Playable Cities

Creative technologies and social frameworks that connect people and place

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Dr Troy Innocent

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Executive Summary

As the popularity of smart cities has risen over the past decade, alternatives and counterpoints have emerged to challenge its focus on function and utility at the expense of human needs and experiences. As a result, playable cities emerged in opposition to early technology-driven approaches to smart cities to focus instead on people and place, often making urban environments and infrastructure literally 'playable'. While governments and corporations were installing sensors, trackers and cameras on every street corner, a mix of creative technologists, public artists and game designers took to the streets to experiment with alternative strategies for public engagement and participation in cities around the world.

The Playable City has changed our relationships with cities by making infrastructure playable. Playable Cities now have the opportunity to make the city itself a platform for play – through radical interventions into the democratic use of data and social frameworks that connect people, place, technology and code.

This research report explores strategies that connect people and place, developed by creatives working with playable cities who advocate for the democratic use of technology and data driven by the needs of citizens. Play sets up conditions sympathetic to participation and co-creation and starts conversations around what the city-as-it-could-be rather than the city-as-it-is. Playable cities[1] appropriate urban infrastructure, such as a Melbourne tram, and reframe its meaning and relationship to people and the city. While playable cities is not a new concept, a key finding of this research is the shift in relationship between smart and playable cities, which no longer operate strictly in opposition to one another. Smart cities have evolved to a second and third generations; second generation smart cities are technology enabled but led by the city, and third generation adopt citizen co-creation strategies – similar in their intent to the goals of the playable city in their placement of people as central to urban design and development. In this third generation, play emerges as being instrumental to citizen participation and to the reimagination of cities themselves. This has opened up the potential for playable cities initiatives that operate at a larger scale or are more embedded in the technological fabric of the city in which visitors, residents and workers may become part of the conversation around city development through community and ownership, with play revealing a wider range of possibilities obscured by more traditional approaches to urban planning.

Through this Fellowship, Dr Innocent has had access to some of the latest art, design, architectural and technological thinking, particularly in relation to urban play, game design and creative technologies. Throughout this report, he contributes to knowledge on the design and development of playable cities, drawing upon interviews with over fourty artists, designers, producers, architects working in the field in addition to reflection on his own creative practice research. He specifically looks at ways that we can develop a Playable City Melbourne through collaboration across academia, industry, local government and creative practice to develop and urban play community – and that takes advantage of Melbourne's identity as a third-generation smart city.

[1] The Playable City is a project initiated by the Watershed Pervasive Studio while playable cities is a term that has been taken up more broadly to describe the practice of making cities playable using creative technologies

During this Fellowship, through four main international activities Dr Innocent has

1. Developed and playtested *Wayfinder Live*, a location-based AR game about cities, in Bristol, Barcelona and the Melbourne Docklands, exploring it also as a tool for research around people and place.

2. Completed two residencies to gain first-hand knowledge in creative methodologies related to playable cities in Bristol (UK), at the Watershed Pervasive Media Studio, and Barcelona (Spain), at the Institute for Advanced Architecture of Catalonia.

3. Recorded interviews with fourty-three creative practitioners working with playable cities and completed an initial analysis of the research data in relation to recommendations of this report.

4. Invited and collaborated with Lead Playable City Producer Hilary O'Shaughnessy to visit Melbourne and conduct a week of research in the city to establish the groundwork for Playable City Melbourne.

Within Melbourne, Dr Innocent disseminated the knowledge he gained during his international travels, presenting at a number of public talks and delivering a set of free public workshops, developing a playable cities artwork within the Melbourne Art Tram program, and participated in exhibitions of his work that presented his urban codemaking practice at various stages of development.

In conducting these Fellowship activities, Dr Innocent has addressed the following question:

How can we develop an approach to Playable City Melbourne that responds to the unique cultural, social, creative, technological and urban diversity of our city, and that situates this unique civic identity in relation to the international Playable City network?

In the following report, Dr Innocent puts forward a set of seven recommendations. The information that led to him forming these recommendations is presented in five related sections that make up the body of this report. Section one introduces the Playable City concept; section two details the Knowledge Fellowship project including labs and studios visited; section three describes the City as A Living Lab via a series of creative projects and workshops; section four reports on the main research studies with excerpts from interviews in the field; section five outlines an approach for Playable City Melbourne, the project arising from this research via the recommendations of this report.

This report is relevant for those managing government arts sectors and civic and cultural centres; city design and strategy, centres, those managing creative, cultural and placemaking public programs; and artists, designers and creative producers working in digital design, serious games, creative technologies and interactive arts projects. Dr Innocent is currently Senior Research Fellow at RMIT University where he continues his research into playable cities.

About the Fellow

Dr Troy Innocent
Artist, Academic, Designer, Coder, Educator

Innocent is an artist, academic, designer, coder and educator. His public art practice combines street art, game development, augmented reality, and urban design. As a recent Melbourne Knowledge Fellow, Innocent developed the framework for Playable City Melbourne, a three-year project in which Melbourne is transformed into a playable city through an inventive blend of live art, game design and public art. Currently, he is artistic director of 64 Ways of Being, a $950,000 Creative State Commission that leads players to locations and through conversations about experience, place, language, knowing and being.

