

# Expression of Interest in Conducting Research: Towards Innovative Sustainable Planning and Building Design at Ella Bay

## Research Team

	<u>Positions</u>	<u>Qualifications</u>
Dr Richard Hyde	<b>Associate Professor</b> , Department of Architecture, University of Queensland, <b>Director</b> , The Centre for Sustainable Design <b>Coordinator</b> Environmental Design and Technology Area, Dep't of Architecture, University of Queensland.	<i>Ph.D, Department of Architecture</i> , Oxford Brookes University, Oxford Degree awarded by C.N.A.A. <i>Dip. Arch.</i> Birmingham Polytechnic <i>B.Sc. (Hons)</i> Birmingham School of Architecture, Aston University. <i>License to practice</i> : Royal Institute of British Architects (ARCUK qualification), Australian Accreditation Council Australia, Royal Australian Institute of Architects. <i>Certified Assessor</i> : Green Globe Design and Construct Standard and Green Globe Precinct Planning and Design Standard.
Richard Moore	<b>Development Management Consultant</b> - University of Queensland School of Architecture	<i>Fellow Chartered Institute of Building - FCIOB</i> <i>Master of Science</i> - MSc (Architecture) – University London (Bartlett) <i>Quality Management Lead Auditor/Assessor</i> (ISO 9000) <i>Building Degree</i> – BSc – Brixton School of Building (Southbank University)
Dr Lydia Kavanagh	<b>Senior Lecturer</b> , School of Engineering, The University of Queensland	<i>Grad Cert</i> (higher Education), The University of Queensland <i>PhD</i> (Engineering), The University of Queensland <i>M.Eng Sc</i> (Public Health), The University of New South Wales <i>BE (Chem Hons)</i> , The University of Queensland
Melinda Watt	<b>General Manager</b> – Benchmarking Unit, EC3 Global	<i>Bachelor of Science</i>
Jason Keating	<b>General Manager</b> - Green Globe International	<i>Master of Tourism</i> , James Cook University <i>Graduate Diploma in Business</i> , Monash University <i>Bachelor of Applied Science (Agriculture)</i> , University of Melbourne

## Background and research questions

The research team (see Appendix 1) would like to assist *Ella Bay Developments Pty. Ltd.* in their aim to create a sustainable development by identifying, assessing and validating sustainable building design and precinct planning.

The research will:

1. Identify precincts and buildings within the development which demonstrate innovative sustainable design and planning – these precincts will probably include be a demonstration resort and a demonstration house.
2. Assist with and determine the feasibility of the selected design projects as demonstration buildings and precincts for the Ella Bay development meet ‘worlds best practice’ in sustainability. This will be assessed during design and after construction of Ella Bay.
3. Identify where changes in design, planning and operation of the precincts and buildings may improve sustainability.

## Aims and objectives

The first major objective is to facilitate the development of innovative sustainable precinct planning and building design at Ella Bay. The planning and design of the whole development will be assessed on environmental, social and economic sustainability indicators. The research team will also focus on innovative sustainable outcomes for two key demonstration buildings within the

development. It is likely that a demonstration house and a demonstration resort will be assessed on sustainability indicators for the design and construction phases.

The assessment of the whole development and the assessment of particular buildings within it, may provide validation of planning and design strategies. Assessment may also highlight where further innovation can lead to improved sustainability. A management process will be provided to implement additional innovative ideas and ensure sustainable planning and design.

A second major objective is to monitor the **environmental, economic and social performance** of the precinct during **construction and after full development**. The performance of the house and resort will also be monitored through these later stages. This continued research will provide greater understanding of the future outcomes of innovative sustainable planning and design.

## Methodology

This research will be conducted by applying two sustainability standards. These standards have had extensive research conducted on them to ensure their effective application can facilitate the attainment of Best Practice in sustainable planning and design.

The *Green Globe<sup>1</sup> Precinct Planning and Design Standard* (Appendix 2) facilitates environmental, social and economic sustainability in new developments by assessing and facilitating the planning and design stages. This standard has been successfully applied to developments including Currumbin Ecovillage, Salt Village, Noosa North Shore and the Redland Community (See attached book Hyde, R.A., et al 2007).

The *Green Globe Design and Construct Standard* (Appendix 3) is a global environmental assessment tool for sustainable design and construction of new buildings. Developers are currently using these standards to drive innovative design and planning of sustainable development (Hyde et al 2006).

