineering	Core
Zhang	Jianping	Dr	Lecturer	Associate

BERI staff and status at 31st July, 2009.

4. RESEARCH STUDENTS

The following research students were registered on research degree programmes in the Institute during 2008-2009.

Name	Thesis Title
Akashah, Farid W	Fire risk simulation and assessment using multi-agent technology
Alharbi, Talal	Accessibility of public buildings for the disabled community in Jordan
Anderson, Mark T	Biomass pelletisation, fuel variability and pelletisation for co-gassification process
Beji, Tarek	Modelling soot and carbon monoxide in enclosure fires
Brown, Louise	Time on the market for single family residential property: the UK perspective
Bukhari, Syed	Public transport network change and access to transport in low income households
Byrne, Orla M	Investigation into the potential practical application of “smart growth” within an Irish case study
Clarke, Mervyn C	Strategic property performance management
Colclough, Shane	Thermal energy storage
Dan, Nchelatebe N	Solar thermal energy
Davis, Peadar	An empirical analysis of property tax policy options and the potential for using a banded approach
Golden, Saul	Urban design decision support systems - assessment tools for successful urban civic space
Goodfellow, Nathan K	Cellular beams in fire: performance of cellular composite floor beams in fire situations
Gore, Ricardo	An investigation into the relationship between visual field/exposure and response time in a fire emergency
Gunasekera, Sanwara	Modelling the relationship between organisational and supply chain performance in the construction industry
Hardie, Brian	The behaviour of compartment masonry walls in fires
Hillis, Colin JG	Transport security and terrorism
Kamruzzaman, Md	Public transport network change and access to transport in low income households
Keatley, Patrick	Dynamic techno-economic analysis of power generation systems
Kelly, Hugh F	24-hour cities: advantages in commercial real estate investment
McAlister, Michael P	Development of a nett zero carbon campus for Omagh College of Further and Higher Education
McAllister, Barry	Quantified risk assessment for health care facilities
McClements, Sharon	Selection of consultants based on trust
McCord, Michael J	Modelling affordability in housing markets
McGrath, John	Interchange and travel choice: implications for mode shift
McIlhatton, David	Spatial planning – cellular automata urban growth modelling
McKeown, Paul James	Legislative and operational issues for sustainable urban drainage systems
Nichols, Emma	Chemically-enhanced water mist suppression of fires
Novaes, Marcio F	Oilseed rape as a potential feedstock for domestic boilers

Name	Thesis Title
Peel, Deborah M	Towards the construction of a productive research and teaching nexus in the Built Environment
Pelan, John	Computerisation of supervision of asphalt and bitmac resurfacing contracts
Quigley, Denise	Achieving an optimum balance across capital, life-cycle and environmental costs
Quinlan, Patrick D	Enhanced integrated collectors storage solar water heaters
Rahman, Sazzadur	Knowledge-based cost model for optimising the selection of product and technology for building design
Ramos, Reynaldo	Mixed use development: practice, potential, feasibility and performance
Rolfe, Angela	Integrated wind-compressed air energy storage system with combined heating and cooling
Saffers, Jean-Bernard	Principles of hydrogen safety engineering
Said, Rosli	Evaluation of housing finance system: Assessing impacts on the housing market in Malaysia
Shamsudin, Zarina	Privatisation of property development in Malaysia: negotiation frameworks and equity sharing
Stephen, Raphael C	Application of computer assisted valuation in Grenada
Sultan, Zahid	Managing transport demand and sustainable transport
Tepe, Bulent	Evaluation of pre-treatment process in powder painting in the automotive industry
Ukleja, Sebastian S	Production of smoke and CO in enclosure fires
Vaganay, Marie	The safety impact of public roads on child pedestrians/ reducing child pedestrian casualties
Zanjiri, Yasser	Urban regeneration policies towards a sustainable urban space development in Tehran
Zao, Wei	Radiation modelling for fires
Zbikowski, Mateusz	Hydrogen deflagration-to-detonation transition and its mitigation technologies

Graduated December 2008

Name	Thesis Title
McPhillips, Karen Marie	An examination of afforestation in Northern Ireland

Graduated July 2009

Name	Thesis Title
Alhaj, Tamin	The potential of the application of photovoltaics to the housing sector and the future of energy
Al Sheriani, Mustafa	Economic globalisation and urban policy in UAE (A case study of Dubai as a global city)
Bragin, Maxim	Mechanisms of hydrogen ignition and fires
Dwyer, Scott	A method for evaluating energy-related low-carbon improvement options for urban high density social housing

