

## SUMMARY FOR BENCHMARKING

### How well is interdisciplinary learning supported by the assessment design?

This study focuses on the development of students' integration of theory and practice within a work-focused environment. Students coming from an identified group of related disciplines work together on the production of an outcome for a client, making use of the resources and supports offered by the institution as part of this study undertaking. There is a strong emphasis on students' individual development highlighted by assessment criteria and weighting.

### How well does the assessment design fit the ID cohort?

#### Does it fit the level of *student expertise*?

The framing and scaffolding of the course uses a project focus to bring students together around a shared challenge, but also identifies deliverables and approaches that can be effectively supported by teaching staff and institution resources.

#### Does it respond to the *range and style of cohort learning expectations*?

The students are drawn from a number of related courses within Art and Design. The project-focused approach is suitable to this cohort mix, although the particular approaches to preparatory research and other activity may be nuanced according to specialisation.

### How well does the assessment design align to intended ID learning outcomes?

#### Do the *tasks and criteria* sufficiently support development of students' *disciplinary practices* ?

The assessment tasks and learning outcomes offer a range of ways students may engage with the assessment activities. Extension of students' disciplinary / personal practices will be influenced by the particular project work undertaken for each client. Those projects that focus on spatial outcomes, for example, have required and offered additional skill building opportunities to students from those backgrounds.

#### Do the *tasks and criteria* sufficiently support development of students' *interdisciplinary skills* ?

The development of broad interdisciplinary skills is supported by the team approach to production. Students are encouraged and supported to develop key professional and integrative skills, and learning outcomes identify 'self-organisation,' 'time management'; and 'interpersonal skills' as particular and relevant outcomes for the study.

#### Do the student / staff roles influencing *project direction / aims* support the ID learning outcomes?

The initial brief is negotiated and provided by staff, with a view to the potential of the student group and the opportunities for its delivery in timetabled classes and using suitable resources and supports. Students research and develop an interpretation of this guidance to develop a 'return brief', refining the aims of the assessment task in the process.

#### Do the student / staff roles influencing *project process / development* support ID learning outcomes?

The investigation and development of the project response is led by students, with advice from staff at intervals. The demonstration of skills in response to design challenges, including strategic approaches to the investigation of context and potential, is identified through learning outcomes. Students may document this in a Log of Learning Activities.

## UNIT/SUBJECT/COURSE OUTLINE + OUTCOMES

This 3<sup>rd</sup> year course provides students with the opportunity for work experience in a design studio setting on projects developed in collaboration with community, local government and the non-profit sector. The aim is to provide a bridge between theory and practice, build understanding and interdisciplinary experience of complex problems and foster the development of reflective practice. Students will gain a refined understanding of what to bring to a complex problem from their disciplinary-specific skills, where to concede to other disciplinary expertise and how they intersect. A Design Futures framework will be used to develop an understanding and assessment of socially and environmentally responsible projects.

### Learning Outcomes:

- Understand the complexity and relational nature of real design problems and how to respond to them.
- Demonstrate the relevant competencies, technical skills and knowledge required by your role.
- Use higher order strategic thinking to tackle and respond to practice design problems.
- Demonstrate self-organisation and time-management skills to work independently and take initiatives.
- Use interpersonal skills to facilitate team work and communication.
- Demonstrate an understanding of the organisation for which you are designing and the context of its business.
- Identify the relevance of a correlation between learning and professional practice in the development of both.
- Demonstrate an ability to critically reflect on your own practice and current professional practice.
- Present design processes, design thinking, research and ideation with confidence and credibility.

## UNIT/SUBJECT/COURSE ACTIVITIES & ASSESSMENT TASKS

**Assignment – Practice-based Assignment 50%** - This task has two assessment parts

**Instructor Evaluation 30%** student performance will be evaluated by the instructor at week 7 and week 13, in consultation with the community, government or industry partner and peers. Students will be assessed on:

- problem definition, approach and resolution
- productivity
- communication skills
- team work
- self-confidence and independent judgement

**Student Self Reflection 20%** a survey/questionnaire will be used in weeks 7 and week 14 to prompt reflection on the Work-integrated learning experience.

**Log of Learning Activities 50%** Students will be required to maintain a journal which reflectively documents their Work-integrated learning experience and assesses their learning against the learning objectives listed in this course profile. The portfolio should provide evidence of all design research, thinking, iterative process work and outcomes pertaining to the given project. Written annotations should be added toward the end of the project to reflect on what was learned in light of:

- client, instructor and peer feedback,
- practical and logistical demands of the project and materials used
- customer or audience feedback (real or anticipated)
- social and environmental concerns
- industry standards and practices (including their limitations)

## ASSESSMENT CRITERIA / MARKING

- Problem definition, approach and resolution
- Productivity
- Communication skills
- Team work
- Self-confidence and independent judgement
- Critical insight and analysis of problems and processes.
- Relevance to client brief.
- Quality of presentation to client.
- Demonstrated understanding of redirective design approach.
- Quality and professionalism of journal documentation.

# 1. General Course Information

## 1.1 Course Details

COURSE CODE	3596QCA
COURSE TITLE	Socially and Environmentally Responsible Design
ACADEMIC ORGANISATION	QCA Queensland College of Art
SEMESTER	Semester 1 2016
MODE	In Person
LEVEL	Undergraduate
LOCATION	South Bank, On Campus
CREDIT POINT VALUE	10

## Course Description:

This course provides students with the opportunity for work experience in a design studio setting on projects developed in collaboration with community, local government and the non-profit sector. The aim is to provide a bridge between theory and practice, build understanding and interdisciplinary experience of complex problems and foster the development of reflective practice. Students will gain a refined understanding of what to bring to a complex problem from their disciplinary-specific skills, where to concede to other disciplinary expertise and how they intersect. A Design Futures framework will be used to develop an understanding and assessment of socially and environmentally responsible projects.

## Assumed Background:

Students must have completed 60CP of Studio Foundation and at least 40P in a Design Studio Major.

## 1.2 Course Introduction

The LiveSpace studio for Socially and Environmentally Responsible Design was established in 2014, supported by a University learning and teaching grant to explore student learning on real-world projects from a campus studio base. In its first 18 months, LiveSpace has initiated urban design, retrofitting and exhibition projects using salvaged and reusable materials in collaboration with several local bodies, including a shire council, city council, state museum and state library. Students work in multidisciplinary teams on a project led by one of the major convenors. By putting Design Futures theory to the test in real world design problems practical skills, the LiveSpace studio prepares graduates for employment in an uncertain future of complex challenges.