Urban play and its role in the re-imagination and co-creation of cities is central to Innocent's practice-led research. In 2018, Innocent design and developed the world's first playable art tram. Through 'urban codemaking', a design process for situating play in cities, he has developed urban games in Melbourne, Bristol, Barcelona, Istanbul, Ogaki, Sydney and Hong Kong.

Innocent's visual arts practice explores the language of digital code in works of design, sculpture, animation, sound and installation and he has 25 years' experience in galleries and museums, symposia and site-specific projects, including participation in over 60 exhibitions.

1. Playable Cities: an international network

Cities have many purposes. Cities mean different things to different people. However, their design is driven by constant change, adapting to the people that live in them. Using smart cities strategies driven by big data, their design is optimised for efficiency, commuting, work, and other factors.

While this is positive development for urban spaces, does this approach to design overlook other human needs? Does city planning and architectural design enable better cultural experiences? Do public spaces challenge us – inspire us to try something new? Do they connect us with one other, turning strangers into friends?

Playable cities appropriate smart cities infrastructure, such as the Internet of Things (IoT), to engage people with their city and with one another. The strategy takes advantage of the increase in play literacies and cultural currency of games that characterise this century. Visitors, residents and workers in playable cities become part of conversations around urban development through community participation and ownership, with play revealing new possibilities obscured by more traditional approaches to urban planning.

Research supported by the Knowledge Fellowship explored creative activity in playable cities within the UK and Europe, with a particular focus on exploring the capacity of playable cities to:

- Create connections between people and place
- Demonstrate a positive impact on social wellbeing
- Challenge the technological determinism of smart cities
- Appropriate infrastructure through playful takeover
- Test human-centred design approaches to ubiquitous computing
- Explore the impact of methodologies that connect diverse and different stakeholders
- Investigate these methodologies to start conversations around urban issues and opportunities

1.1 Benefits of Playable Cities

Playable cities advocate local, active, creative, democratic participation in technologies that are typical of smart cities – re-appropriating and re-contextualising their use and shifting their meaning. The Playable City project began as a reaction against the depersonalisation of urban environments through technology-led smart cities policies focused exclusively on optimisation and efficiencies – at the expense of human, lived experience. More recently, playable cities have demonstrated more democratic uses of data and the capacity to connect people and place – a goal of most cities everywhere, smart or otherwise. In this way, playable cities projects traverse and activate a number of disciplines and activities: game design, public art, urban design, digital placemaking, city management, community building and urban planning.

This capacity of the Playable City concept to start conversations about the city that are inclusive and that engage a wide range of disciplines is recognised as one of its strengths. Another widely recognised strength of the concept is the citizen participation facilitated by these conversations. Cities are messy spaces that are created, shaped and occupied by people. Complex problems may be approached by repurposing and appropriating the city through playful takeover via a bottom-up people-centred perspective instead of a top-down technological fix. Furthermore, problems and issues that arise in the smart city may be explored through play, presenting new solutions that may not have been discovered without the exploratory lens of the Playable City.

Playable cities create rich, memorable experiences through an open approach that encourages curiosity, imagination and engagement – and that leads to increased citizen participation. These experiences connect people and place, making the city a place for creativity and life rather than function and utility. In this way, they contribute to public health and societal wellbeing by making cities more liveable – this in turn benefits not only the culture of a city but also leads to a positive economic impact. In fact, the Playable City is integral to any progressive Smart City approach that looks to humanise technology, making it accessible and put it into the service of the people.

1.2 Challenges of Playable Cities

Creating playable cities comes with a number of challenges. Despite the enormous growth experienced by the games industry in recent years, play is often still seen as a trivial and unproductive activity. As adults, we are taught that play is something that children do, and that it is not part of the more serious concerns of adults. As a result, asking adults to play in public is a difficult request despite the perceived benefits. Crafting the right invitation to play becomes very important, as does creating the right culture and community to grant permission to play. So, while the experience of participating in playable cities is often rich and rewarding, joining the game is often difficult for adults.

Another key challenge is making play meaningful, and balancing expectations of the city conversation, is maintaining the motivation of the player to keep playing along. Play for the sake of play that is disconnected from the urban context quickly loses meaning, whereas play that is in dialogue with the city and that shifts its meaning can leave lasting impact. In contrast, play that is too overtly functional or didactic quickly causes players to lose interest – play should be voluntary rather than work. Productive play – in which the player is learning, playing with others, and making an impact on their city – is meaningful in playable cities.