Name	Thesis Title
Eadie, Robert W J	E-procurement capability maturity model for analysing the e-readiness of UK construction organisations
McGarry, Marion	The Norman revival in Irish architecture
Nguyen, Quing-Minh	The development of an advanced high temperature heat pump for domestic applications
Nursetiawan, Nursetiawan	The effect of hydraulics on the performance of bituminous materials
Rodgers, William John	An investigation into non-salt based methods of anti-icing
Singh, Harjit	An experimental study of natural convection heat and fluid flow phenomena in concentrating CPC and V-trough solar collector cavities.
Singhal, Shaleen	An evaluation of complementarities between urban regeneration and business strategies: international perspectives
Verbecke, Franck	Formation and combustion of non-uniform hydrogen-air mixtures

5. RESEARCH PUBLICATIONS

- Adair, AS, Berry, JN, Haran, M, Lloyd, MG and McGreal, WS (2009) The Global Financial Crisis: Impact on Property Markets in the UK and Ireland, University of Ulster, Belfast, pp71.
- Adair, AS, Berry, JN, Driscoll, J, van Egeraat, C, Guerra, E, McGreal, WS, Ryan, C and Vigier, F (2009) The Newry-Dundalk Twin City Region Supporting the Implementation of Cross-Border Collaborative Frameworks, International Centre for Local and Regional Development, Armagh, pp 37.
- Adair, AS, Berry, JN, Farrell, V, Haran, M, Lloyd, MG and McGreal, WS (2009) Residential Property: Valuation Practice in a Thin Market, University of Ulster, Belfast, pp 21.
- Adair, AS, Berry, JN, Haran, M, Lloyd, MG and McGreal, WS (2009) Residential Property: Contractual Obligation in the Market Downturn, University of Ulster, Belfast, pp 21.
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- Beji, J, Zhang, J, and Delichatsios, MA (2009) Soot Formation and Oxidation in Fires from Laminar Smoke Point Measurements, *Fire Safety Science* 9: 219-230.
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- Borst, RA and McCluskey, WJ (2008) The Modified Comparable Sales Method as the Basis for a Property Tax Valuations System and its Relationship and Comparison to Spatially Autoregressive Valuation Models, in Kauko, T and d'Amato, M (Eds.) *Mass Appraisal Methods: An International Perspective for Property Valuers*, Wiley-Blackwell and RICS Research, London, 49-69.

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- Boyce, KE, Purser, D and Shields, TJ (2009) Experimental studies to investigate merging behaviour in a staircase, *Proceedings 4th International Human Behaviour in Fire Symposium*, Robinson College, Cambridge, UK, 13 – 15 July 2009, 111-122.
- Bradley, D, Drysdale, D and Molkov, V (2008) *Proceedings of the 5th International Seminar on Fire and Explosion Hazards*, pp 858.
- Brennan, SL, Makarov, DV and Molkov, V (2009) LES of high pressure hydrogen jet fire, *Journal of Loss Prevention in the Process Industries*, 22 (3), 353-359.
- Brown, JL, Sivakumar, V, McKinley, JD, Harmon, N and McDonald, K (2009) The miniature wireless data-logger for pressure measurements in geotechnical engineering, *Géotechnique*, 59(2), 141-146.
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- Parsa, A, Adair, AS, McGreal, WS and Roulac, S (2008) Tall Buildings: value perspectives, Commonwealth Association of Surveying and Land Economy (CASLE) International Conference, Jordanstown, August 2008.
- Parsa, A, McGreal, WS and Zanjiri, Y (2008) Innovative Financing Vehicles for Urban Regeneration: The UK Context, Conference Regeneration and Revitalisation of Urban Distressed Areas, Ministry of Housing and Urban Development, Mashhad, December 2008.
- Peel, D (2008) Arguments for and against a Coastal and Marine National Park. The Ebb and Flow of a Policy Idea, Annual International Conference of the Royal Geographical Society (with Institute of British Geographers) London, August 2008.
- Peel, D (2008) University Challenge: Higher Education and Urban Planning, EURA Annual conference – Cities in a Knowledge-Based Society, Milan, October 2008.
- Peel, D (2009) Challenging the Lecture Theatre as an Unequal Learning Space: An Experiment in the Use of an Audience Response System, UK-Ireland Planning Research Conference Unequal Places: Planning and Territorial Cohesion, Newcastle, April 2009.
- Peel, D (2009) Creating Sustainable Communities, UK Planning Aid Conference Building Sustainable Communities, Edinburgh, April 2009.
- Peel, D (2009) Involving and Engaging: Public participation: experience from elsewhere, Community Engagement Making it Work, Edinburgh, April 2009.
- Peel, D (2009) Overcoming the majestic silence of the lecture theatre: Innovating with an audience response system, XXIII AESOP Conference Why Can't the Future be More Like the Past?, Liverpool, July 2009.
- Peel, D and Lloyd, MG (2009) Ambivalent Pasts and Branded Futures: Belfast and the Titanic Quarter, XXIII AESOP Conference Why Can't the Future be More Like the Past?, Liverpool, July 2009.