The standards focus on the broad impact areas to be targeted in Ella Bay's Environmental Impact Assessment. Together, the Precinct Planning and Design Standard (PPDS) and the Design & Construct Standard (D&C) concentrate on the following broad areas:

- location and siting;
- conservation and management of energy and water resources;
- solid waste management;
- selection of appropriate materials and processes;
- protection of air, earth and water; and
- social and economic issues.

During the planning and design stage (**prior to development approval**), the *Precinct Planning and Design Standard* will be applied to the whole development. An action research methodology (Groat and Wang 2002) will be used to assess and validate the sustainability of current plans and designs; highlight aspects of planning where sustainability could be improved through additional innovative strategies; and provide a process for the implementation of sustainable planning.<sup>2</sup>

Two demonstration buildings within Ella Bay will be identified. These buildings will demonstrate innovative sustainable design and will probably be a house and a resort. The *Design and Construct Standard* will be applied to these buildings at the design stage. Applying this standard will ensure innovative sustainable design by: assessing and validating the sustainability of current design and construction plans; highlighting aspects where sustainability could be improved; and providing a process for the implementation of sustainable design. After construction, the

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<sup>1</sup> Green Globe is a spin off company from the Sustainable Tourism CRC provides sustainable development standards for the Tourism and other industries. <http://www.greenglobe.org>

<sup>2</sup> Action reflection methodology uses a participatory approach to design and planning where the research team will work the design and team to explore strategies and techniques to improve the performance of the proposed

research team will continue to monitor the performance of the demonstration buildings and the whole development in terms of sustainability.

**Outcomes**

1) *Demonstration buildings*

A major outcome will be the identification of demonstration buildings – possibly a resort and or house that shows innovation in addressing issues concerning the context of Ella Bay and its response to sustainability. These will enhance promoting and other aspects of marketing the development.

2) *Under-pining innovation with ‘worlds best practice’ sustainability standards*

Meeting the respective industry standards (PPDS & D&C) will provide certification that the development meets the highest possible standards with regard to sustainability

3) *On going monitoring of environmental impacts.*

The standards can highlight aspects of planning and building design where further innovation can improve sustainability. A central part of the work will be monitoring the project post construction. A State Infrastructure Grant will be secured to fund this stage of the work.

**Funding**

<i>Activity</i>	<i>Funding Requirements</i>	<i>Source of Funding</i>
Application of the Green Globe Precinct Planning and Design Standard	\$30,000 cash \$30,000 in kind \$60 000 cash	Ella Bay Developments Sustainable Tourism CRC
House application of the Green Globe Design and Construct Standard	\$5 000 cash \$20,000 in kind	Ella Bay Developments
Resort application of the Green Globe Design and Construct Standard	\$15 000 cash \$20,000 in kind	Ella Bay Developments
Ongoing Monitoring Research	\$150 000	State Infrastructure Plan

**References**

Hyde et al, 2006, *The Environmental Brief* Taylor Francis, UK, pp350

Groat, L. and Wang D., 2002, *Architectural Research Methods*, New York: J. Wiley,.

## **Appendix 1: Curriculum Vitae's of the Research Team**

## Dr Richard Hyde

### Qualifications

#### *Degree*

Ph.D, Department of Architecture, Oxford Brookes University, Oxford Degree awarded by C.N.A.A.  
Dip. Arch. Birmingham Polytechnic B.Sc. (Hons) Birmingham School of Architecture, Aston University.  
Professional

RIBA, Royal Institute of British Architects. Licence to practice, ARCUK qualification.

AACA, Australian Accreditation Council Australia. Licence to practice, Australia.

RAIA, Royal Australian Institute of Architects.

Certified Assessor: Green Globe 21 Design and Construct Standard and Green Globe 21 Precinct Planning and Design Standard.

### Position

#### *Current*

Associate Professor, Department of Architecture, The University of Queensland, QLD, Australia.

Director, The Centre for Sustainable Design

Coordinator, Environmental Design and Technology Area, Department of Architecture, The University of Queensland.

#### *Summary of Previous Appointments*

1990-: Senior Lecturer, A/P, Dept of Architecture, University of Queensland, Australia.

1987-90: Senior Lecturer, School of Architecture, National University of Singapore, Singapore.

### Selected Activity

Designer and design research Healthy Home Project 1999-2005.

Task Leader, IEA International Task on Solar Sustainable Housing, 2005

Invited author and reviewer of ESD case studies, Environmental Design Guide, 2000-5

Environmental Protection Agency, project ESD assessment of UQ Campus buildings, UQ. 2000

Member working group, Australian Building Energy Council, 'Energy Efficient Building Case Studies' on the Internet

Eco-efficiency study, John Lang Lasalle, managers of Riverside Centre, Brisbane, 1999

Brisbane City Council, ESD Reference group member, 1999-

Briefing adviser on ESD, Thompson House, Mark Thompson, for the TVS partnership, 1999.