Cities themselves are a challenge – they are messy, multi-layered spaces that share interests and agendas with a number of stakeholders. Reconciling and satisfying differing expectations and levels of investment can put projects at risk as they are so embedded in the space of the city. While this may open up interesting and productive conversations, it may also halt the development of a project that needs permits or permissions, access to data or connectivity for example. Developing the right partnerships is key to success in playable cities. Following on from this, one of the key challenges for playable cities is working at scale – many projects have demonstrated great success as prototypes or small-scale interventions but need further resources to be deployed at scale thereby having greater impact and leaving a lasting legacy to move beyond superficial, momentary spectacles and use play to make people think about more complex issues, like gentrification, privatization, and equality in cities.

1.3 What We Know

- We know that playable cities can connect people and place through the technologically mediated social frameworks they situate in urban environments
- We know that playable cities create new applications and contexts for creative technologies by relating them to the city
- We know that while play in cities is not new, the relationship between smart and playable cities present new opportunities for game designers
- We know that cities are complex and multi-layered – and that they are central to our social, economic and cultural life – thereby offering a public and democratic platform for citizen participation

1.4 What We Need to Learn

While the Playable City concept is now well established and draws upon a wealth of knowledge on situating play in cities it is at a turning point with growing interest from global smart cities industries and local government alike. New knowledge is needed in a number of areas, including:

- How to scale the Playable City concept in terms of audience reach and impact, particularly on how to integrate ubiquitous urban technologies without becoming generic or formulaic
- How to transfer knowledge on the design and production of playable cities, specifically identifying common strategies and processes using by creative producers and designers in successful projects
- How to engage the digital game development industry, particularly the independent game development community, in teams for playable cities projects which are often perceived as being niche or fringe to established game development practice
- What are the opportunities for Melbourne as a playable city – what activity already exists in this city and what unique ideas, approaches or projects can Melbourne offer to the international community?

1.5 Findings

Cities can be radically improved in the future by making play the central focus of urban development. Play is not usually encouraged in public spaces and is very rarely integrated into city planning processes. Instead, play appropriates urban space through playful takeover, changing and renegotiating its meaning. Playful citizens see their town or city in a new way, feeling a new sense of connection, and sensing new ways it could be – changing the city through playful intervention, a form of 'hacking' urban space.

Playable cities methodologies are able to start conversations around difficult issues and topics in cities with many different stakeholders with play opening up possibilities and new approaches. Likewise, creative approaches to technologies reimagine and reinvent their purpose again opening up new possibilities. These methodologies and approaches may be documented to provide scalable and adaptable design processes and strategies for creative production of playable cities.

Through the right mix of community building, government support, academic research and industry engagement the Playable City concept may provide a productive counterpoint to smart cities policies resulting in greater citizen participation, increased public health, and more creative, liveable cities that are also effective and efficient in terms of sustainable resource management and city management.

2. The Knowledge Fellowship: Understanding Playable Cities

In order to look at Melbourne within current research exploring playable cities internationally, I needed to undertake fieldwork to expand and resituate my practice. I needed to be in cities that were sites of experimental research into the impact of creative technologies on urban environments. Following on from this, I needed to investigate the diversity of thinking in cities in terms of digital design, smart cities infrastructure, co-creation methodologies, public art experiences, open data – and how this relates to playable cities. As a result, my fellowship was centred on fieldwork in Bristol and Barcelona, with visits also to Copenhagen and Amsterdam, interwoven with creative practice and research in Melbourne that tested and developed findings from my research in the field.

Overall, the fellowship activities set out to enhance, better integrate and promote understanding of skills and knowledge related to the emerging field of playable cities – and to explore the relationship between playable and smart cities. This focus led to fieldwork activities that were specifically designed to:

- support research and creative strategies that focus on the city as a creative platform for play
- encourage recognition of the fundamental importance of playable cities related learning and teaching across tertiary institutions, in industry and in the general community
- identify creative strategies that make cities 'playable' or 'playful'
- explore how this practice may challenge or augment popular smart cities policies
- develop an approach for applying these creative strategies in Melbourne

2.1 The Aims and Projected Outcomes of my Fellowship Travels

In planning my Fellowship travels, I established three central aims:

1. to expand my creative practice research
2. to interpret the methodologies of creative practice used by other practitioners
3. to develop work that applies these methodologies to urban environments within Melbourne

Four outcomes were projected from this activity:

1. Develop new working methods for playable cities and to test and deliver these methods through a series of public prototypes and projects
2. Synthesise my new knowledge into a report that clearly communicates how we can support the development of Melbourne as a playable city
3. Deliver industry talks, professional development sessions and informal public engagement sessions in which I demonstrate the diverse benefits of playable cities
4. Establish new partnerships and collaborations that support an expanded creative practice research focused on Melbourne as a playable city

Travelling to playable cities allowed me to interview creatives working in the field, observe projects in action, and to make my own work in response to this practice. Following are some of the findings generated by these research activities.

2.2 Exploring Playable Cities

During my travels, Bristol and Barcelona were identified as focal points in the investigation and I established relationships with research labs and studios to establish short residencies in these two cities. Other cities visited included London, Birmingham, Liverpool, Brighton, Copenhagen and Amsterdam – to visit further research labs and cultural institutions, interview practitioners in the field, and attend conferences and symposia. In-between periods of travel, I applied and tested my findings through workshops and projects in Melbourne that became increasingly focused on developing a framework for Melbourne as a playable city.