- Peel, D and Frank, AI (2009) Understanding transnational mobility: Staff, Students, and Future Employees? The Higher Education Academy 'New Perspectives on Internationalisation: Enhancing the Student Experience' Conference, Edinburgh, June 2009.
- Peel, D and Lloyd, MG (2009) Shaping Northern Ireland's Future: A multiplex response to making good a legacy of institutional deficits, Joint EURA-Urban Affairs Association Conference - 'City Futures in a Globalising World', Madrid, June 2009.
- Pemberton, S and Lloyd, MG (2008) City-regions and community planning within a devolved state: facilitating institutional de-congestion? 48th Congress of the European Regional Science Association 'Culture, Cohesion and Competitiveness: Regional Perspectives' Liverpool, August 2008.
- Pemberton, S and Lloyd, MG (2009) Emerging forms of territorial management – spatial contracts, planning and development, 23rd Congress of the Association of European Schools of Planning "Why can't the future be more like the past?" Liverpool, July 2009.
- Pemberton, S and Lloyd, MG (2009) City-regions, community planning and spatial inequalities within a devolved state: facilitating institutional de-congestion to secure territorial cohesion? UK-Ireland Planning Research Conference 'Unequal Places: Planning and Territorial Cohesion, Newcastle, April 2009.
- Redpath, D, Griffiths, P, Lo, SNG and Herron, M (2008) Experimental investigation of fluid flow regime in thermosyphon heat-pipe evacuated tube solar water heaters, PLEA 2008 – 25th Conference on Passive and Low Energy Architecture, Dublin, September 2008.
- Rezvani, S, Huang, Y, McIlveen-Wright, D and Hewitt, N (2008) Comparative assessments of physical absorption, water shift membrane reactor and chemical loop integrations in a coal fired IGCC system with CO₂ Capture, 7th European Coal Conference on Coal Research and its Applications, Coal Research Forum, Cardiff, September 2008.
- Roulac, S, Adair, AS, Lim, LC, McGreal, WS and Platt, A (2009) Quarter Century of Thought Leadership: Review/Analysis of research content of papers presented at ARES meetings over the last 25 years, 25th Annual Meeting of the American Real Estate Society, Monterey, April 2009.
- Singhal, S, McGreal, WS and Berry, JN (2008) Evaluating linkages across city competitiveness, regeneration and property-led business strategies, Commonwealth Association of Surveying and Land Economy (CASLE) International Conference, Jordanstown, August 2008.
- Singhal, S, Berry, J and McGreal S (2009) City competitiveness, regeneration and property-led business strategies, 23rd Congress of the Association of European Schools of Planning "Why can't the future be more like the past?", Liverpool, July 2009.
- Strong, WA, Woodward, WDH and Nursetiawan, N (2009) Predicting the effect of rainfall on asphalt surfacing materials. Mairepav 6, Turin, July 2009.
- Syed, MB, Hine, J, Gunay, B and Blair, N (2009) Mapping Public Transport Network Change in GIS; Advancement towards Social Inclusion or Exclusion in Belfast City, 41st UTSG Conference, London, January 2009.
- Taltavull, P and McGreal, WS (2009) Measuring price expectations: evidence from the Spanish housing market, XII Encuentro de Economía Aplicada, Asociación Libre de Economía, Madrid, June 2009.
- Tepe, B and Gunay, B (2009) Evaluation of environmentally friendly Zr based nano structured conversion coating for HRS in powder coating, 29th International Exhibition-Congress on Chemical Engineering, Environmental Protection and Biotechnology, Frankfurt am Main, May 2009.

Tepe, B and Gunay, B (2008) Corrosion protection by powder coating for high temperature applications, EuroCorr Conference, Edinburgh, September 2008.

Thompson B, Grounded Hermeneutics, Design Conference 09, Berlin, February 2009.

Thornley, P, Brammer, J, Rogers, J, Huang, Y and Rezvani, S (2009) Making Bioelectricity Economic in the UK, 17th Biomass Conference – Hamburg, June 2009.

Verbecke, F, Makarov, D and Molkov, V (2009) VLES of lean hydrogen-air deflagrations in a closed vessel 5.7 m high, Proceedings of the 6th Mediterranean Symposium on Combustion, Corsica, June 2009.