Thermal modelling and wind flow analysis, Thompson house, for the TVS partnership, 1999.

Design consultant on Smith ESD house, for TVS partnership, 1999

Member: Australian and New Zealand Architectural Science Association, 1999.

### Current Research Interests and Consultancy

- Currently CI for 3 ARC linkage grants and 1 CRC Grant
- Design and construction of demonstration ESD buildings.
- Consultancy activity in the fields of environmental design and evaluation; coordinated computer modelling using DOE 2 & LTV & ESPr, for over 20 companies, State & Local governments, & AGO.
- Environment monitoring of buildings, 20 buildings monitored
- Development of ESD tools. Developed Green Globe 21 Design and Construct Standards. Consultant Sundancer Spar and Beach Resort Indonesia.

**Current research staff:** three research assistants; 5 MPhl & PhDs, teaching and coordinate 4 undergraduate courses, supervision of BArch thesis students.

**Current funding sources include:** ARC, CCAA, Sustainable Tourism CRC.

**Grants:** 1 Discovery Grant (2003) 1 ARC Collab., 1 ARC SPIRT (1999); 4 small ARC; 6 CRC Sustainable Tourism(1999-2005); 20 industry scholarships and grants

**Other support:** Sustainable industry organisations

### Publications

Over 150 scientific publications: including six books, book chapters, Duality database refereed international journals and refereed conference proceedings.

## **Richard Moore**

### **Academic and industrial qualifications**

Fellow Chartered Institute of Building - FCIQB  
Master of Science - MSc (Architecture) – University London (Bartlett)  
Quality Management Lead Auditor/Assessor (ISO 9000)  
Building Degree – BSc – Brixton School of Building (Southbank University)

### **Current industrial and academic positions**

#### **Development Management Consultant - 2003 to date**

Development and Project Management of mixed use, residential and commercial developments within Brisbane and surrounding environs. Development and Build values range between \$5 and \$60million.

#### **University of Queensland School of Architecture - 2003 to date**

Sustainable Architecture and Technology, Professional Practice and Design Management

### **Previous industrial positions**

#### **Associate Director – Project Management - Countryside Properties Strategic Projects Plc 1997 - 2003**

Strategic Projects was charged with the securing future group land requirements and to develop the Built, Economic, Social, Ethical and Environmental infrastructure necessary on large mixed use developments.

### **Major industrial responsibilities have included**

- Sole responsibility for the project management, co ordination and control of major strategic developments including responsibility for future land use proposals, infrastructure and land sales.
- Management and control of external and internal consultant teams, technical support and principle and sub contractor project inputs. Project Director Responsibilities as Team Leader for specific and associated infrastructure projects such as major roads, health facilities, schools, sports centres, retail units and commercial buildings.
- Responsibility for the prediction and preparation of projected development costs.
- Administration and financial management of strategic projects cash flows. Other financial obligations e.g. consultant, supplier and contractor payments were a major responsibility within the strategic management function.
- General management responsibility within Strategic Projects for office administration and staff management.
- Company Representative for project specific Trustee Boards, Local Authority, Community and Resident liaison groups
- Member of the Environmental Policy Working Group charged with the development of the Group's Environmental, Social and Ethical policy.
- Member of the Environmental Committee, Vice Chairman of the Sustainability Focus Group and Member of the Research and Development Focus Group.
- Project Director of research project undertaken involving the investigation into 'Quality of Life' issues on large strategic mixed use developments.
- Project Director for the research project "Four Seasons" a bio diversity impact study. The project sought to measure the impact of large residential developments on sites. It also sought to establish a Toolkit for Developers in terms of actions to be undertaken pre and post development. The work is being undertaken with the local wildlife trust and conservation consultants.

### **Development responsibility has been exercised over the following schemes**

- Brisbane's first privately funded Affordable Housing scheme consisting of a \$3.5 million 34 mixed tenure units within a concrete tilt up 4 storeys building;
- Development Management of 3 six storey commercial buildings with an estimated build value of \$50million situated in the West End on the south shore of the Brisbane River;
- Strategic Infrastructure and the restoration of a listed garden and house with an adjoining housing development of some 200 mixed tenure units. Total works value in excess of \$62 million;
- An award winning \$3.75 million combined environmental education and leisure centre with adjoining playing fields situated in a Country Park and built using sustainable construction techniques and materials supported by the incorporation of many energy saving technologies;
- A \$1250 million development providing some 2000 homes for a new community of some 6000 people with a new school, church, supermarket, health facilities, pub/restaurant, sports and leisure centre, extensive open space including playing fields and a country park;
- An \$800 million Joint Venture scheme which included the reclamation of a high contaminated Island used as a Navy Base that will provide over the next decade 1,600 homes for a proposed 4,000 persons community including Infrastructure, School and Church with facilities such a playing fields, neighbourhood centre, public house, landscaped parks, riverside and marina board walks.

