

# DESIGN4HEALTH Melbourne 2017

Proceedings of the 4th International Conference on Design4Health Melbourne Cricket Ground, Melbourne, Australia

4-7th December 2017

**Editors: Deirdre Barron and Kurt Seemann** 







Cover: Jayden Ryles-Smith Benjamin Chaves

### **Preamble**

Welcome to the first Design4Health Conference in Australia, convened by the Centre for Design Innovation, Swinburne University of Technology, on behalf of, and jointly chaired with, the conference founders, Lab4Living, Sheffield-Hallam University, UK.

The Centre for Design Innovation investigates and validates the key factors that underpin the design of products, services, systems, spaces, and symbols to improve the chance of user uptake and impact.

Lab4Living, who established the conference, is an interdisciplinary research initiative that develops products and environments, and proposes creative strategies for dignified, independent and fulfilled living for all.

This international event invited the world of health and design practitioners and researchers to come together between the 4<sup>th</sup> and 7<sup>th</sup> of December, 2017 in Melbourne, Victoria, Australia.

#### About the conference

Design4Health is an international conference that brings together designers, health professionals and creative practitioners with researchers, clinicians, policy makers and users from across the world to discuss, disseminate and test their approaches and methods in the ever-changing nexus between design and health.

The conference hosted a series of different events that provided an active forum to explore how the disciplines of design and health might intersect to bring forth new ways of thinking and working in what is a dynamic, innovative and increasingly important area of research and practice. The central question has been:

How can we work together to achieve positive and sustainable impact on the social, economic and cultural factors within our communities and beyond?

The range and insights presented at the D4HMelbourne event has revealed both the enormous value of this movement in research, and the benefits from undertaking serious, applied, and critical efforts that design and health expertise generate when they come together.

We invite you to browse the innovative ideas and critiques scoped in these proceedings

Sincerely

Associate Professor, Kurt Seemann, PhD. | Convenor | Design4Health 2017

### **Supporters and Partners**

Cabrini Hospital

Centre for Design Innovation, Swinburne University of Technology, Australia.

Faculty of Health, Arts and Design, Swinburne University of Technology, Australia.

Jean Hailes for Women's Health

Lab4Living, Sheffield-Hallam University, UK.

Melbourne Cricket Ground, Melbourne.

Ms Sarah Markey-Hamm and Ms. Siobhan Bahn, Conference Managing Agents, ICMS.

Peter Stacey, Human Scale

### **Acknowledgments**

Many people have contributed their time and skills to assist the 2017 International Design4Health Conference in Melbourne, Australia, and the compilation of the proceedings. We wish to personally thank and acknowledge the work by Associate Professor Deirdre Barron, (Chair, Academic Review Board), and the boards two executives, Dr Alen Keirnan, and Dr. Nicole Aimers. Also wish to thank the work of:

Ms. Fatma. Mohammed, and Ms Andrea Streckfuss (Centre Coordinators, Centre for Design Innovation, Swinburne University of Technology).

Ms. Jenny Jiang (Project Management Intern)

Associate Professor Simone Taffe (Design4Health Melbourne Exhibition)

Ms. Bridgette Engeler (Design4Health Melbourne Exhibition)

Dr. Gianni Renda (Design4Health Melbourne Exhibition)

### **Conference Convenor and Co-Chairs**

Associate Professor Kurt Seemann (Convenor, Co-Chair)

Director, Centre for Design Innovation, Swinburne University of Technology Professor Paul Chamberlain (Co-Chair)

Director, Lab4Living, Sheffield-Hallam University

### **Academic Program and Review Committee**

Associate Professor Deirdre Barron

(Chair, Academic Program and Review Committee, 2017)

Dr Nicole Aimers

Dr Alen Keirnan

Research Associate Kirsty Christer

Mr. Heath Reed

Associate Professor Flavia Marcello

Associate Professor Carolyn Barnes

# Scholarly Review Policy for the 2017 International Design4Health Conference Proceedings, Melbourne, Australia.

All papers included in these proceedings have been double-blind refereed by peers and revised to take into account the referees' recommendations.