Woodside, A, Gunay, B and Rodgers, J (2008) Viable Alternatives to De-icing chemicals. Cold Comfort Conference, Cardiff, September 2008.

Yao, W, Delichatsios, MA, Beji, J and Zhang, J (2009) A simple approach of laminar soot modelling calibrated by nonsmoking, incipient-smoking and smoking ethylene diffusion flames, The 4th European Combustion Meeting 2009, Vienna, April 2009.

Yohanis, YG (2008) Benefits and possibilities of building-integrated PV in the UK, Renewable Energy RE2008, Busan, October 2008.

Yohanis, YG, Odeh, I and Norton, B (2008) Optimisation of a PV pumping system using a validated model, Renewable Energy RE2008, Busan, October 2008.

Yohanis, YG (2008) An investigation of the barriers to the reduction of energy use and implementation of renewable energy in UK dwellings, Renewable Energy RE2008, Busan, October 2008.

Yohanis, YG and Spitler, JD (2008) Investigation of the thermal and economic performance of long term under ground solar energy storage, Renewable Energy Storage Conference (IRES), Berlin, November, 2008.

Yohanis, YG and Odeh, I (2009) Performance and economic analysis of solar water pumping systems for off-grid applications, International Conference on Powering a Greener Future: Nanomaterials and Solar Energy Conversion, Solar'09, Luxor, January, 2009.

Yohanis, YG, Popel, O and Frid, SE (2009) Comparison of flat-plate and vacuum tube solar collectors for DHW, International Conference on Powering a Greener Future: Nanomaterials and Solar Energy Conversion Solar'09, Luxor, January 2009.

Zbikowski, M, Makarov, D and Molkov, D (2009) LES of a Large-Scale Detonation Experiment in the RUT Facility, Proceedings of the 22nd International Colloquium on Dynamics of Explosions and Reactive Systems, Belarus, July 2009.

6. RESEARCH FUNDING: NEW AWARDS NOTIFIED - 1 AUGUST 2008 - 31 JULY 2009

Staff Name(s)	Title of Award	Funding Body	Value
Elkadi, Prof H	The production of religious architecture in a diverse world	A.H.R.C.	£34,972
Lim, Dr LC Davis, Mr PT McCluskey, Dr WJ	Independent review of policy on location of public sector jobs	Dept. Finance & Personnel	£10,000
Woodward, Dr WDH	Sabbatical Research Funding	Aggregate Industries	£30,000
Choi, Dr SK Nadjai, Prof A	Development of Advanced PBD method for structural fire protection using innovative insulation material	Korean Ministry of Knowledge Economy	£139,606
McGreal, Prof WS Adair, Prof AS Brown, Mrs L	Resale performance of former Housing Executive property 2009	N.I.H.E.	£10,000
McGreal, Prof WS Brown, Mrs L, McAnulty, U	Private Rental Index 2009	N.I.H.E.	£15,000
Adair, Prof AS McGreal, Prof WS	Northern Ireland Quarterly House Price Index	Bank of Ireland	£22,500
Smyth, Dr MA	Additional Funding: a low cost, easy to install twin vessel integrated collector storage solar water heater using Phase change materials and vacuum technology	Invest Northern Ireland - Proof of Concept	£21,000
Delichatsios, Prof M	Fire of Pesticides: new source of Polychlorinated dibenzo-p-dioxins and dibenzofurans in the environment	Australian Research Council	£8,550
Hewitt, Prof NJ Huang, Dr Y	Sustainable fuels for marine biomass (BIOMARA)	INTERREG IVB	£230,119
Hewitt, Prof NJ McGreal, Prof WS	Emerging Technologies Evaluation Centre	D.E.L. - RCIF	£1,451,000
Blair, Dr N Adair, Prof AS	Rural Restructuring and Economic Diversification	I.C.L.R.D.	£5,800
McGreal, Prof WS Adair, Prof AS Brown, Mrs L	Northern Ireland Quarterly House price index	N.I.H.E.	£15,000