### **Recent industrial and academic research activity 2001 TO 2007**

Achieving best practice ecological performance on medium to large scale mixed use precinct developments. Funded research at UQ by CRC Sustainable Tourism - 2006 to date;

Green Globe Precinct Planning and Design Handbook for Travel and Tourism Developments UQ and Green Globe 2004 to date;

Green Globe Design & Construct Handbook for Sustainable Travel and Tourism developments UQ and Green Globe 2003 to 2004;

An Agenda for Urban Quality in Queensland - UDAL - 2003 to 2004

An investigation into the ability to measure "Added Value" on large developments, CPSP/New Economics Foundation 2002.

Trails of the "Key Indicator Tool Kit" on large projects, New Economics Foundation - 2002.

A study into the use of Social Capital on large residential developments CPSP/New Economics Foundation - 2001 to 2003;

The investigation into and creation of Key Indicators for the measurement of the 'Quality of Life' on Large Housing Developments. CPSP/New Economics Foundation - 2001 to 2003;

### **Industrial conferences lectures given – 2001/2007**

- 'Quality of Life' Auditing - ANZScA Conference Adelaide 2006
- Project Management Delivering a Sustainable Agenda - CIOB Brisbane - 2006
- Green Globe PPDS and Design & Construct Standard Training Course (Presenter) – China 2006
- PPDS in Action - Cutting Edge Conference UK 2006
- Another Tool A Precinct Planning and Design Model - ANZScA Conference New Zealand 2005
- Green Globe Design & Construct Standard Training Course (Presenter) – Queensland 2004
- Ethical and Social Responsibility for Developers (Speaker) – Presentation on how Developers can undertake ethical and social developments – CITB London 2002
- Quality of Life (Panel Expert and Speaker) - Presentation of initial findings of joint research work with NEF – Sustainable Housing Conference – London 2001
- The Changing Construction Industry (Panel Expert) CIREA - London 2001

### **Publications**

Over 20 publications including refereed international journal articles, conference papers and book chapters. A prize winner in the CIOB International Innovation Award 2007.

## **Dr Lydia Kavanagh**

*Email: l.kavanagh@uq.edu.au*

### **Current Position and Level of Academic Appointment**

Senior Lecturer, Level C

### **Qualifications**

Grad Cert (higher Education, The University of Queensland, 2004  
PhD (Engineering), The University of Queensland, 2003  
M.Eng Sc (Public Health), The University of New South Wales, 1988  
BE (Chem Hons), The University of Queensland, 1985

### **Membership of Professional Bodies**

1995- Engineers Australian, Member  
1986-1995 Engineers Australian, Graduate Member  
1986- Australian Water Association, Member  
2003- Australasian Association of Engineering Education, Member

### **Academic Appointment Record**

2006- Senior Design Lecturer, School of Engineering, The University of Queensland  
2000-2005 Lecturer, Chemical Engineering, The University of Queensland  
1998-2002 Research Scholar, AWMC, The University of Queensland

### **Previous Industrial Appointments**

1995-1996 Senior Process Engineer, CMPS&F Consultant Engineers, Brisbane  
1994-1995 Principal Process Engineer, Acer Environmental Consultant Engineers, UK  
1992-1993 Senior Process Engineer, Acer Environmental Consultant Engineers, UK  
1990-1991 Process Engineer, Acer Environmental Consultant Engineers, UK  
1989-1990 Process Engineer, Water Research Centre, UK  
1986-1988 Graduate Engineer, Camps Scott Furphy Consultant Engineers, Sydney

### **Engineering Research Field and Publication Count**

- Sustainable design: precincts, buildings, water management, waste, learning organisations
- Engineering education

Number of refereed journal and conference publications: 14  
Number of non-refereed journal and conference publications: 16  
Number of technical reports: 3 (whilst in academia only)



## Melinda Watt

### Qualifications

Bachelor of Science

### Recent Relevant Experience

Melinda Watt is the General Manager of Earthcheck and is responsible for the day-to-day world-wide operational management of the organization. As a consequence, she travels extensively, both promoting the system and providing technical support to customers. She was involved from the start in the evolution of earthcheck™ benchmarking indicators for the travel and tourism industry, at both operational and community levels. These indicators and benchmarking system are used under license by the global benchmarking, certification and improvement system for sustainable travel and tourism, Green Globe 21.