2.2.1 Watershed Pervasive Media Studio

During an intensive two-week residency in March 2018 the Bristol Playable City methodology was investigated through interviews and participation in studio activities. This included participation in two public talks, a gallery performance, an academic conference, two short symposia, an evening of presentations from new studio residents, and a creative showcase exploring new technologies – all of these produced by residents of the studio. The highlight was the Layered Realities Weekend 5G Showcase exploring the potential of next generation wireless connectivity, including creative works commissioned specifically for this showcase.

Watershed Pervasive Media Studio: https://www.watershed.co.uk/studio/

Playable City Project: https://www.playablecity.com

Layered Realities Weekend 5G Showcase: https://www.watershed.co.uk/5g

In practice, the methodologies of the Pervasive Media Studio are highly effective and productive, strengthened by the broader remit of Watershed as a cross-artform curator, producer and venue engaging with participatory technologies. Movement in the studio space and between disciplines is fluid, with a creative ecosystem that supports long-standing practitioners alongside new talent actively supported via public talks, workshops and small commissioning programs. The focus on production is central – everybody is making, building or playing – unless they are one of the creative producers whose job it is to focus, amplify and organise creative activity in the studio. A creative producer in the Pervasive Media Studio is someone who is not only scheduling projects and managing resources but shaping its creative direction by finding new stakeholders, linking to new research, exchanging creative knowledge, building communities, and telling the story of the creative project. Building capacity in this role is important to creative labs everywhere, including Melbourne whose large amounts of creative activity could be further focused by adopting similar methodologies in practice.

2.2.2 London, Birmingham, Liverpool, Brighton

Additional interviews and research took place in locations across the UK via the Pervasive Media Studio network, including the following locations and activities:

Now Play This http://nowplaythis.net/

Every year at Somerset House in Covent Garden, London the Now Play This festival is held showcasing experimental game design to the public within an urban context. Part of the London Games Festival, in 2018 the major theme was place and process – exploring what it means to be within a particular place or city. Running under the direction of Holly Gramazio since 2015, the festival features workshops, talks, a game jam and street games alongside an exhibition of playable games.

Birmingham Open Media (BOM) https://www.bom.org.uk/

Home to many Pervasive Media Studio alumni, the emphasis at BOM is on applied projects with social impact and run over ten two-year fellowships concurrently to create a community of practice situated within a lab in the inner city. The lab has a gallery, residency space and an ongoing public program of events in which the BOM Fellows participate with strong connections to Watershed in Bristol.

Foundation for Art and Creative Technology (FACT) https://www.fact.co.uk/

FACT turned 15 in 2018 and was established around a similar model to Watershed with a cinema and gallery central to their public programs. Known for commissioning and presenting new media art forms, under the direction of Mike Stubbs it became one of the UK's leading centres for digital media art and subsequently established an international reputation.

Blast Theory https://www.blasttheory.co.uk/

Based in a converted Victorian warehouse in Portslade, Brighton overlooking the harbour, Blast Theory have situated themselves in a customised studio space that includes three studios and a residency space. Blast Theory are a three-person collective experimenting with the interactive and narrative possibilities of location-based game design since their 2001 pervasive game project *Can You See Me Now?*

2.2.2 Institute for Advanced Architecture of Catalonia

Two research activities took place in Barcelona during the Fellowship: participation in the Smart City Expo World Congress – as part of the inaugural Austrade delegation to this event, presentation at the Responsive Cities Symposium, and a two-week residency at the Institute for Advanced Architecture of Catalonia (IAAC).

Responsive Cities Symposium: http://responsivecities2017.iaac.net

Smart City Expo World Congress: http://www.smartcityexpo.com/

Institute for Advanced Architecture of Catalonia (IAAC): https://iaac.net

Built on architectural and urban design methodologies, the approach at IAAC is highly interdisciplinary and introduces a range of strategies to explore 'advanced architecture' including game design, robotics, IoT technologies, data visualisation, sustainable design, and research into new materials and methods for fabrication. Within the City & Technology program architecture is extended to include social frameworks for citizens to participate in their city exploring opportunities in urban apps, open data, responsive cities and systems for generating cities from code. The teaching methodology is based on seminars run by a full-time member of Faculty supported by industry professionals with specific expertise in the topic. Postgraduate students are encouraged to be experimental and speculative with their design, working together in small collaborative teams to realise and demonstrate their concepts. Research is supported by teaching with postgraduate student projects showcased by IAAC through its international programs and exhibitions.

2.2.3 Copenhagen and Amsterdam

Further interviews and field research took place in Copenhagen and Amsterdam.

WeMakeThe.City Festival: https://wemakethe.city/en/

In Amsterdam the main activity was this festival that brought together experts from around the world working in the planning, design and management of cities. Based on the 'Amsterdam approach' and drawing upon research into technology and society from the WaagSociety, the festival hosted symposia, workshops and public events across the entire city to explore the broad theme of how to make the city better for all.