Staff Name(s)	Title of Award	Funding Body	Value
Hewitt, Prof NJ	DEL CAST AWARD - Development of a Capacity Controlled Heat Pump for Domestic Applications.	Copeland Ltd	£34,833
Hewitt, Prof NJ Adair, Prof AS Griffiths, Dr PW Lloyd, Prof MG McGreal, Prof WS Molkov, Prof V	Energy Storage	DEL - Cross-Border R&D Programme	£1,539,553
Smyth, Dr M	A low cost, easy to install twin vessel integrated collector storage solar water heater using phase change materials and vacuum technology.	Invest NI Proof of Concept funding.	£79,511
Blair, Dr N Adair, Prof As McCluskey, Dr WJ Smyth, Dr MA	Church House Research Project	Presbyterian Church in Ireland	£5,000
Nadjai, Prof A Choi, Dr S	Belfast Fire Beacon	Belfast City Council	£5,200
Hewitt, Prof NJ Hyde, Dr T Griffiths, Dr P	CALEBRE, Consumer-Appealing Low Energy technologies for Building Retrofitting	EPSRC	£251,384
Hewitt, Prof NJ	Fusion. To design, develop and test suite of online tools and interactive multimedia eLearning resources for electronic Training for Environmental and Sustainable Technologies (eTEST).Almir.	InterTadelreland	£24,750
Hewitt, Prof NJ	Fusion. To design and develop a new heat pump technology to sell as a new product range and/or as the technology to existing Refrigeration providers. Envirotech.	InterTadelreland	£47,750
Yohanis, Prof Y	Fusion. Development of small combined heat and power systems. Fingleton White Ltd.	InterTadelreland	£47,750
Yohanis, Prof Y	Fusion. Implementation of 3-D modelling and CFD analysis for building services design. Prochem Engineering Ltd.	InterTadelreland	£47,750

7. INDICATORS OF ESTEEM 2008-2009

Adair

- DRD Ministerial Appointment, Regional Development Strategy Review Group.
- UK Research Assessment Exercise 2008, member of Sub-panel 31 Town and Country Planning.
- Deputy Editor, Journal of Property Research.
- Member of Editorial Board, Journal of Property Investment and Finance, Pacific Rim Real Estate Journal, Journal of Real Estate Literature, Journal of European Real Estate Research.
- RICS Education Trust, expert assessment panel member.

Ali

- Founder, Journal of Structural Fire Engineering.
- Editor-in-Chief Journal of Structural Fire Engineering.
- Member of the Editorial Board of the Journal of Disasters Advances.
- Reviewer of the ACI (American Concrete Institute) Structural Journal.
- Member of the International Consortium/centre of excellence (CRDD) Centre of Disaster Risk Reduction.

Berry

- Member Editorial Board, Journal of Property Research.
- Associate Editor, Journal of European Real Estate Research.
- Keynote presentation launch of Newry-Dundalk Twin City Report, January 2009.

Blair

- Keynote presentation to the North-South Ministerial Council - Agriculture sector meeting - "Rural Restructuring: Local Sustainable Solutions to the Rural Challenge", invitation of Minister for Agriculture and Rural Development, July 2009.
- Reviewer, Urban Studies.

Boyce

- Member Programme Committee, 9th International Association of Fire Safety Science (IAFSS) Symposium, Karlsruhe Germany, September 2008.
- Member Programme Committee for the 4th Human Behaviour in Fire Symposium, Cambridge, UK, July 2009.
- Reviewer for: Fire Safety Journal, Journal Fire Protection Engineering and Intelligent Transportation Systems.
- Invited article, Human Behavior in Merchantile Occupancies- published July 2009 Fire Protection Engineering, Issue 43.

Boyd

- Reviewer Geotechnical Engineering.

Brennan

- Reviewer International Journal of Hydrogen Energy.

Brown

- Invited presentations: NIHE Belfast, September 2008, NHBC Templepatrick, March 2009.

Choi

- Member of Editorial Board, International Journal of Steel Structures.
- Member of Editorial Board, Journal of Structural Fire Engineering.
- Member of Scientific Committee: Applications of Structural Fire Engineering, Prague, February, 2009.

Dahoe

- Reviewer, International Journal of Hydrogen Energy.

Davis

- Member of Steering Group and central contact person for CASLE (Commonwealth Association of Surveyors and Land Economists) International Conference, August 2008.
- Invited Speaker “Payments in Lieu of Taxes – Issues and Options for Canada” A one day round table event to provide technical assistance to the Government of Canada, organized by IPTI and Public Works Government Services Canada, September 23rd 2008, Government of Canada Embassy, Berlin, Germany.

Delichatsios

- Invited keynote lectures at the conference on “Nano-filled Fire Retardant Polymers and Polymeric Composites” October 16-17 2008.
- Invited talk Seminar of Irish Engineers on CFD modelling in Fires, February 5 2009, “Modelling of the single burning item corner test”.
- Invited Speaker in Spring Computer Application School, University of Cambridge, April 2009.
- International Journal of Fire Science and Technology, Member of the Advisory Board, Center of Fire Science and Technology, TUS, Japan.
- Advisory Board, International Review of Chemical Engineering (IRECH0), Praise Worthy Prize, World of Science.
- Chairman of WG 8 on data needed for fire safety engineering in ISOTC92.
- Corrdinator of the European STREP project PREDFIRE –Nano <http://www.engj.ulst.ac.uk/predfire>, 2005 -2010.
- Scientific committtee in Fire Protection and Life Safety in Buildings and Transportation conference, Adanced Research Worksop, Santander, Spain, October 15-17 2009.
- Member of CLG Expert Panel for Fire & Resilience Directorate, UK Government, 2009.
- Organizer of Fire Science Colloquium in the 33 International Symposium on Combustion, 2010.
- Visiting Professor at the University of Poitiers.
- Visiting Professor at the COE in Fire at the Tokyo University of Science.
- Co-joint Professor at the University of Newcastle Australia.