## 2. Aims, Outcomes & Graduate Attributes

### 2.1 Course Aims

This course is dedicated to the student undertaking work integrated learning based in a Design studio at QCA. The cohort-based system used in LiveSpace facilitates critical and practical learning about current practices; by supporting tutor-mediated engagement with industry or community and peer-to-peer learning, the LiveSpace environment aims to build graduate confidence and work-readiness with a blend of theoretical and practical skills. By providing a simulation of a professional studio in the classroom, supporting work-integrated learning on real-world projects scaffolded by higher order thinking, LiveSpace presents a form of “mimetic” learning, which can potentially also present an opportunity to “transform what constitutes...occupational practice.” (Billett 2014: 100). This is in contrast to learning driven by a tacit “wisdom of practice” whereby industry

standards are perceived to override the often longer-term goals of a tertiary level education (Cooper, Orrell and Bowden 2010: 102; Billett 2014: 100).

## 2.2 Learning Outcomes

After successfully completing this course you should be able to:

- 1 Understand the complexity and relational nature of real design problems and how to respond to them.
- 2 Demonstrate the relevant competencies, technical skills and knowledge required by your role.
- 3 Use higher order strategic thinking to tackle and respond to practice design problems.
- 4 Demonstrate self-organisation and time-management skills to work independently and take initiatives.
- 5 Use interpersonal skills to facilitate team work and communication.
- 6 Demonstrate an understanding of the organisation for which you are designing and the context of its business.
- 7 Identify the relevance of a correlation between learning and professional practice in the development of both.
- 8 Demonstrate an ability to critically reflect on your own practice and current professional practice.
- 9 Present design processes, design thinking, research and ideation with confidence and credibility.

## 2.3. Graduate Attributes

Griffith University aims to prepare its graduates to be leaders in their fields by being:


- Knowledgeable and Skilled in their Disciplines
- Effective Communicators and Team Members
- Innovative and Creative with Critical Judgement
- Socially Responsible and Engaged in their Communities
- Competent in Culturally Diverse and International Environments


University wide attributes


GRADUATE ATTRIBUTE	LEARNING OUTCOMES
<b>A. KNOWLEDGEABLE AND SKILLED IN THEIR DISCIPLINES</b>	
<b>A1.</b> Comprehensive knowledge and skills relating to their disciplines	1, 2, 3, 9
<b>A2.</b> An interdisciplinary perspective	1, 2, 3
<b>A3.</b> Capacity to find, evaluate and use information	1, 2, 3, 4, 9
<b>A4.</b> Ability to apply discipline/professional skills and knowledge in the workplace	1, 2, 3
<b>B. EFFECTIVE COMMUNICATORS AND TEAM MEMBERS</b>	
<b>B1.</b> Capacity to communicate effectively with others orally	1, 2, 3, 5, 8, 9
<b>B2.</b> Capacity to communicate effectively with others in writing	1, 2, 3, 5, 8, 9
<b>B3.</b> Capacity to communicate effectively with others using ICTs, multimedia, visual, musical and other forms appropriate to their disciplines	5, 9
<b>B4.</b> Capacity to interact and collaborate with others effectively, including in teams, in the workplace, and in culturally or linguistically diverse contexts	2, 3, 5, 8, 9
<b>C. INNOVATIVE AND CREATIVE WITH CRITICAL JUDGEMENT</b>	
<b>C1.</b> Ability to use knowledge and skills to devise solutions to unfamiliar problems	1, 2, 3, 4, 6, 8, 9
<b>C2.</b> Ability to analyse and critically evaluate arguments and evidence appropriate to their disciplines (eg collect, analyse and interpret data and information, generate and test hypotheses, synthesise and organise information)	1, 3, 6, 8, 9
<b>C3.</b> Knowledge of research methodologies in their disciplines and capacity to interpret findings	1, 2, 3, 6, 8, 9
<b>C4.</b> Ability to generate ideas/products/art works/methods/approaches/perspectives as appropriate to the discipline	2, 3, 6, 8, 9
<b>D. SOCIALLY RESPONSIBLE AND ENGAGED IN THEIR COMMUNITIES</b>	
<b>D1.</b> Ethical awareness (professional and personal) and academic integrity	3, 4, 5, 7, 8
<b>D2.</b> Capacity to apply disciplinary knowledge to solving real life problems in relevant communities	2, 3, 4, 5, 7, 9
<b>D3.</b> Understanding of social and civic responsibilities, human rights and sustainability	1, 3, 4, 5, 7
<b>D4.</b> Understanding the value of further learning and professional development	1, 4, 5, 6, 7
<b>E. COMPETENT IN CULTURALLY DIVERSE AND INTERNATIONAL ENVIRONMENTS</b>	
<b>E1.</b> Awareness of and respect for the values and knowledges of Australian Aboriginal and Torres Strait Islander First Peoples	4, 5
<b>E2.</b> Respect, awareness, knowledge and skills to interact effectively in culturally or linguistically diverse contexts	4, 5
<b>E3.</b> A global and international perspective on their disciplines	3, 4, 5, 6, 8, 9

## 3. Learning Resources


### 3.2 Recommended Resources


Billett, Stephen. "Mimetic Learning in and for Work." *Mimetic Learning at Work*. Springer International Publishing, 2014. 1-21. 


Buchanan, Richard. "Wicked Problems in Design Thinking". Victor Margolin and Richard Buchanan, eds. *The Idea of Design*. Cambridge: MIT Press 1995. pp3-20 

Cooper, Lesley, Janice Orrell, and Margaret Bowden. *Work integrated learning: A guide to effective practice*. Routledge, 2010. 

Fry, Tony, 2009, *Design Futuring: Sustainability, Ethics and New Practice*, Berg, London.

Rittel, Horst W. J., & Webber, Melvin M, 1973, Dilemmas in a General Theory of Planning. *Policy Sciences*, 4, 155-169. 

Schön, D A, 1983, *The Reflective Practitioner: How Professionals Think in Action*, Arena, Aldershot, UK. 

Wood, John, 2007. *Design for Micro-utopias: Making the unthinkable possible*. Aldershot: Gower. 

## 4. Teaching & Learning Activities

### 4.1 Learning Activities

Week Commencing	Activity	Learning Outcomes
29 Feb 16 - 10 Jun 16	<b>Work Integrated Learning Program (Studio):</b> This course involves students undertaking work-integrated learning (WIL) for 140 hours in a campus studio setting, in field work, at client meetings and other non-contact hours. Projects are selected by course convenors.	1, 2, 3, 4, 5, 6, 7, 8, 9

### 4.2 Other Teaching and Learning Activities Information

The day-to-day organisation, supervision and facilitation of this Work-integrated Learning Program will be managed through the appropriate major within QCA Design, ie. interior environments, product design or visual communication design. The convenors of these three majors will be individual supervisors, responsible for liaising with government, industry or community organisations, overseeing student work and assessment, and allocating tasks depending on the design brief as received and interpreted by the LiveSpace team.