Center for Computer Games Research (ITU): https://game.itu.dk

Counterplay: http://www.counterplay.org

In Copenhagen connections were established with Miguel Sicart at IT University Copenhagen and the Copenhagen Games Collective with a seminar presented at the Center for Computer Games Research on playable cities. Sicart's current work explores technologies in cities that appropriate familiar actions and behaviours into urban games. Copenhagen – and Denmark more broadly – is rich in urban play with the Counterplay festival being held in Aarhus every two years.

2.3 Findings

Within the ecosystem of the Watershed Pervasive Media Studio, the Playable City project was conceived drawing upon the emerging worldwide curiosity for urban play using creative technologies and in reaction to the technology-driven agenda of smart cities. Its methodology is effective on three levels: firstly, in bringing diverse disciplines and stakeholders together into a shared vision; secondly, in framing conversations about urban environments in novel and engaging ways; and thirdly, in providing an uncomplicated creative framework for working with the complexity that emerges from these first two aspects. This methodology has been put into practice in eight different cities around the world as part of the Playable City International network. Based on relationships established during my Knowledge Fellowship Melbourne is now part of the Playable City project.

While the focus of IAAC is international, it plays an important role in the creative ecologies of Barcelona, including the open approach to smart cities adopted by local government that is focused on establishing participative democracy for its citizens. Development of an open-source common data infrastructure is central to this plan – to protect citizen data, ensure access, and to ensure that the city itself owns this platform and network. Interest in citizen participation in urban planning policies via hybrid processes of neighbourhood meetings and online consultation has created opportunities for IAAC to research approaches to citizen co-creation, also an active area of collaboration between local government and universities in Amsterdam. In Melbourne, a range of urban challenges around infrastructure, mobility, accessibility, urban design, placemaking and other domains would benefit from a similar democratic and participatory approach to urban development.

The Netherlands and Denmark are supporting progressive urban planning and design agendas, often with a playful approach or directly involving game designers in their interdisciplinary teams. Close relationships between industry, academia and local government are leading to larger scale projects such as the formation of urban co-operatives in which citizens participate in urban planning processes that shape subdivision of lots and infrastructure, and the development of micro-economies that connect the community economically and socially after development has been completed.

These findings led to the expansion of my creative practice research to adopt similar approaches that work with the city as a living lab.

3. The City as a Living Lab

My creative practice research combines knowledge developed in my roles as artist, academic, designer, coder and educator. As a methodology, creative practice research combines scholarly research, creative methods, and practice toward the discovery and articulation of new knowledge expressed via a diverse range of outputs. Designing a game in public space, for example, involves asking questions about game design, people and place, creative technologies, affordances of urban design for play and so on. Translating this design into a playable experience situates research questions in situ, using the city as a living laboratory – players may be observed or interviewed about their experiences to inform further research and development.

Using this methodology, I have investigated playable cities, using urban environments as test sites – particularly those situated within inner Melbourne. In 2005, I founded the *Micronation of Ludea* in Hosier Lane and surrounds – a fictional nation-state based on a social framework connecting play and daily life. *Urban Codemakers*, a 2010 Melbourne Laneway Commission, developed this concept via a five-month pervasive game situated in the Melbourne CBD that explored the role of game designers as urban planners. A year later, through projects in Ogaki, Istanbul and Adelaide, I extended this framework to explore AR as platform for representing these ideas, and this foundational research lead to the development of the first iteration of *Wayfinder Live* at Melbourne International Games Week in 2016.

These twelve years of public art practice situating urban play provided the foundation for my approach to the Knowledge Fellowship. Through this fellowship, I have had the opportunity to accelerate and expand the development of my practice through professional and creative development in three key areas:

- presenting and reflecting on my creative practice in an international context
- intensive and situated research on playable cities through interviews and events
- design and development of new work supported by new partnerships and collaborations

During the fellowship, I delivered seventeen presentations and talks, ran nine workshops, and three urban games in Bristol, Dublin and Barcelona. Two of these games were situated within residencies at the Watershed Pervasive Media Studio and the Institute for Advanced Architecture of Catalonia. Through these residencies I was exposed to a broad range of methodologies and practices for creative work in cities that informed the development of my own creative practice research and gained valuable feedback on my own projects leading to further iterations and improvements to their design.

Presenting and participating in events such as Smart Cities Expo in Barcelona and WeMakeThe.City in Amsterdam during the fellowship expanded my creative research practice to engage with policymakers, architects, entrepreneurs, urban planners, local government, social professionals, and active citizens in addition to artists, technologists, designers and researchers. Interviewing fourty-three different people on the topic of playable / smart cities and their own creative research provided an important set of research data that will inform further work and publications, the first of which takes the form of a forthcoming book chapter.

Ten activities - ranging from small prototypes to major works, workshops and large-scale research investigations - are outlined here in the order in which they happened across the life of the fellowship. As such, they represent different views and perspectives into the methodologies of playable cities as creative research practice, and the basis of my expanded practice going forward.