Gray

- National Vice President of the Council of the Chartered Institute of Housing June 2009-2010, Chair the Governance Review Advisory Group, Chartered Institute of Housing January 2009- June 2010, National Treasurer of Chartered Institute of Housing Council June 2008 – June 2009, Chair of Management Board of National Council of Chartered Institute of Housing UK.
- Chair Conference of the Isles Newcastle April 2009.
- Chair Housing and Education Working Group, NIHE.
- Member of Working Group, Housing and Urban Settlements, International Federation of Housing and Planning.
- Member of the Judging Panel UK Sustainable Housing Awards, London.
- Member of the European Network for Housing Research Working Group on Private Rented Sector.
- Member of NI Business Unit Board, Chartered Institute of Housing.
- Visiting Professor of Real Estate, Spiru Haret University, Romania.
- Member of the Board of Threshold, Ireland.

Griffiths

- EU Cost ACTION TU0802 – National Expert nominated by BERR to sit as UK representative investigating phase change materials in buildings and renewables.
- Reviewer for International Journals – Renewable Energy.

Grissom

- Reviewer Journal of Public Administration.
- Reviewer Journal of Real Estate Research.

Gunay

- Referee for Transportation Research Journal - Part C, Transportation Research Board - Transportation Research Record Journal and Annual Conference, Institute of Civil Engineers – Transport Journal and Journal of Transportation Engineering.
- Referee for the 8th Transportation Congress, Istanbul, October 2009.

Heaney

- Director, Constructing Excellence in Northern Ireland.
- Member, Regional Directors Forum, Constructing Excellence.
- Committee Member, Northern Centre, the Chartered Institute of Building in Ireland.

Hemphill

- Reviewer for Urban Studies; Sustainability; Journal of Corporate Real Estate.
- Judging Panel member for Constructing Excellence NI Demonstration Projects.

Hewitt

- Invited papers, RE2008, Busan Korea, 13-17th Oct 2008.

Hine

- Adjunct Professor, Charles Sturt University, Institute of Land Water and Society and School of Humanities and Social Sciences.
- Panel Member for Sustainable Transport Round Table, Sixth International Conference on the History of Transport, Traffic and Mobility (T2M), Ottawa, Canada, September 18-21, 2008.
- Referee for ESRC and EPSRC.
- Member of DRD Integrated Transport Stakeholder Group in Northern Ireland.

Huang

- Invited paper, International Journal of Chemical Engineering, Techno-economic assessment of pulverized coal boilers and IGCC power plants with CO₂ capture.

Hyde

- Invited member to sit on the editorial board for the Journal of Building Performance.

Joseph

- Reviewer for Polymer Degradation and Stability; Functional Polymeric Materials; Fire Safety Journal; The Combustion Institute Journals.
- Secretary of the Fire Chemistry Discussion Group (a joint venture of the Society for Chemical Industry and the MacroGroup, UK).
- Member of the Environmental Health Advisory Board of Northern Ireland, UK.
- Member of the organizing committee for the Fire Retardant Technologies 2009 (FRT09), University of Central Lancashire, Preston, UK.

Kashyap

- Reviewer for Journal of Impact Assessment and Project Appraisal.
- Honorary Adviser for Gateway College of Architecture and Design, India.

Lim

- Reviewer, Journal of Valuation and Property Services.
- Member of the Steering Group CASLE International Conference, 2008.