The teaching approach will emphasise self-evaluation, peer reporting and review, and formative feedback.

## 5. Assessment Plan

### 5.1 Assessment Summary

This is a summary of the assessment in the course. For detailed information on each assessment, see [5.2 Assessment Detail](#) below.

ASSESSMENT TASK	DUE DATE	WEIGHTING/ MARKED OUT OF	LEARNING OUTCOMES
Assignment - Practice-based Assignment Professional Practice Feedback	11 Apr 16 - 3 Jun 16	50%/100	1, 2, 3, 4, 5, 6, 7, 8, 9
Log of Learning Activities Reflective Journal	2 Jun 16	50%/100	1, 2, 3, 4, 5, 6, 7, 8, 9

## 5.2 Assessment Detail

Professional Practice Feedback

**Type:** Assignment - Practice-based Assignment

**Learning Outcomes Assessed:** 1, 2, 3, 4, 5, 6, 7, 8, 9

**Due Date:**

11 Apr 16 - 3 Jun 16

**Weight:** 50%

**Marked out of:** 100

**Task Description:**

**Instructor evaluation (30%):** student performance will be evaluated by the instructor at week 7 and week 13, in consultation with the community, government or industry partner and peers. Students will be assessed on:

1. problem definition, approach and resolution
2. productivity
3. communication skills
4. team work
5. self confidence and independent judgement

**Student self reflection (20%):** a survey/questionnaire will be used in weeks 7 and week 14 to prompt reflection on the Work-integrated learning experience.

**Criteria & Marking:**

1. problem definition, approach and resolution
2. productivity
3. communication skills
4. team work
5. self confidence and independent judgement

**Submission:**

Learning is most effective in this course when students and staff engage face-to-face; unless informed otherwise, to be eligible for assessments of their learning students must attend 80% of all tutorials and lectures in this course.

**This assessment item:**

- is a school based activity
- is an individual activity
- includes a self assessment activity

Reflective Journal

**Type:** Log of Learning Activities

**Learning Outcomes Assessed:** 1, 2, 3, 4, 5, 6, 7, 8, 9

**Due Date:**

2 Jun 16

**Weight:** 50%

**Marked out of:** 100

**Task Description:**

Students will be required to maintain a journal which reflectively documents their Work-integrated learning experience and assesses their learning against the learning objectives listed in this course profile. The portfolio should provide evidence of all design research, thinking, iterative process work and outcomes pertaining to the given project. Written annotations should be added toward the end of the project to reflect on what was learned in light of:

- client, instructor and peer feedback,
- practical and logistical demands of the project and materials used
- customer or audience feedback (real or anticipated)
- social and environmental concerns
- industry standards and practices (including their limitations)

**Criteria & Marking:**

1. Critical insight and analysis of problems and processes.
2. Relevance to client brief.
3. Quality of presentation to client.
4. Demonstrated understanding of redirecive design approach.
5. Quality and professionalism of journal documentation.

Learning is most effective in this course when students and staff engage face-to-face; unless informed otherwise, to be eligible for assessments of their learning students must attend 80% of all tutorials and lectures in this course.

**This assessment item:**

- is a school based activity
  - is an individual activity
  - includes a self assessment activity
- 

## 5.4 Other Assessment Information

**Professional Practice feedback:**

Formative (week 7) and summative feedback (week 13) will be provided by instructor, taking into account client feedback. (30%)

Self reflection will take the form of a survey response at week 7 and week 14, written by the student based on the learning outcomes of the Work integrated learning experience. (20%)

**Journal:**

The log of learning activities will be assessed at the end of the project; however, a spiral-bound journal for this purpose must be purchased in advance of the course and used throughout. Mid-point formative feedback will be included in the course.

## Learning Summary

Below is a table showing the relationship between the learning outcomes for this course and the broader graduate attributes developed, the learning activities used to develop each outcome and the assessment task used to assess each outcome.

## Learning Outcomes

After successfully completing this course you should be able to:

- 1 Understand the complexity and relational nature of real design problems and how to respond to them.
- 2 Demonstrate the relevant competencies, technical skills and knowledge required by your role.
- 3 Use higher order strategic thinking to tackle and respond to practice design problems.
- 4 Demonstrate self-organisation and time-management skills to work independently and take initiatives.
- 5 Use interpersonal skills to facilitate team work and communication.
- 6 Demonstrate an understanding of the organisation for which you are designing and the context of its business.
- 7 Identify the relevance of a correlation between learning and professional practice in the development of both.
- 8 Demonstrate an ability to critically reflect on your own practice and current professional practice.
- 9 Present design processes, design thinking, research and ideation with confidence and credibility.

## Assessment & Learning Activities

LEARNING ACTIVITIES	LEARNING OUTCOMES								
	1	2	3	4	5	6	7	8	9
Work Integrated Learning Program (Studio)	•	•	•	•	•	•	•	•	•
ASSESSMENT TASKS									
Professional Practice Feedback	•	•	•	•	•	•	•	•	•
Reflective Journal	•	•	•	•	•	•	•	•	•

# Graduate Attributes

Griffith University aims to prepare its graduates to be leaders in their fields by being:

- Knowledgeable and Skilled in their Disciplines
- Effective Communicators and Team Members
- Innovative and Creative with Critical Judgement
- Socially Responsible and Engaged in their Communities
- Competent in Culturally Diverse and International Environments