### **Citation for Proceedings**

Seemann, K and Barron, D. (Eds.). (2017). *Design4Health, Melbourne. Proceedings of the Fourth International Conference on Design4Health 2017*, Melbourne Cricket Ground, 4 - 7 Dec 2017, Melbourne, Victoria, Australia: Centre for Design Innovation, Swinburne University of Technology.

ISBN-13: 978-0-6480892-1-6

### **Citation for Paper in Proceedings (format)**

Author Surname, First Initial. Second Initial. (Year). Conference paper title. In Seemann, K and Barron, D. (Eds.). (2017). *Design4Health, Melbourne. Proceedings of the Fourth International Conference on Design4Health 2017*, (pp. page range of paper) Melbourne Cricket Ground, 4 - 7 Dec 2017, Melbourne, Victoria, Australia: Centre for Design Innovation, Swinburne University of Technology.

ISBN-13: 978-0-6480892-1-6

#### **COPYRIGHT**

© 2017 Sheffield Hallam University jointly with Swinburne University of Technology **Attributions:** Creative Commons: https://creativecommons.org/licenses/by/4.0/

Lab4Living | Art & Design Research Centre | Sheffield Hallam University | Sheffield | S1|1WB | tel: +44 (0) 114 225 6918 | fax: +44 (0) 114 225 6931 | www.design4health.org.uk

Centre for Design Innovation | Swinburne University of Technology | Johns Street | Hawthorne | Victoria | 3122 | Australia | tel: +61 3 9214 8000 | www.cdiengage.com.au

p. 4

# **Table of Contents**

1.	The role of users in an innovative service design process in healthcare Alhonsuo, M. and Miettinen, S.	12
2.	Learning critical communication in social services: Innovations in communication practices and technologies through simulation pedagogy and service design Vuojärvi, H., Alhonsuo, M., Marttila, H.	16
3.	Foyle Bubbles: How can design reduce suicide attempts using everyday social and civic spaces?	20
	Alwani, R., Raby, E., West, J., Bichard, J. and Spencer, J.	
4.	How do space and information technology affect patients' waiting experience in an ambulatory centre?	24
	Annemans, M., Stam, L., Coenen, J. and Heylighen, A.	
5.	When interest pays off: The relationship between motivation, wellbeing and learning of technologies by older adults	27
	Beh, Jeanie and Sonja Pedell	
6.	Fit for purpose	31
	Bell, Alison	
7.	Design standards and disability: Limitations in person-centred home modifications	36
	Lo Bianco, Michael, Sonja Pedell, Gianni Renda, and Ajay Kapoor	
8.	The prototyping process of a patient support device for radiotherapy of breast and regional lymph nodes in prone position	39
	Boute, Bert, Wilfried De Neve <sup>2</sup> and Jan Detand <sup>3</sup>	
9.	Wardrobe Adapted for Wheelchair Users	45
	Bruckner, Melanie Sol, Gabriela Elise Fensterseifer, Gustavo Henrique Lagemann, Silvia Trein Heimfa Dapper	arth
10.	Delivering healthcare: A reframing tool to uncover the right problem to solve.	50
	Cockburn, Jane <sup>1</sup> and Clementine Thurgood <sup>2</sup>	
11.	Design Anthropology and the medicalisation of ageing: Reflections on Designing for mild cognitive impairment	55
	Collier, G., Kayes, N., Reay, S., Hayes, N. and Bill, A.	
12.	Giving people living with dementia a strong voice: reflecting on the role of design to create enabling activities	60
	Claire, C. <sup>1</sup> and Pedell, S. <sup>2</sup>	