Melinda has been the driving force in promoting the Earthcheck benchmarking system in areas other than travel and tourism. The other areas currently using the system include local government (Earthcheck for Households (GCCC) and Savings in the City(MCC)) the development industry (PPDS) and also state government(NSWNPWS EMS reporting).

Prior to this she was General Manager, Centre for Integrated Environmental Protection, Griffith University. Work here included included key involvement in the following areas:

- The groundbreaking research and development, in conjunction with the CRC for Sustainable Tourism and a variety of industry partners, to define and design the earthcheck™ system of benchmarks and reports.
- Developing a framework for assessing the environmental performance of a tourism and travel destination: a program to determine effective and relevant benchmarks that differentiate and market a destination to consumers by its overall superior performance as judged by credible sustainability criteria. The results lead on to the development of an integrated database for destinations that want to position themselves positively with in the tourism market
- Comprehensive environment tools for sustainable infrastructure: a project that aimed to improve the environmental and economic performance of sustainable tourism infrastructure through providing evidence of effective and efficient environmental design practices and by using the output tool produced to promote industry
- Development of the Green Globe Precinct Planning and Design Standard. The standard provides the guidelines and methods to help Developers achieve their sustainable design goals and by doing so, help them conform to the Green Globe 21 assessment criteria.

### Publications

Indicators of Sustainable Development for Tourism Destinations – a Guidebook, World Tourism Organisation, 2004.

Scott, J A; Watt, M; Beckenham, T. 2004, "Travel & Tourism Industry Benchmarking Methodologies". GREEN GLOBE Asia Pacific: Canberra.

Scott, J A; Watt, M. 2003, "Community Benchmarking Methodologies". GREEN GLOBE Asia Pacific: Canberra

Hyde, R.A, Prasad, D., Scott, A., Kraatz, J. And Watt, M., 'Green Globe Design

Phase Assessment For Tourism Facilities And Infrastructure.' In the proceedings of the *International Conference on Sustainability*, Oslo, Norway, 2002, paper 501.

Hyde,R A,Watt,M. 2004,"Environmental Assessment and the Building Design Process: A case study of the Green Globe Design and Construct Standard"

Hyde,R A ,Watt,M. 2005 ,"Environmental Assessment and the Building Design Process: Towards a Precinct Planning and Design Standard (PPDS)."

Hyde, R.A., Moore R., Kavanagh, L., Watt, M., Prasad, D., and Blair, J.2005, "Developing an environmental design framework for a Precinct Planning and Design Standard (PPDS)"

## Jason Keating

### Summary

- Strong commercial and academic background enhanced through multifaceted experience at a community and government level and strengthened through direct employment in related fields
- Solid understanding of business development and management relating to the professional services sector and resource management
- Recorded achievements in relation to program and project development

### Qualifications

2001	<b>James Cook University</b> Master of Tourism
2000	<b>Monash University</b> Graduate Diploma in Business
1994	<b>University of Melbourne</b> Bachelor of Applied Science (Agriculture)

### Employment History

2007 – Present	<b>EC3Global Pty. Ltd, Australia</b> Position held: Green Globe International General Manager
2006 – 2007	<b>Green Globe Asia Pacific Pty. Ltd., Australia</b> Position held: General Manager
2004 – 2006	<b>AUSTRADE (Australian Trade Commission), Australia</b> Position held: Manager New Projects, Exporter Development Deputy State Manager NSW/ACT
2002 – 2004	<b>State Government of Victoria, Australia</b> Position held: Market Development Manager
2001 – 2002	<b>International Finance Corporation, South Pacific Project Facility, Australia</b> Position held: Short-term consultant
2000 – 2002	<b>Westfalia Landtechnik Australia, Australia</b> Position held: Area Manager VIC/TAS/QLD
1999	<b>Kerry Agribusiness, Ireland</b> Position held: Development Advisor
1995 – 1998	<b>Pivot Agribusiness, Australia</b> Position held: State Sales Manager Tasmania Productivity Specialist
1993 – 1995	<b>Alambie Wine Company, South Australia, Australia</b> Position held: Assistant Manager (Production Horticulture) Trainee Manager

**Appendix 2:  
Precinct Planning and Design Standard**

## **Appendix 3 Design and Construct Standard**

**Attachment**

**Planning and Design Standard for Improving Sustainability of Neighbourhoods and Precincts**