University wide attributes

GRADUATE ATTRIBUTES	LEARNING OUTCOMES								
	1	2	3	4	5	6	7	8	9
<b>A KNOWLEDGEABLE AND SKILLED IN THEIR DISCIPLINES</b>									
A1. Comprehensive knowledge and skills relating to their disciplines	•	•	•						•
A2. An interdisciplinary perspective	•	•	•						
A3. Capacity to find, evaluate and use information	•	•	•	•					•
A4. Ability to apply discipline/professional skills and knowledge in the workplace	•	•	•						
<b>B EFFECTIVE COMMUNICATORS AND TEAM MEMBERS</b>									
B1. Capacity to communicate effectively with others orally	•	•	•		•			•	•
B2. Capacity to communicate effectively with others in writing	•	•	•		•			•	•
B3. Capacity to communicate effectively with others using ICTs, multimedia, visual, musical and other forms appropriate to their disciplines					•				•
B4. Capacity to interact and collaborate with others effectively, including in teams, in the workplace, and in culturally or linguistically diverse contexts		•	•		•			•	•
<b>C INNOVATIVE AND CREATIVE WITH CRITICAL JUDGEMENT</b>									
C1. Ability to use knowledge and skills to devise solutions to unfamiliar problems	•	•	•	•		•		•	•
C2. Ability to analyse and critically evaluate arguments and evidence appropriate to their disciplines (eg collect, analyse and interpret data and information, generate and test hypotheses, synthesise and organise information)	•		•			•		•	•
C3. Knowledge of research methodologies in their disciplines and capacity to interpret findings	•	•	•			•		•	•
C4. Ability to generate ideas/products/art works/methods/approaches/perspectives as appropriate to the discipline		•	•			•		•	•
<b>D SOCIALLY RESPONSIBLE AND ENGAGED IN THEIR COMMUNITIES</b>									
D1. Ethical awareness (professional and personal) and academic integrity			•	•	•		•	•	
D2. Capacity to apply disciplinary knowledge to solving real life problems in relevant communities		•	•	•	•		•		•
D3. Understanding of social and civic responsibilities, human rights and sustainability	•		•	•	•		•		
D4. Understanding the value of further learning and professional development	•			•	•	•	•		
<b>E COMPETENT IN CULTURALLY DIVERSE AND INTERNATIONAL ENVIRONMENTS</b>									
E1. Awareness of and respect for the values and knowledges of Australian Aboriginal and Torres Strait Islander First Peoples				•	•				

<b>E2. Respect, awareness, knowledge and skills to interact effectively in culturally or linguistically diverse contexts</b>				●	●				
<b>E3. A global and international perspective on their disciplines</b>			●	●	●	●		●	●



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# **Socially and Environmentally Responsible Design Process: A Cross Disciplinary Approach**

**Naomi Hay**, Griffith University, [n.hay@griffith.edu.au](mailto:n.hay@griffith.edu.au)

**Petra Perolini**, Griffith University, [p.perolini@griffith.edu.au](mailto:p.perolini@griffith.edu.au)

**Beck Davis**, Griffith University, [beck.davis@griffith.edu.au](mailto:beck.davis@griffith.edu.au)

**Peter Hall**, Griffith University, [p.hall@griffith.edu.au](mailto:p.hall@griffith.edu.au)

## **Abstract**

Global communities are faced with escalating challenges of climate change, resource depletion, increasing waste, urban decay, population fluctuations and displacement of the geographically, politically and economically disadvantaged. Within this context, it is time to re-think the circumscribed boundaries of current design practice, re-directing the agenda of design to explore a cross-disciplinary approach to the increasing levels of risk in the built environment, to ensure sustainable long-term futures.

This paper will provide an account of a current initiative in “pedagogical praxis” (Shaffer 2004) called LiveSpace, a studio for Socially and Environmentally Responsible Design based at Griffith University. Using as a case study a project developed in Charleville, Western Queensland the paper demonstrates a means of addressing expanding complex regional issues through an authentic cross-disciplinary approach to design education and design thinking. By creating an “experimental learning environment” (Shaffer 2004), LiveSpace aims to prepare graduates for future work practices, as well as establishing a framework for inventing new participatory approaches in collaboration with communities, local government, businesses and not for profit groups.

*Design education; LiveSpace; Re-directive practice; Socially responsible design; Sustainability*

Urban and regional centres are inherently transitional; they do not exist in a constant state of equilibrium. Recognising this is important as Australia’s population is projected to reach 35.9 million by 2050 and is heavily urbanised with 88% of Australians living in metropolitan areas (State of the Environment Committee, 2011, pp. 43,54). As urban footprints expand, increases in infrastructure, housing, energy utilisation, resource consumption, pollution and

waste all place further strain on the environment and associated resources. Simultaneously, many rural and regional towns continue to struggle with population losses, economic downturns and subsequent social ramifications. This includes an increase in regional displacement, with populations shifting away from regional areas toward metropolitan centres.

Significant challenges are further faced in the context of climate change and how we can learn to mitigate impacts and adapt to future scenarios. The Intergovernmental Panel on Climate Change's (IPCC) Fifth Assessment Report confirms that Australia's climate is warming, a trend virtually certain to continue through the 21st century, consistent with global scenarios (IPCC, 2014, pp. 3-4). As the driest inhabited continent on earth, much of Australia is particularly vulnerable to future effects of climate change. Average temperatures in Australia have risen by nearly 1 degree Celsius since 1910 and it has been projected that by 2050 further warming may range from .08 degrees to 1.8 degrees Celsius (State of the Environment Committee, 2011, p. 48). Projected concerns of this change include rising snow lines, drying in the Southern states leading to increased mega-fires; shorter but more intense wet seasons in the tropics leading to increase frequency and severity of flooding, an increase in the intensity of storms and cyclones, and projected sea level rises (State of the Environment Committee, 2011, p. 835).

The capacity of our built environments to adapt to such future challenges becomes increasingly compromised as levels of risk increase. While adaptation to climate change in Australia is becoming embedded in some planning processes, this is occurring largely at the conceptual level, rather than at the implementation stage. The IPCC report recommends the facilitation of community participatory processes to adaptation at a local level as a method of balancing community preferences with scientific information and ensuring ownership of processes by local communities (IPCC, 2014, pp. 3-5, 88). The project introduced in this paper provides an example of a community driven approach to resilience building, in this instance in the context of the complex challenges faced by the Regional town of Charleville. The paper reports on a "thickly authentic" (Shaffer & Resnick, 1999) approach to redirecting design practice through pedagogy, which aligns learning with community needs, goals that are meaningful to students and the reflective practice theorised by Donald Schön.

## **A Re-Directive Approach**

Design practitioners commonly operate within specified disciplinary boundaries, approaching solutions to design problems in isolation. Furthermore, design decisions are commonly made as a reflection of client demands framed within short-term agendas. Design problems, described as 'wicked problems' by Rittel and Webber (1973, pp.155-169) are subject to multiple stakeholders with conflicting views, requirements and agendas. Separating disciplinary rationales predefines problems within narrow contexts and therefore limits understanding of the problem's complexity. Addressing the complexity of wicked design problems requires radical change in thinking and behaviours across the design

community as a whole, including design education.

The Bachelor of Design Futures offered at Griffith University Queensland College of Art introduces a radical shift in design thinking and research practice. The degree recognises that many current social and environmental issues have been brought about by design, and therefore, designers must be educated to deal with these repercussions in order to achieve transformative change<sup>1</sup>. In the curriculum, students majoring in Interior Environments<sup>2</sup>, Product Design<sup>3</sup>, Visual Communication Design<sup>4</sup> and Design Futures are encouraged to become inter-disciplinary practitioners, researchers and design strategists to bring about real change for positive futures.