Lloyd

- Elected Academician of the Academy of Social Sciences (AcSS), November 2008.
- Invited Visiting Professor, Department of Estate Management, Faculty of the Built Environment, University of Malaya, Kuala Lumpur.
- Appointed Patron, Planning Aid for Scotland, March 2009.
- Appointed Member of the Best Commission into The Sustainable Future for Housing in Northern Ireland in April 2009.
- Invited to become a Director of the Planning Exchange Foundation, Glasgow in November 2008.
- Invited papers: Netherlands Institute of City Innovation Studies of the Dutch Scientific Organisation, University of Amsterdam and Municipality of Almere, September 2008; Economic and Social Research Council/ Natural Environment Research Council, University of Dundee, September 2008; Environmental and Planning Law Association of Northern Ireland Conference, Belfast, September 2008, '2008 Convention of the Highlands and Islands', Inverness, The Highlands and Islands Convention, October 2008', Holyrood Communications Conference 'Climate Change: The Cost of Inaction, Edinburgh, October 2008, Department for Regional Development and Strategic Investment Board Conference 'Reviewing Northern Ireland's Regional Development Strategy', Belfast, November 2008; MacKay Hannah and Royal Town Planning Institute (Scotland) Conference Planning in Scotland: National Strategy, Local Vision, Effective Delivery, Edinburgh, November 2008; Royal Town Planning Institute Annual General Meeting and Conference, Belfast, December 2008; Faculty of Estate Management Research Seminar, University of Malaya, Kuala Lumpur, February 2009, Department of Town and Regional Planning Research Seminar, University of Sheffield, February 2009, the Scottish Government's National Planning Framework Advisory Group Seminar, Edinburgh, March 2009; 9th Holyrood Conference 'Planning a route to national reform. Examining Scotland's planning reform and indicators for change', Edinburgh, March 2009; Planning Summit 2, Scottish Government, Edinburgh, April 2009; Irish Scottish Forum for Spatial Planning, Queen's University Belfast, May 2009; Chartered Institute of Housing Annual Conference of the Isles, Newcastle, May 2009; Scottish Planning & Environmental Law Conference, Glasgow, May 2009; the AHRC Centre for Irish and Scottish Studies Conference 'The Spaces of the Nation: National Planning Framework', University of Aberdeen, College, June 2009.
- Conferences : Chair UK Planning Aid Conference 2009 'Building Sustainable Communities – the role of Planning Aid', University of Edinburgh in April 2009; track Chair of Global Planning Issues at the 23rd Congress of the Association of European Schools of Planning, University of Liverpool, July 2009.

MacIntyre

- Membership of two Chief Environmental Health Officers Forum Groups: NI Pollution Liaison Group, NI Public Health & Regulatory Group.

Makarov

- Reviewer Fire Safety Journal, Journal of Loss Prevention in the Process Industries, International Journal of Hydrogen Energy.
- Invited presentation LES of Hydrogen Releases and Combustion, meeting Combustion Theory and Modelling, Combustion Physics Group, Institute of Physics, 24 June 2009, London, UK.

McAnulty

- Member of the Private Rented Sector Consultation Network.
- Member of the European Network for Housing Research Working Group on the Private Rented Sector.
- Executive Committee Member Housing Studies Association.

McCluskey

- Appointed as Visiting Research Professor at University of Technology Malaysia, Johor Boru, Malaysia.
- Invited guest speaker at the African Tax Institute, University of Pretoria, Pretoria, South Africa.
- Board member of the International Property Tax Institute.
- Co-editor of the Journal of Property Tax Administration and Assessment.
- Member of editorial boards: Journal of Property Research (UK), Journal of Property Management (UK), Pacific Rim Property Research Journal (Aust), Journal of Financial Management of Property and Construction (UK), RICS Research Paper Series (UK).
- Reviewer: South African Journal of Economic and Management Sciences, Journal of Social Policy and Administration.

McGreal

- Adjunct Professor, University of Southern Australia, Adelaide.
- Board member of the International Real Estate Society, European Real Estate Society, Middle East and North African Real Estate Society.
- Managing Editor, Journal of European Real Estate Research.
- Member of editorial boards: Journal of Property Research (UK), Journal of Real Estate Literature (US), Journal of Real Estate Portfolio Management (US), Journal of Real Estate Education Policy and Practice (US), Journal of Corporate Real Estate (UK) and International Journal of Economics and Management (Malaysia) – International Advisory Board.
- Reviewer: Urban Studies, Cities, Town Planning Review.
- Invited presentations: NIHE Belfast September 2008, Expo-Real, Frankfurt October 2008, NHBC Templepatrick March 2009, Dubai March 2009, Madrid June 2009.

McIlveen-Wright

- Discussion Panel Member – NI Energy Forum, November 2008.
- Session Chairman - Seventeenth International Conference on Composites or Nano Engineering, ICCE-17, Honolulu, Hawaii, July 2009.
- Reviewer Fuel; Fuel Processing Technology; Biomass and Bioenergy; Renewable Energy; Energy.

Molkov

- Executive Committee member of the International Association for Hydrogen Safety (Chair of Education Committee).
- Board of Directors and Executive Committee member of the UK Hydrogen Association.
- Co-chair of Safety and Standards Committee of UKHA.
- Reviewer Combustion and Flame, International Journal of Hydrogen Energy, and symposiums: Combustion Symposium, International Symposium on Fire Safety Science.