Figure 1. Urban codes situated in Melbourne

3.1.1 Urban Codemaking

Urban codemaking blends street art and augmented reality, urban design and game development. Theoretically it draws upon the psychogegraphy of the Situationists, the spirit of the New Games Movement, the urban politics of street art, and the critical play of location-based games. It is a framework for decoding and reimagining cities, a programming language for urban space that marks locations in the city using codes enabling multiple alternate readings of that city - by machines, humans, and other entities.

This approach decodes cities through the appropriation of urban spaces in readymade ‘game levels’ and the participation that it asks of players to become more observant, aware and connected with urban environments. ‘Urban codes’ are abstract, machine-readable, highly recognisable markers that are easily attached to almost any surface in the city, that may be connected to animation, sound, text and other media. During the Knowledge Fellowship an urban codemaking ‘field kit’ was developed as a tool for research into urban character and design with urban codes becoming linked to different sources of data, information or stories.

Figure 2. Scenes from Wayfinder Live game in Bristol during March 2018

3.1.2 Wayfinder Live Bristol

During a two-week residency at the Pervasive Media Studio in Bristol, two play tests were organised with residents of the studio and members of the public. Bristol is a city with population of approximately 536,000 residents and was named UK’s leading smart city in 2017 in the second UK Smart Cities Index. The River Avon runs through the town centre and

waterfronts are full of many active public spaces with restaurants, museums and galleries, local businesses and landmarks. Bristol has a well-recognised identity as a centre of arts and culture, with the Bristol pound – a local currency – established in 2012 to represent this unique civic identity.

Location research for *Wayfinder Live Bristol* took place around Watershed and beyond, tracing a walking path linking two waterfronts linked via a ferry, with an endpoint just past Aardman studios located in view of Banksy's *The Girl with the Pierced Eardrum.* With the assistance of Creative Producer Victoria Tillotson at the Pervasive Media Studio, permissions were sought from managers and owners of locations observing protocols established within the creative community.

Location research uncovered a wealth of urban character and revealed existing paths used for wayfinding drawing upon local knowledge. Using a new feature developed for this iteration of the game, clues and location texts were updated and changed in realtime so that local knowledge could be easily written into the play experience. The first game played out on March 14th 2018 with 18 participants, and the second game was played on March 23rd 2018 with 10 participants. Following each game, players were interviewed in groups about their experience. A curious aspect of both games was the selection of the 'renew' faction by all players which resulted in the game map being dominated by orange code.

Figure 3. Images from geofilter prototype developed at the Watershed Pervasive Media Studio in March 2018

3.1.3 Open Data Situated

Game design concepts for playable cities were developed and tested during the Fellowship, most notably at the Watershed Pervasive Media Studio. With the assistance of creative technologist David Haylock an AR 'geofilter' prototype was developed using open datasets containing data about the city from Open Data Bristol. Conceptually, the prototype explored the situation of data local to the player through AR to make the data more tangible and relatable to player location.

geofilter situates an immediate experience of open data in relation to the player via AR. It is not a 'big data' visualisation of the whole city but rather connects a single player with local data – that which is immediately around them. The concept aims to make data more relatable by connecting it to a particular place – as the player walks around the geofilter moves drawing upon new elements in the dataset. In this way, layers of the city around the player usually invisible are made tangible through their representation via an overlay on the world around them. In the prototype, an open data set documenting trees in Bristol was used and the app visualised trees into in the area by drawing them on screen.

Figure 4. Images from workshop and game in Poblenou superblock in Barcelona during June 2018

3.1.4 Wayfinder Live Barcelona

During a two-week residency at the Institute for Advanced Architecture Catalonia (IAAC) another *Wayfinder Live* game was put into play within the Poblenou 'superblock'. The superblocks are an initiative of the local government to increase green and public spaces in Barcelona. Air quality is an issue in the city, as is the amount of public space in relation to population density. Within the superblock, vehicular access is blocked or restricted allowing some streets to become public spaces and opening up intersections to parks and playgrounds thereby increasing the amount of green space in the city.

In this game, ten postgraduate students in the Master of City & Technology program participated in a three-hour workshop focused on developing a *Wayfinder Live* 'game level'. This tested the use of the game system as a field kit for urban exploration, mapping and decoding. During an afternoon, sixteen locations were identified and marked with urban codes. and clues and location texts were developed revealing different aspects of the urban character of the superblock.

In this iteration of the game, conceptually seven different types of information were identified in connection with the urban codes. Different zones within the superblock were discovered as part of the process connecting the squares on the grid, with the exception of one corner that lacked urban character and was difficult to access and so the students excluded this from the game level.