The shift towards more sustainable modes of design and its physical outcomes has led to the need for closer relationships with like-minded industry partners and clients to further develop learning within this context. Students who develop skills in sustainable design, research, materials knowledge and new construction methodology will gain competitive advantage in a radically changing industry. Student projects, therefore, are aimed at critically examining and broadening the scope of traditional design practice within the broader community. In order to deal with the challenges that design has historically brought about, it is essential for designers to move beyond the role of service providers and to become strategic re-directive practitioners. To facilitate this transition, it is argued, authentic learning environments need to be set up where students can explore new models of interdisciplinary and sustainable design in a scaffolded environment.

## **The LiveSpace Experience**

LiveSpace Studio for Socially and Environmentally Responsible Design was established in the Design Department at Griffith University Queensland College of Art as an experimental Work Integrated Learning (WIL) studio, where design students explore collaborations with industry, community and local government organisations. Undergraduate students of Interior Environments, Product Design, and Visual Communication Design are provided with a WIL experience that enables them to learn by practicing design, exploring through iteration of their ideas, applying theory as well as skills and techniques. Projects are focused on retrofitting, design for disassembly, adaptation, transportability, re-purposing, re-use and recycling of materials for sustainable futures.

Working on projects outside the ‘safety’ of a classroom environment, students are able to gain insight into the complexity of the whole of design process and gain confidence when interacting with clients, consultants, trades, community and stakeholders in a continuous feedback loop. Students are encouraged to design appropriate research methods, community consultation processes, and practices of their discipline to reach successful outcomes for all involved. Applying theory, introduced in lecture and studio contexts, to tangible community projects allows students the opportunity to see not only the physical application of their design concepts, but practice new approaches to design, seeing the ongoing benefits that

carefully considered design interventions can have within the communities involved.

Much of the literature on Work Integrated Learning (WIL) focuses on a “singleton model” (Orrell 2011, p. 10) whereby students from a single discipline are dispatched on individual placements. In contrast, the cohort-based system used in LiveSpace facilitates critical and practical learning about current practices; by supporting tutor-mediated engagement with industry or community and peer-to-peer learning, the LiveSpace environment aims to build graduate confidence and work-readiness with a blend of theoretical and practical skills. By providing a simulation of a professional studio in the classroom, supporting work-integrated learning on real-world projects scaffolded by higher order thinking, LiveSpace presents a form of “mimetic” learning, which can potentially also present an opportunity to “transform what constitutes...occupational practice.” (Billett 2014, p. 100). This is in contrast to learning driven by a tacit “wisdom of practice” whereby industry standards are perceived to override the often longer-term goals of a tertiary level education (Cooper, Orrell and Bowden 2010, p. 102; Billett 2014, p. 100).

A cross disciplinary approach allows students to develop skills beyond a traditional preconceived industry skill set, by working closely with and learning from other students, lecturers, consultants, trade and industry representatives, and community members from a broad range of backgrounds and disciplines. In addition, this approach focuses upon the ongoing personal and professional development of students through the experiential process of learning through research, sketching, computer-aided design and modelling, hands on prototyping, reflection, adjustment and improvement. Students of the program are exposed to and involved in all levels of the design and construction, from client meetings to computer-aided design to materials testing. Working on “thickly authentic” projects, the process of conceptualisation, design, documenting and prototyping, under the supervision of both industry experts and academic staff in the Live Space studio provides the benefits of an environment that allows for experimentation, innovation and learning from mistakes.

LiveSpace is grounded in an approach derived in part from Schön’s (1985) notion of “reflection-in-action” observed in professional design and architecture studio, described as “a capacity to combine reflection and action, on the spot...to examine understandings and appreciations while the train is running” (Schön, 1985, p. 27). Reflection-in-action takes place, for example, when students are learning the properties of materials by building prototypes. It is also part of an iterative process: rather than perpetuating a myth of the creative process as a series of blind trials, or trying out different creative ideas at random, Schön proposes that each successive trial is influenced by previous judgments of fit or misfit (Schön, 1990, p. 125). Iterative prototyping is among the distinctive methods of the design profession—part of a professional epistemology, which Shaffer argues, can provide powerful models for learning environments (Shaffer, 2004, p. 1405).

Fry’s (2009) case for the redirection of design away from unsustainable practices offers a number of strategies and methods for developing epistemologies beyond instrumentalist paradigms. This is echoed in part by the growing awareness in industry of a need to identify

sustainable methods of design and construction. Thus, while traditional on-site Work Integrated Learning presents students with an opportunity to learn the skills, habits and associations of current professional practice, a learning lab on campus shifts the balance toward the future of the profession; it provides a scaffolded venue for authentic learning and collaborative experimentation with industry.

Adjustment and improvement of designs following prototyping prior to the actual construction phase provides the scope for reflection, analysis and development of participatory processes to tackle complex design problems, or ‘wicked problems’ (Buchanan, 1995). The involvement of students in the project management and final construction phase of the project provides an opportunity for students to collaborate with consultants, contractors, trades and other industry professionals, thereby expanding their knowledge of industry standards, regulations, limitations, terminology and materials properties and providing industry readiness while simultaneously identifying limitations of current practices.

Burton proposes that pedagogical integration can be achieved through conceptualising it as praxis and building a process by which theory becomes part of students ‘lived experience’ (Burton as cited in GIHE, n.d.). Shaffer’s concept of “pedagogical praxis” extends the notion of praxis to (a) incorporate the principles embedded in existing professional learning practices, (b) develop of technologies to help students participate in these practices and then (c) develop “experimental learning environments” (Shaffer, 2004, p. 1405). The value of an experimental learning environment is significant as it allows for the co-construction of knowledge, whereby individuals construct knowledge through relational interaction (Valsiner, 1994, 2000 in Billett, 2004, p. 3). However, issues involving selection of workplaces for WIL placement can be fraught with challenges where, practice can in actuality be a source of erroneous learning, through the application of ill-informed and outdated professional practices in certain workplaces (GIHE, n.d.). In other words, many external design practitioners offering WIL placement opportunities lack the academic background or essential practical competencies to provide any authentic connection between theory and practice.

## **The Charleville Project**

Charleville is a regional Queensland town with a population of 3728 situated approximately 750 km west of Brisbane (ABS, 2011). Established as a frontier town on the Warrego River, Charleville is the largest town and the administrative centre of Murweh Shire Council. Established in 1865, Charleville became a regional hub serviced by Cobb and Co. Stage Coach Company with a railway link to Brisbane following in 1888, and the establishment of a regional airport during WW2. Situated on the Natural Sciences Loop, Charleville is now a popular stop over for tourists travelling the Australian outback, known for its Bilby Conservation breeding program and the Cosmos Centre observatory (Murweh Shire Council, 2015a).