p. 5

13.	Discourse and collaborative design: exploring a critical approach to community engagement for design research insight	64
	Cunningham, Helen J., <sup>1</sup> Joanna K. Fadyl, <sup>2</sup> Stephen D. Reay <sup>3</sup> and David E. White <sup>4</sup> Introduction	
14.	Design for health: Experience of women-based food innovation initiative to overcome nutrition related health issues in Sri Lanka.	71
	De Silva, S. <sup>1</sup> and Akane, M. <sup>2</sup>	
15.	Co-designing to understand the tracheostomy product experiences of long-term tracheostomy users.	74
	Dickson, C., Reay, S.D., Douglas, R. and Nakarada-Kordic, I.	
16.	The refuge project: Designing through health, architecture and landscape	79
	Donnelly, Samantha, Sue Dean, and Tracy Levett-Jones The intervention:	
17.	Prototyping an emotionally responsive hospital environment  Douglas, R., Reay, S.D., Munn, J. and Hayes, N.	83
18.	Designers and hospitals: Considerations from an ongoing collaboration  Daphne Flynn, Kate McEntee, Rowan Page and Troy McGee	88
19.	Strategic design innovating wellness for the 21st Century workforce Fry, A. and Alexander, R.	91
20.	Using co-design workshops to develop a ward-level patient experience improvement toolkit.	95
	Gwilt, I., <sup>1</sup> Partridge, R. <sup>2</sup> Peacock, R., <sup>3</sup> Marsh, C., <sup>4</sup> Sheard, L.Bradford, <sup>5</sup> Lawton, R. <sup>6</sup> and Langley, J. <sup>7</sup>	
21.	Integrating responsive design and interdisciplinarity for healthcare environments $$ Haskell, $\rm N.^1$ and Loy, $\rm J.^2$	99
22.	Interdisciplinary and cross-cultural approaches to design for healthy ageing Scharoun, Lisa, <sup>1</sup> Danny Hills <sup>2</sup> and Carlos Montana Hoyos <sup>3</sup>	103
23.	The impact of user experience on simulation or VR-based training software in the field of medical surgery and teaching environment.  Hilgers-Yilmaz, Ute	106
24.	Can you have your cake and eat it too? A dilemma-driven approach to design for the early stages of health behaviour change	110
	Ludden, Geke,¹ Deger Ozkaramanli,² Armağan Karahanoğlu³	
25.	Wellbeing and the lived experience of dying with dementia in a typical Australian RACF	115

26.	Design for dementia: Making spaces for uncertainty Fennell, Jac, <sup>1</sup> Cathy Treadaway <sup>2</sup> and Gail Kenning <sup>3</sup>	118
27.	Craft as purpose: Co-design for people living with advanced dementia  Kenning, Gail, Cathy Treadaway, David Prytherch and Andy Walters	122
28.	Reciprocal design: inclusive design approaches for people with late stage dementia Kenning, Gail	125
29.	QuittyLink: Involving smokers in the design of technology that supports individuals in quitting	128
	Paay, Jeni, <sup>1</sup> Jesper Kjeldskov, <sup>2</sup> Uma Brinthaparan, <sup>3</sup> Lars Lichon, <sup>4</sup> Stephan Rasmussen <sup>5</sup> and Nirojin Srikandaraja <sup>6</sup>	
30.	Communication design project: Redesigning medicine administration for the elderly in Hong Kong  Kwok, S.H.	133
31.	Thick care: Designing for an ethic of care and complexity in community aged care services	138
	Lorenzetto, Anna	
32.	Creating a personalised self-management system for post stroke rehabilitation; utilising a user-centred design methodology	142
	Mawson, Susan, <sup>1</sup> Nasrin Nasr, <sup>2</sup> Jack Parker, <sup>3</sup> Huiru Zheng, <sup>4</sup> Richard Davies <sup>5</sup> and Gail Mountain <sup>6</sup>	
33.	Designing for emergency departments: A literature review  McGee, T., Flynn, D., Coxon, S. and Keith, J.	146
34.	Kids in the waiting room: Lessons from Melbourne's Royal Children's Hospital McLaughlan, R., Willis, J. and Sadek, A.	150
35.	Evidence and borrowing: Conversations with 8 architects on the use of evidence and innovation in the design of contemporary healthcare facilities	153
	McLaughlan, Rebecca, Philip Goad, and Alan Pert	
36.	ICU journey: Humanising the patient experience of Intensive Care Meldaikyte, G., Fusari, G., Matthews, E. and West, J.	156
37.	Designing creActivities: Creative Methods to engage young people experiencing psychosis in co-design	160
	Nakarada-Kordic, Ivana, <sup>1</sup> Nick Hayes, <sup>2</sup> Stephen D. Reay, <sup>3</sup> Carla Corbet <sup>4</sup> and Amy Chan <sup>5</sup>	
38.	Responsive tangible rewards in physical activity gamification  Novak, James I. <sup>1</sup> and Jennifer Loy <sup>2</sup>	167