Nadjai

- Ulster Researcher Develops Bonfire of the Future: <http://news.ulster.ac.uk/releases/2008/4077.html>.
- Official Invitation from the Algerian Government :Direction Générale de la Recherche Scientifique et du Développement technologique: Subject : Risques Majeurs, April 2009.
- Expert Evaluator to the Swiss National Science Foundation 2009.
- International PhD Examiner, University Blaise Pascal – Clermont Ferrand.
- Innovation Award 2009: Advanced Finite Element Software Development: Structures in Fire & Protection.

Novozhilov

- Invited Lecture: Advanced Modelling of Suppression: Present and Future, Rasbash Lecture 2009, The Institution of Fire Engineers.
- Visiting Professor: Japan Aerospace Exploration Agency (JAXA).
- Scientific Advisory Board member: Sixth International Seminar on Fire and Explosion Hazards.

Odeyinka

- Member of Scientific Committee: RICS COBRA 2009 Conference.
- Member of Scientific Committee: Postgraduate Researchers of the Built & Natural Environment (PRoBE) 2009 Conference.
- Member of Scientific Committee: Joint 2008 CIB W065/W055 Symposium (cib2008dubai).
- Reviewer for Journal of Financial Management of Property and Construction.
- Member of Editorial Board, Construction Research Journal.

Parsa

- Member of editorial boards: Journal of Property Research (UK), Journal of Surveying, Construction and Property (Malaysia), Local Economy (UK).
- Invited presentations: Mashhad (Iran) December 2008, Dubai March 2009, Teheran May 2009.
- Board member of the Middle East and North African Real Estate Society. Committee Member CASLE Europe Region.

Peel

- Editor Journal for Education in the Built Environment.
- Chair of the Royal Town Planning Institute Partnership Board – University of Manchester.
- Planning Summer School Council Member.
- Conference Facilitator Innovation in Built Environment Education Conference (*iBEE*) 2008.
- Reviewer for Urban Studies, Planning Theory and Practice, Urban Research & Practice, Foresight Land Use Futures and CEBE-Transactions.

Smyth

- UK patent application 0815460.1 'solar grow pyramid' August 2008.
- UK patent application 0721956.1 'solar water heater' re-filed November 2008.
- Four Invest Northern Ireland Innovation vouchers.
- Collaborative project with Housing New Zealand Corporation developing a Code of Practice for solar water heating installations.
- Organiser Solar Thermal workshop August 2008, University of Ulster, Jordanstown, through HEFE funding.
- Invited consultant to KPMG in the evaluation of the Reconnect Programme on behalf of DETI.
- External reviewer for the International Solar Energy Journal and Renewable Energy Journal.
- Chairman of the NI CIBSE regional committee (April, 2009).

Strong

- Member of the Ministerial Advisory Group on Architecture in the Built Environment.
- Member of ICE (UK) Environment & Sustainability Panel.
- Co-author of ICE (NI) Report on 'Challenging the Priorities' (2009).
- Member of UK Sustainable Development Panel.
- Reviewer for ICE Suite of Journals.
- Member of UK Research and LMI Intelligence Working Group (Construction Skills).

Thompson

- Invited member of the research committee of CIAT.

Woodward

- Invited presentation at National Conference of the Institute of Asphalt Technology, Durham, May 2009.
- International Scientific Committee - Mairepav6 Sixth International Conference on Maintenance and Rehabilitation of Pavements and Technological Control, July 2009, Torino, Italy.
- Reviewer for International Journal of Pavement, FUEL.

Yohanis

- Visiting professor of mechanical engineering, Oklahoma University, USA.
- Visiting professor, graduate programme in the Renewable Energy for Rural Development, Darma Persada, University in Indonesia.
- Invited speaker at the Renewable Energy 2008 in Korea.
- Keynote Speaker at the International Conference on Powering a Greener Future: Nanomaterials and Solar Energy Conversion, Solar'09, Luxor, Egypt, January, 2009.
- Member, International Scientific and Advisory Committee of the Conference on Powering a Greener Future: Nanomaterials and Solar Energy Conversion, Solar'09, Luxor, Egypt, January, 2009.
- Member, International Advisory Committee of Renewable Energy 2010 in Yokohama, Japan.
- Member, Technical Committee of WREC, World Renewable Energy Congress, XI, 2010, Low Energy Buildings, Abu-Dhabi.
- Reviewer for Building Services Engineering Research and Technology journal.
- Reviewer for Buildings and Energy journal.
- Reviewer for Renewable Energy journal.

Zhang

- Reviewer for Numerical Heat Transfer and Fire Technology.