Formerly a sheep grazing area, the town's economy is now heavily dependent upon the local beef industry, which faces uncertainty in times of a changing climate. Summers in the area are dry and hot, with the region subject to periods of prolonged drought. Despite the low annual rainfall however, Charleville is subject to severe and devastating flooding. The Warrego River channels volumes of waters from low-lying inland plains during wet seasons, resulting in the town's long record of flooding (Bureau of Meteorology, 2015). The largest flood in recent history was in April 1990 where 3000 people in the town were evacuated and 80% of the township inundated (Risk Frontiers, 2012, p. 45). Further severe flooding has occurred in 1997, 2008, 2010, 2012 and in recent years in excess of 20 million dollars (AU) has been spent on flood mitigation in the form of river levee banks, diversion channels and flood gates funded by the State Government (Murweh Shire Council, 2015b).

With new flood mitigation in place, and a new confidence in the town's future resistance to flooding, the community of Charleville is keen to revitalise its town centre. At the invitation of Murweh Shire Council, students from LiveSpace: Studio for Socially and Environmentally Responsible Design and Design Department and lecturers Petra Perolini and Naomi Hay, travelled to Charleville in July 2014 to commence the planning of the design and documentation of a new Art Gallery and a proposal for a new vision of its two main streets, Willis and Alfred. The visit to Charleville provided a unique opportunity for design students to engage and consult with local community on projects that aim towards strengthening long term social and economic sustainability in the region.

Project meetings and discussions were held with representatives from the Murweh Shire Council, Murweh Shire construction representatives, Murweh Shire parks, gardens and street scaping teams, Charleville Arts Gallery Inc., and a wide range of local business owners and community stakeholders. Discussions were held with representatives from Arts Queensland regarding the design requirements pertaining to regional galleries and their functionality. The team also met with representatives from the Queensland Government Department of State Development, Infrastructure and Planning (South West Region) to discuss broader issues of regional development and opportunities for local projects and planning. With a new town plan being developed for Charleville, students were further encouraged to propose concepts that may be incorporated into sustainable visions for the town's long term future. The team commenced site inspections and site measures, obtained photographic records, and undertook historical analysis and mapping exercises of the town's central business district.

Upon return to the Brisbane studio, the team produced a redirective design brief based upon their research. Redirective design seeks to move beyond disciplinary models taking a meta-perspective that elevates the "importance and futuring potential of design" (Fry 2009). In the case of Charleville, it was recognized that a combination of spatial and 2D design skills were required to develop a persuasive case for a retrofitting project that considered the Council's aspirations for a regional arts gallery along with community needs for flexible space and an adaptive approach to future climate-driven situations like flooding and ensuing emergency procedures. The need for a regional art gallery to promote local artist has been long

recognized by the Council, Charleville Arts Gallery Inc. and the local community. In support of this, Dunphy (2009) has advocated support for the arts and creativity, given their central contribution to the development and revitalization of rural and remote communities in Australia.

Funding has been sourced and approved by Murweh Shire Council and work on the gallery is scheduled to commence in 2015. The Charleville Arts Gallery will serve as a showcase for the works of local artists and also provide a venue for travelling exhibitions and events to the region. Designs for the space must also allow flexibility for a wide range of future exhibition and commercial opportunities. Project teams worked in conjunction with QLD Art Gallery/GOMA and Griffith University Queensland College of Art Web Gallery and Griffith Artworks to ensure best practise is achieved in gallery design and allow for travelling exhibitions to occupy the space.

In keeping with the ethos of the LiveSpace Studio, the Charleville project has a strong focus upon design for disassembly, modification, retrofitting, reuse and repurposing of materials. The proposed design (Figure 1) centres on flexibility, with joinery items and displays designed for mobility, ease of assembly and disassembly. Display plinths have been designed to be stackable, inserting into each other as they decrease in size, allowing allows for a reduction in storage space when they are not in use. All joinery elements are moveable, including the Point of Sale, which is designed as soft wired, to allow the space to be utilised in extensive ways including hosting of community events and for ease of transportation in case of future flooding.

The storage room hosts a large pivoting wall for additional flexibility and ease of access when setting up an exhibition. A lighting feature installation of programmable OLEDs is designed to minimize energy utilisation and allow for maximum flexibility of the space; programmable and interactive to achieve multiple lighting effects and suspended on a modular adjustable grid creating freedom for endless positioning of display cases and walls. Careful consideration of materials selection, including durable exposed concrete and sustainably sourced marine ply, allowing for any possible future flood damage was also integral to the design concept.

Along with return brief, rendered plans, perspectives, details and a 3 dimensional model and scale model (Figure 2), the team constructed a full size prototype joinery seating and display unit in the workshop under the guidance of skilled carpenter, Patrick Connaughton. Participating in hands on construction of the joinery items is aimed at providing students with an advanced level of knowledge in sustainable materials construction that will equip them with competitive advantage in a rapidly changing industry. The teams' resolved design concept for the project is currently at the review and documentation stage, having been received with enthusiastic feedback from the Murweh Shire Council, and construction on the project is set to commence in the coming months.