39.	Design across the Spectrum: Enhancing inclusion for children on the autism spectrum in the playground	171
	Owen, Ceridwen, Damhnat McCann, Christopher Rayner, and Jackson Wells	
40.	Increasing confidence through competence in people with dementia through meaningful conversations	175
	Paay, Jeni, <sup>1</sup> Metta Bank <sup>2</sup> and Ivan Aaen <sup>3</sup>	
41.	Interactive technologies helping young adults manage low self-esteem  Paay, Jeni, Helle Larsen and Heidi Nielsen	179
42.	The SEE toolkit: How young adults manage low self-esteem using personal technologies	183
	Paay, Jeni, <sup>1</sup> Helle Larsen <sup>2</sup> and Heidi Nielsen <sup>3</sup>	
43.	Speculative co-design: a framework for designing medical devices towards enhanced usability, through explorations of experience.	187
	Rowan Page	
44.	Utilising Lego® Serious Play® to engage children and young people with ADHD and their parents	191
	Powell, L., <sup>1</sup> Parker, J., <sup>2</sup> Harpin, V. <sup>3</sup> and Mawson, S. <sup>4</sup>	
45.	Enhancing social connections amongst older residents of a rural town with community mapping and technology	195
	Paulovich, Belinda.	
46.	Technology in health and social care: a critical reflection from across two continents Pedell, S. $^{1}$ and Claire, C. $^{2}$	198
47.	Pictorial Language: A bridge to meaningful conversation between grandparent and adolescent grandchildren	202
	Mayasari, Angeline and Sonja Pedell	
48.	The hospital environment through the eyes of adolescents with long-term patient experience. Young people affected by cancer speaking	207
	Peeters, Kimberl, Pleuntje Jellema, Margo Annemans, and Ann Heylighen	
49.	Communicating information in health: Engaging students in design for health awareness.	211
	Potter, E., Reay, S.D. and Thornhill, B.	
50.	Stigma and the weight it carries when establishing a user experience Strategy: User research discoveries around mobility related issues	215
	Neagu, E., Raby, E. and McGinley, C.	