Figure 5. Images from urban play workshops situated at the City Library

3.1.5 Urban Play workshops

In order to develop the urban codemaking methodology further, six workshops were hosted by the City Library free to members of the public. These included developing a game level situated around Flinders Lane, discussion and play testing of *Wayfinder Live*, and open-ended urban play workshops:

Citizens of play: putting playable cities to the test Be part of the game development process on the streets of Melbourne. This workshop playtests a location-based augmented reality game currently in development. Gain insight into the design and development process and experience being part of a play community.
Wayfinding: transforming streets through play Cities can be sites for self-discovery and transformation; they are also constantly changing and evolving. Map out a game level on the streets using a wayfinding field kit in this workshop. Find out more about urban codemaking, a framework for decoding, reprogramming and reimagining cities that marks locations in the city using urban code.
Urban games: playing on the street Smart cities optimise and improve urban spaces but do they overlook other human needs? While research centres and urban designers are installing sensors, trackers and cameras on every street corner, game designers and artists are using a cornucopia of technologies to bring back an old idea – playing on the street. Join this workshop to experiment with play on the streets of Melbourne to improvise and develop your own urban game.

Each workshop ran for two hours and had a capacity of up to fifteen participants. They were promoted through the Melbourne library service and attracted a diverse audience. The game level developed by the two workshop groups was played in later workshops and assisted further in the development of *Wayfinder Live.* The game level around Flinders Lane was documented for future replay.

This set of three workshops introduced and developed a playable cities methodology towards the beginning of an urban play community in Melbourne that moved across the different focus of the three workshops in the series: reflective play, location-based game design, and speculative urban play. Taken together, they present a six-hour introduction to the methodology of playable cities for creative or technical people from any background.

Figure 6. Images from RE:CODE exhibition

3.1.6 RE:CODE

During 2018 Melbourne Knowledge Week, the most recent iteration of the urban codemaking language was exhibited to the public. *Re:Code* documented this practice by situating it within the broader concept of playable cities and describing the language of urban codes as they are defined within the experimental field kit.

Urban codes are made of nouns, verbs and adjectives. Over the past seven years, hundreds of these codes have been deployed in over 15 cities, linking multiple sites through their shared aesthetic language to create a single ludic city; collapsing and traversing time and space into an alternate reality, an imagining of another city.

Within the exhibition, sixteen verbs were the main focus, each representing common activities within the city such as to create, explore or transform. Social media expanded on these stories, adding to their meaning. Documentation from different cities explored during the Fellowship were displayed alongside AR experiments that abstracted the urban codes.

Figure 7. Images from the Wayfinder Live game situated in the Melbourne Docklands during October 2018

3.1.7 Wayfinder Live Docklands

The final *Wayfinder Live* game was developed for the Melbourne Docklands, launched in connection with *Longitude: Games and Play from the Asia Pacific Region* situated at Library at The Dock. This location was also the starting point for the game. The Melbourne Docklands as an urban development has a relatively short history and much of the area is newly constructed. A mix of new and old was identified, taking players on two journeys from the library – one leading to Mission for Seafarers, and another to a lookout across the waterfront.

This game level prototype was open to the public visiting the exhibition. It explored updates to the game design and an investigation into the potential of Docklands as a site for play. Clues led players to walk along the water, and to find the Mission for Seafarers, an important local landmark that is hidden and hard to access although once found presents a rich and layered experience. Future games in the area would play into this narrative further.

This iteration finalised the design of *Wayfinder Live* ready for future development. Through the three cities involved in play testing and the different creative environments – creative producers, architects and urban designers, the Melbourne Docklands community – the *Wayfinder Live* game has expanded to involve players within a narrative about the city in which each game is situated and the forces that shape its urban character.

Figure 8. Images from workshops and presentations during Hilary O'Shaughnessy's visit to Melbourne

3.1.8 Playable City Workshops

During a one week visit in October, Lead Playable City Producer Hilary O'Shaughnessy worked with Dr Innocent to explore Melbourne through the lens of the Playable City. The visit was planned as an exchange of knowledge and expertise – the Playable City project has as much to learn from play communities in Melbourne as we do from their methodology. Workshops and briefings focused on two main goals at this stage:

1. introducing the Playable City project via examples from cities such as Austin, Oxford and Lagos
2. testing the methodology across a diverse range of stakeholders and creative practitioners

The response was positive and opportunities for further activity in 2019 were quickly identified with a focus on a continuing exchange of knowledge and expertise and on how to build on Melbourne's existing strength and communities in playable cities. The Watershed Pervasive Media Studio is recognised for its success in building collaboration and kickstarting imaginative applications of creative technologies. Playable City Melbourne is a project of scale requiring significant investment and is envisioned as a three-year plan focused on establishing a lasting impact and legacy rather than as a singular event or public program.