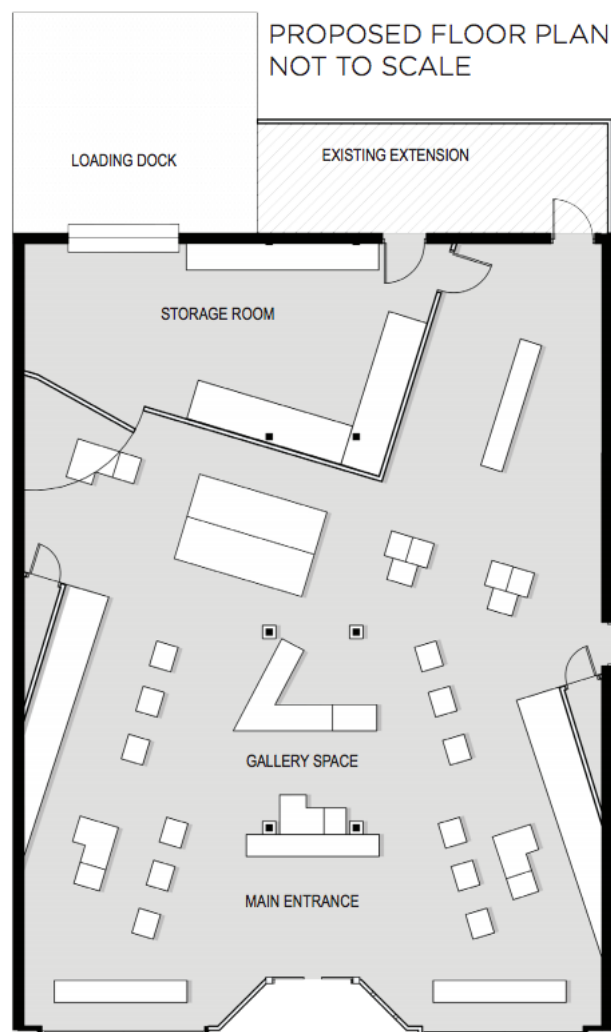


Figure 1: Art Gallery re-design floor plan



Figure 2: Art Gallery re-design scale model

In addition to the Art Gallery redesign, students have further developed concepts for street façade restoration and improved street scape for the town, a regional Queensland centre full of history and diversity. Whilst in Charleville, the group had the opportunity to meet with many members of the community, discussing important issues including the town's rich history, present challenges and future opportunities. Issues identified include historical flooding, heat islanding in the town centre with large expanses of bitumen and little planting, and degeneration of historic facades. There has also been a downturn in the local economy, which is heavily dependent upon the local beef industry affected by extended drought periods. The flow-on effects throughout the town have resulted in several empty shop fronts, which are of significant concern to Council and local business owners.

A design package presented to the Council focuses upon revitalisation of the town centre with building façade restoration, increased street planting, shading elements and seating hubs (refer Figure 3). New wayfinding and signage packages have been included to help direct tourists to key locations, activities and points of historical interest. A walking tour trail of the town, complete with information plaques celebrating the rich history of the towns historic buildings has also been proposed. Materials for these projects are being locally sourced and crafted, in keeping with the town's history and encouraging a community participatory approach to the project. Designs were also proposed for temporary 'pop-up' shops in vacant retail spaces, creating opportunities to promote local products particularly during peak tourist seasons. Students are researching, experimenting and prototyping product displays out of lightweight, recycled, and sustainable materials that may be relocated from space to space as necessary in the future.

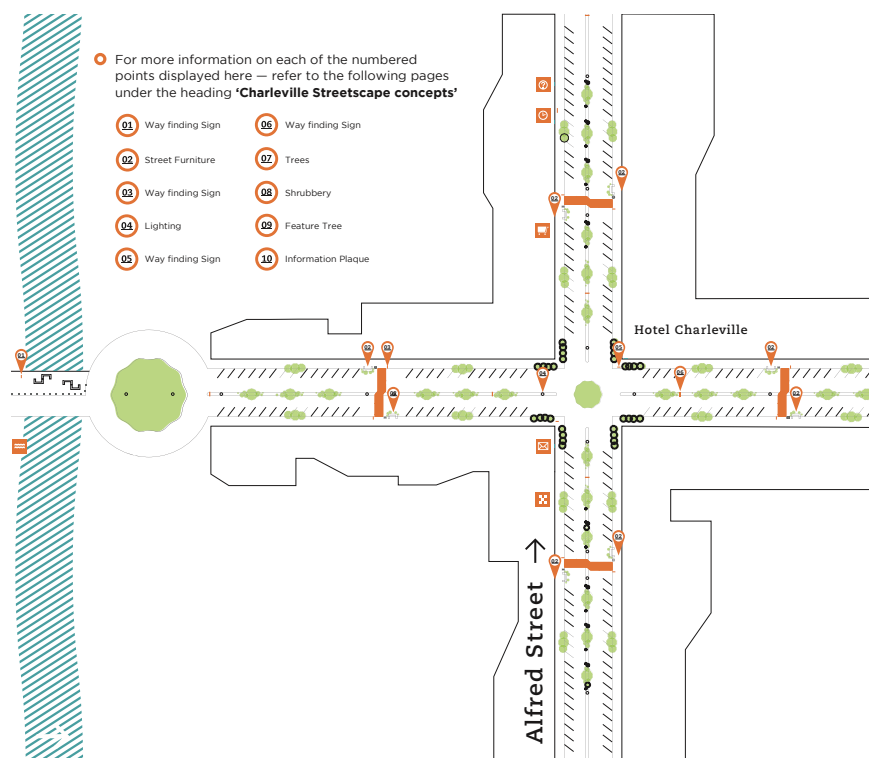


Figure 3: Street scape way finding re-design

## Benefits/Outcomes

In his case for mimetic learning, Billett argues that when individuals engage in work activities for specific purposes, they are “actively remaking that occupational practice, thereby realising its continuity”. This act of remaking can either perpetuate existing practices in changing circumstances, or it can “contribute to the transformation of what constitutes that occupational practice” (Billett 2014). This project –based learning approach, filled with active and engaged learning, is central to LiveSpace where students obtain a deeper understanding of design processes, time management, client communication and team based learning, while exploring possibilities for futural, participatory and sustainable design practices. Students are more likely to retain knowledge, develop self-confidence and self-direction as they explore these insights.

Project learning at LiveSpace also encourages students to experience greater flexibility with project delivery, which encourages a sense pride in their work, a sense of ownership, confidence and accountability. Because students at LiveSpace are assessed on the basis of their projects and reflections on their learning rather than on traditional assessment methods like essays, rubrics or exams; they often see their work as a more meaningful learning tool and as a link to real-world experience and ultimately the workplace. Billett advises that mimetic learning can be promoted by “preparing students for contestations” (e.g., being advised by practicing professionals to forget everything learnt at university). In the scaffolded environment of the LiveSpace environment, students are able to test redirective strategies in authentic scenarios, building their work-readiness while contributing to the transformation of practice.



Figure 4: Design students working collaboratively, in-situ

Observations made in semester 2/2014 working on the Charleville project confirmed that active and engaged learning inspires students to obtain deeper knowledge of the individual project components and the knowledge obtained was retained far more readily than through traditional class room-centred learning. The LiveSpace experience has not only had a demonstrable effect on motivation (supporting the literature, e.g., Cooper et al), but students have reported (in reflective journals and surveys to date) that they have gained a greater – embodied understanding of structure and materials through, for example, furniture prototyping for the proposed gallery project. *"From conceptual sketches through to 3d*

*walkthrough renders and way finding systems - it was very much developmental process."* – Visual Communication Design Student

At the same time students have reported that working in a group to come up with a design proposal required "open mindedness", "teamwork" and "integrity".

*"The experience allowed me to challenge myself and my confidence as a designer in a supportive environment" [...] "It helped me understand the client liaison process and that this can be varied across projects and clients."* – Interior Design Student

Such findings support a consensus in literature that WIL supports students' capacity to become "proactive, adaptable, motivated and responsible" – qualities sought by potential employers (Cooper et al. 2010, p.59). Further observations also confirmed that LiveSpace students had a greater desire to explore, take risks, and were starting to investigate and understand their world far more effectively than their peers.