51.	Foyle Reeds: How can design reduce suicide attempts at a specific place whilst at the same time improving the experience for all?	219
	Raby, E., Alwani, R., West, J., Bichard, J. and Spencer, J.	
52.	Design for well-being: Examining Aceh post-tsunami houses	223
	Rahmayati, Y.	
53.	Dear pelvic floor exercises: A qualitative study among health professionals, pregnant and postnatal women	226
	Barnard, R., Rodríguez Ramírez, E.R., Caudwell, C. and Baartman, V.	
54.	NZ Fauna AR: an augmented reality exergame system to assist stroke survivors with independent rehabilitation.	230
	Petrie, R., Rodriguez-Ramirez, E. and Chan, K.	
55.	Exergames for healthy ageing: Inclusion through design	235
	Čaić, Martina, <sup>1</sup> Vanessa Rodrigues, <sup>2</sup> Stefan Holmlid, <sup>3</sup> Dominik Mahr <sup>4</sup> and Gaby Odekerken-Schröder	5
56.	Psychosocial Needfinding	239
	Savig, E.S. <sup>1</sup> Gurevitch, J.H., <sup>2</sup> Jackson, J.E., <sup>3</sup> Alinowski, A. Agarwal-Hashmi, R., <sup>4</sup> Sourkes, B.M., <sup>5</sup> Cohen, and Leifer, L.J. <sup>7</sup>	, H.J. <sup>6</sup>
57.	Review of waste management service design for health and wellbeing in rural and remote Aboriginal and Torres Strait Islander communities	247
	Seemann, K., McLean, S. and Fiocco, P.	
58.	Designing innovative wayfinding systems in healthcare: from exploratory prototyping to scalable solutions	252
	Short, E., Reay, S.D., Douglas, R.	
59.	Designing health information to an acceptable standard: the state of the art, science craft, and design	259
	David Sless	
60.	Sharing the city: An intergenerational VR experience	262
	Symington, Nicole, Kathy Constantin, and Sonja Pedell,	
61.	Reimagining ageing: Insights from teaching co-design methods with designers, seniors and industry partners	268
	Taffe, Simone, <sup>1</sup> Sonja Pedell <sup>2</sup> and Andrea Wilkinson <sup>3</sup>	
62.	Taking the pulse: A survey of design for health development in Singapore  Koon Boon Tan, Michael	272
63.	Framing food literacies: Reflections from two Australian design-led innovation projects	278

64.	Research-led Design of a Communication Strategy for a Health Accelerator Program	283
	Turukalo, M., <sup>1</sup> Thompson, J., Pedell, S. <sup>2</sup> and Kommatas, C. <sup>3</sup>	
65.	Making better use of recorded patient experiences: transforming literature into a collaborative tool for inspired interaction	288
	Villalba, C., Jaiprakash, A., Donovan, J., Roberts, J. and Crawford, R.	
66.	Designing for health beyond healthcare: From the institutional assumption to community health design	293
	Vink, Josina, <sup>1</sup> Vanessa Rodriques, <sup>2</sup> Lisa Malmberg, <sup>3</sup>	
67.	Designing emotionally resonant aesthetic experiences in healthcare.  Wan, T.,¹ Reay, S.D.² Smith, A.,³ Douglas, R.A.⁴	297
68.	Evaluation of universal design—A scoping project	302
	Watchorn, Valerie., <sup>1</sup> Cathryn Grant, <sup>2</sup> Richard Tucker, <sup>3</sup> Danielle Hitch, <sup>4</sup> Patsie Frawley, <sup>5</sup> Susan Ang, <sup>6</sup> Kathryn Aedy <sup>7</sup>	and
69.	Decreasing the burden of hypertension: A design intervention to foster more accurate blood pressure measurements.	305
	Jackson Wells, Ceridwen Owen, James Sharman, Niamh Chapman, and Rebekah McWhirter	
70.	Developing the Double Diamond process for implementation—insights from a decade of Inclusive Design projects	310
	West, J., Fusari, G., Raby, E., Alwani, R., Meldaikyte, G., Wojdecka, A., Matthews, E.	
71.	SlowMo/Mo—digital technology to provide support in coping with daily life	314
	West, J., Wojdecka, A. and Matthews, E.	
72.	Co-creating a digital decision aid for people with dementia and their caregivers to fulfil their unmet needs	317
	Van Zuthem, H.M., <sup>1</sup> Cila, N. <sup>2</sup> and Wildevuur, S.E. <sup>3</sup>	
73.	Designing Information and Communication Technologies to support chronic disease self-management in practice: a case study from Australia and the Netherlands	322
	Wildevuur, Sabine E., <sup>1</sup> Fleur Thomese, <sup>2</sup> Julie Ferguson <sup>3</sup> and Ab Klink <sup>4</sup>	
74.	What we wish we had known when we began: Insights on designing together with people with dementia in research and education	326
	Wilkinson, A. <sup>1</sup> and Hendriks, N. <sup>2</sup>	
75.	Violence, vulnerability, and care: A women's history of HIV in America  Matthew Wizinsky	329