*"I was challenged with a leadership role, to work on a live project with practitioners not of my discipline — and by pulling me out of my comfort zone and learning how to delegate tasks - it certainly aided my ability to work well independently as well as apart of a team."* – Visual Communication Design Student

Although further research is required to gain a more complete understanding of the LiveSpace WIL experience, WIL is widely recognised as an effective form of teaching and learning within the design education, giving students the opportunity to explore and test their ideas on real world projects. 'Real' projects offer design students to engage with industry partners, community stakeholders and clients away from the safety of the classroom. Through collaboration, all parties involved participate in the learning and the sharing of skills and knowledge. WIL students get the chance to gain real insight into all challenges readily observed in live projects. As the team leaders, LiveSpace students learn skills and knowledge that far surpasses the classroom experience. The tools learned will be essential to future practitioners and help to establish an awareness of the social and environmental responsibility of the future designer.

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## Notes

1. The degree is informed by the theories of Fry (2009). At its core, the degree fosters an understanding that design as redemptive practice is essential to address the defuturing consequences of our anthropocentric actions.
2. Interior Environments is equivalent to Interior Design in scope, skill and competency, however students are also taught to 're-imagine built environments for a sustainable future'.
3. Product Design is equivalent to Industrial Design in scope, skill and competency, however, students are also taught to gain a deep understanding of the social, environmental and industrial implications of their work and to 're-think product design to reduce waste and improve lives'.
4. Visual Communication Design is equivalent to Graphic Design in scope, skill and competency, however students are also taught how to 're-negotiate images to innovate and influence change'.

## Author Biographies

### Naomi Hay

Naomi Hay is a sessional Lecturer in Interior Environments at Queensland College of Art, Griffith University, specialising in design theory, research and practice based courses. Naomi has a Bachelor Degree in the Built Environment from Queensland university of Technology and a Master of Design Futures (Hons) from Griffith University. She is currently completing a PhD – investigating the role of design in strengthening resilience of vulnerable communities towards sustainable futures.

As an educator Naomi is commitment to the development of re-directive design practice for sustainable communities, with a focus upon connecting students to real world projects involving regional councils, businesses and not for profit groups. Prior to focusing upon a career in design education Naomi practiced as an interior designer with work spanning small, large-scale, regional and overseas professional development work. Specifically, Naomi pertains extensive experience across the management of stakeholder relations and best practice processes for commercial and residential projects across Australia and the Asia-Pacific region.

As a founding member of LiveSpace Studio For Socially and Environmentally Responsible Design, Naomi plays a critical role, securing industry links, project partners. Currently, she is working with QCA staff and students on a range of community based projects across Queensland spanning both urban and regional centres.

### Petra Perolini

Petra Perolini is a lecturer and studio course convenor in Interior Environments at Griffith University QCA. Petra has a Bachelor Degree in Interior Architecture from Switzerland, and a Bachelor Degree in Visual Arts (Interior Design) from the Queensland College of Art; she also has a Masters Degree in Urban and Regional Planning from the University of Queensland and is a current PhD candidate at QCA. Her research explores making essential links between understanding the complexity interior design ontologically occupies and a predominantly non-reflective practice approach.

Petra's teaching areas are in all year levels of Interior Environments. Her projects are often embedded in real-world scenarios and respond to present and future needs in progressive ways. This allows students to address current and pressing social and environmental issues that affect city living globally today. Some recent projects include social and spatial injustice, social exclusion and fragmentation. Her pedagogy focuses on design and new practice, encompassing interdisciplinary design to push design thinking beyond current practice.

WIL is already an integral part of the Interior Environments program, both with industry partners and within Livespace studio. Petra has extensive experience working with students

engaging in WIL practice both as a design professional and as an academic supervising WIL students.

## Beck Davis

Beck Davis is a designer whose research centres on early stage design, examining design teams and how they collaborate and respond to complex problems. This includes the analysis of gestural interactions as well as the use of metaphors and analogies during the creative process. She is a co-founder of the LiveSpace studio, and convenes the Product Design Major at the Queensland College of Art, Griffith University. Her current research projects include 'Mediated Interactions: how technologies shape experiences and creative collaborations' (funded by Griffith University New Researcher Grant), as well as 'biodress' a investigational project experimenting with augmented soft-user-interface wearable garments that focus on the *non*-human (a collaboration across Europe, United Kingdom, Hong Kong and Australia).

In 2014 she coordinated the Design In Flux exhibition; co-lead the inaugural transdisciplinary, cross-institutional, cross-cultural Cloud Worksop and co-ordinated E-WASTE [RE]booted an immersive educational experience with Queensland Museum. Increasingly Beck has been exploring the intersection of design, art and technology through creative works, exhibiting at Design in Flux (Philadelphia, 2014), Haptic Interface (Hong Kong, 2014), Wear Next\_ (Brisbane, 2015) and Experimental Thinking/Design Practices (Brisbane, 2015).

## Peter Hall

Peter Hall is a design writer whose research focuses on data visualisation and mapping as a design process. He is a co-founder of the LiveSpace studio, and program director of design at Griffith University Queensland College of Art, where he teaches design history and interdisciplinary studios. His research projects include TREsPASS (funded by the European Commission's Seventh Framework Programme) where he is part of a visualisation work package developing interactive visualisation tools for predictive assessment of risk. He has also worked on the development of the websites DesignInquiry, Design Futures, Design History Lab and the Knowledge Circuit (at the University of Minnesota Design Institute).

Before moving to Griffith, Peter was senior lecturer in design at the University of Texas at Austin where he taught design theory, history, and a signature course in mapping. He also taught at Yale University School of Art and was a research fellow at the University of Minnesota Design Institute, where he wrote and co-edited with Janet Abrams the book *Else/Where: Mapping - New Cartographies of Networks and Territories*.

His interest in alternative education models has developed since co-founding DesignInquiry in 2006, a non-profit educational group based in North America which explores research topics in intensive team-based gatherings. He has written widely about design and design

education for publications including *Metropolis*, *Design and Culture*, *Design Philosophy Papers*, *Print*, *I.D. Magazine*, *The New York Times*, and *The Guardian*, including an article and Queensland State Library toolkit on an educational videogame project developed by the Institute of Play in New York. His books include *Tibor Kalman: Perverse Optimist* and *Sagmeister: Made You Look*.

Peter holds a B.A. (Hons) in English and Philosophy from the University of Hull and a PhD from Griffith University: *Uses of Mapping in Design Criticism and Practice*.