76. Using Knowledge Mobilisation theory to inform the design of a co-design workshop for healthcare research and innovation	334
Joe Langley <sup>1</sup> , Dan Wolstenholme <sup>2</sup> , Rebecca Partridge <sup>1</sup> , Ian Gwilt <sup>1</sup>	
77. Improving the blood donation experience through better designed phlebotomy.  Wood, Caitlin and Selby Coxon,	337
78. Actualising the participant designer: a case study in the design of health communications  Barnes, C.,¹ Wragg, N.² and Wragg, L.³	342
79. Playscapes: Pure Ludens  Yan, J. <sup>1</sup> , Hedges, S. <sup>2</sup> , Reay, S.D. <sup>3</sup>	347
80. Strength for task training (STT) exergaming for lower limb stroke rehabilitation  RuiFeng Yeo and Edgar R. Rodríguez Ramírez	352

# Foyle Reeds: How can design reduce suicide attempts at a specific place whilst at the same time improving the experience for all?

Raby, E., Alwani, R., West, J., Bichard, J. and Spencer, J.

Royal College of Art, United Kingdom

### Introduction

Suicidal behaviour is a worldwide public health issue; internationally a person dies by suicide every 40 seconds (WHO 2014). The impact of a suicide in a public environment has a profound negative effect on those living nearby. This paper outlines a project aiming to tackle this by bringing together researchers, designers and the local community to reduce suicidal behaviour and improve well-being across a section of the Foyle riverfront in Derry Londonderry through suicide prevention interventions. Each year, an average of four people suicide in the river, though hundreds are removed or counted as a 'cause for concern'. This paper discusses 'Foyle Reeds', one element of the project, an art installation and suicide prevention barrier for one of the bridges, designed to protect and engage with the community whilst avoiding any sense of imprisonment. This project has received high levels of interest from statutory stakeholders and local government due to an increase of incidents on the bridge.

# **Process and Engagement**

The research question is: how can design reduce suicide attempts at a specific place whilst at the same time improving the experience for all?

### **Methods**

Using co-design methods (within the Double Diamond model (Design Council, 2005))

the project sought input from across the community, aiming to understand their experience of the bridges and environment, as well as their hopes and aspirations for the area. In an area known for the Troubles (a conflict between Irish Republican and Loyalist parties in the late 20th Century, creating a division in the community), it is important to create a neutral space for participants and to provide opportunities for both sides of the divide to have their say. The team created a research space at a number of large city-wide events connecting with over 5,000 people through research activities such as voting on key themes and outcomes, comment cards about activities people would like to see around the river and vox-pop interviews about focused topics. The team have conducted in-depth workshops with over 100 individuals, held site visits and observations with key stakeholders from the local statutory and community groups and engaged with people over social media through surveys, reaching over 10,000 people. The river search and rescue team regularly see zero incidences of suicidal behaviour during city-wide events, therefore the drive is to create a more sustainable approach to increasing footfall. This led to community consultation which focused on natural

surveillance by increasing visitor numbers whilst reducing the area's stigma. A large proportion of the study has therefore been carried out with the 'general population'; in depth interviews with suicideologists and people who have attempted suicide have been carried out in parallel.

### Results

Individuals highlighted several key concerns about the bridge, stating the suicide stigma, the wind and the height as reasons to not use the space. Many thought it was underused by pedestrians and cyclists, saying they would like to use the space due to good parking and connections to the city.

The bridge is nine storeys high, spanning 866 meters, with a high flow of traffic, carrying around 30,000 people each day (Northern Ireland Roads Site, 2007). It is located on the outskirts but is still largely visible from the city.

A multidisciplinary team of students used these insights to create a range of designs. Key challenges included use of the space at night (when the majority of instances occur (Connolly, 2007) and connecting the bridge to the community. Underpinning these challenges was the explanation for the reduction in incidents during busy events: suicideologists suggested that this is due to the individual feeling part of a community and connected to those around them.

The visual concepts were tested using stakeholder workshops and led to the creation of the 'Foyle Reed' bridge concept. A community buy-in scheme for the bridge was suggested which would allow the community to take ownership of the bridge and to connect and interact with it; lighting would increase the visibility of the area and increase footfall, and in turn this is hoped to reduce suicide in the area. A prototype will be trialled in December 2017.

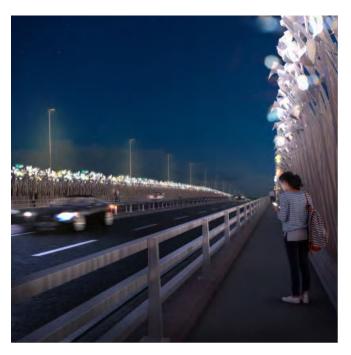


Figure 1. Foyle Reed Bridge Concept

### **Discussion**

Public opinion of barriers is often negative as they imprison the location and general population whilst maintaining the negative associations of suicide. Foyle Reeds is inspired by the 'common reeds' which surround the riverfront, providing shelter for wildlife whilst retaining the spectacular views. The barrier will be built using a modular design, complying with suicide prevention guidelines (Public health England,2015,26). By day, the bridge becomes part of a sculptural trail and provides an element of shelter and safety for pedestrians. At dusk the bridge will come alive, lighting up and interacting on three levels. Firstly, people will be highlighted as they traverse the bridge by lighting which increases in brightness, allowing CCTV staff to track people more easily. The second level of interaction is the community buy-in scheme: members of the community 'buy' a reed and can digitally control the colour of the light. The third level allows for the bridge to be more integrated into the city during wider public engagement e.g. for breast cancer awareness the bridge would light up pink.

### Limitations

This project is context specific as it has been co-designed with local people, tourists and organisations.

# **Implications**

The project, though driven by the context, has implications for other environments and locations associated with suicide. These methodologies are applicable in tackling suicide prevention in a less stigmatising way and improving the environment for all.

### Conclusion

Foyle Reeds has stakeholder and community buy-in, with funding through the private sector via a non-suicide focused positive marketing campaign being sourced. As the project moves towards the procurement phase, the measurement of impact on the community, the environment and the space is under way. Quantitative and qualitative data has been collected, and local statistics gathered, to be cross referenced with data after the installation of the barrier, planned for mid 2018.

# **Acknowledgements**

This project is funded by Public Health Northern Ireland.

### Reference List

Burns, Amanda, Edward Goodall, and Tara Moore. 2008. "A Study of Suicides in Londonderry, Northern Ireland, for the Year Period Spanning 2000–2005." *Journal of Forensic and Legal Medicine* 15(3): 148–157. doi:10.1016/j.jflm.2007.08.002.

Connolly, J. 2007. "Suicide by Drowning in Ireland." In World Conference on Drowning Prevention, 02–47. Porto, Portugal: International Life Saving Federation. http://ilsf.org/drowning-prevention/library/suicide-drowning-ireland.

World Health Organization (WHO). 2014. Preventing Suicide: A Global Imperative. Geneva: WHO

- Design Council, 2005. "The Design Process: What is The Double Diamond?" Last accessed 30 June 17. http://www.designcouncil.org.uk/news-opinion/design-process-what-double-diamond.
- Public health England. 2015. Preventing Suicides in Public Places: A Practice Resource. London: PHE.
- Northern Ireland Roads Site. 2007. "A515—Foyle Bridge, Londonderry." Last accessed 30 June 17. http://www.wesleyjohnston.com/roads/a515foylebridge.html.