Activities during Hilary O'Shaughnessy's visit included:

- one-day workshop hosted by City of Melbourne
- workshop and presentation at the Swinburne Smart Cities Research Institute
- visits of locations across inner Melbourne including City of Port Phillip, City of Yarra and City of Maribyrnong
- briefings with ACMI-X, City of Port Phillip and State Library Victoria
- planning meetings to establish three-year plan for Playable City Melbourne

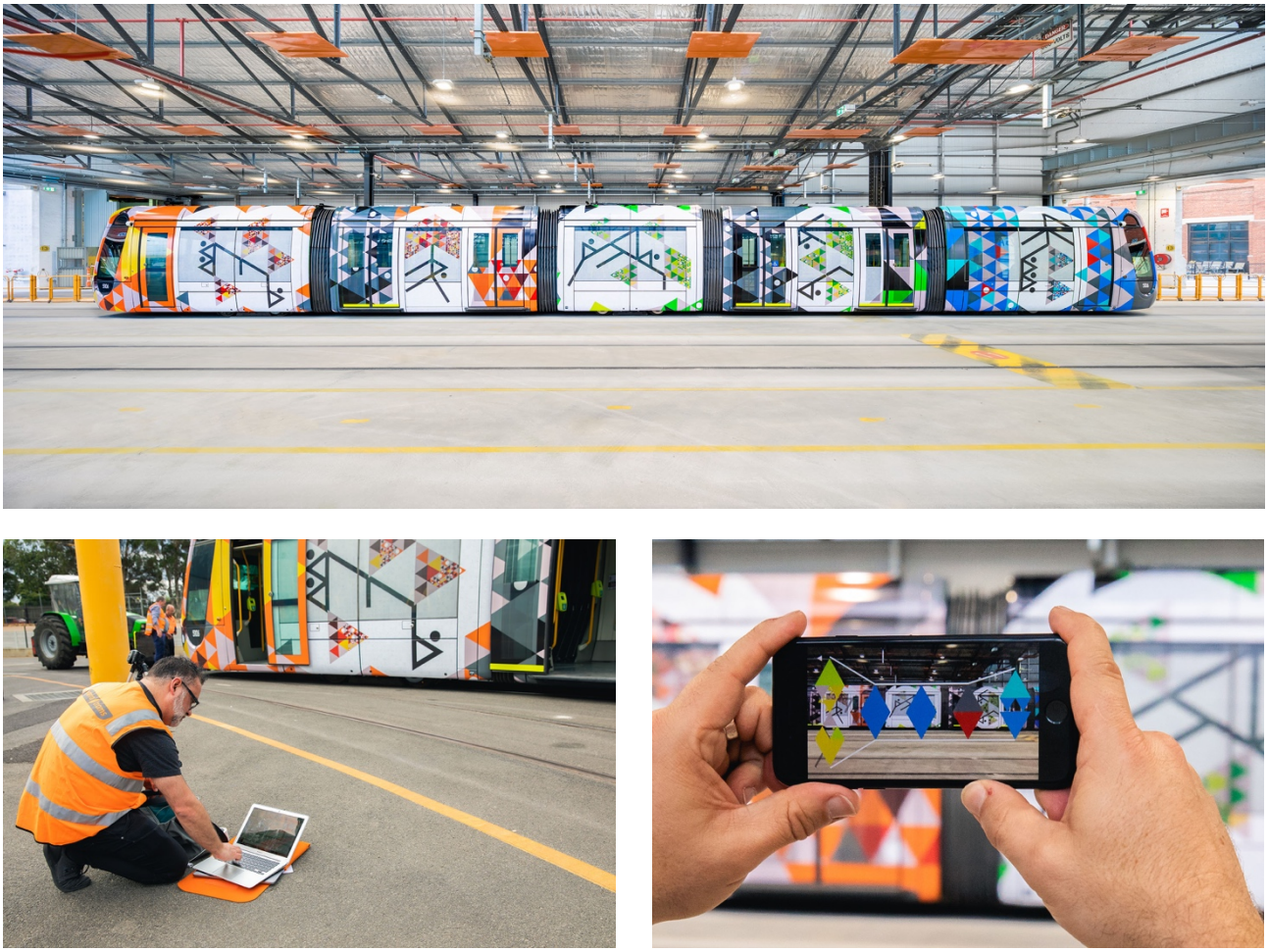


Figure 9. Images of 2018 Melbourne Art Tram entitled *Accelerando*

3.1.9 Playable Art Tram

To test the playable city concept in Melbourne, a creative project was developed that transformed public transport infrastructure into a playable experience. Developed during the Barcelona residency the concept was submitted to the 2018 Melbourne Art Tram program and selected as one of the eight designs launched in October during the Melbourne International Arts Festival.

The design draws upon the language of geometric abstraction and blends it with machine vision and code. *Accelerando* transforms a 32.5 metre long C2-class Melbourne tram into a visual music score – literally making the tram playable. This allowed the exploration of an experience that is embedded into the city and allow people to see it in a new way; seeing a tram as music when viewed through a mobile phone camera. The speed of the tram generates different musical compositions, if it's stationery, accelerating, at full speed, slowing to a stop and so on. So, in a way the inspiration really is the particular ways in which trams move through urban spaces and the work is visualising and sonifying that movement.

Games and play have become increasingly embedded in daily life over the past two decades – they have become pervasive. *Accelerando* appropriates urban infrastructure – a tram on our public transport network – and transforms it through playful takeover, giving it poetic meaning. It also uses augmented technology that is becoming increasingly accessible for creative experimentation to make that happen. As games and play become something that is not only about entertainment but also challenge and reimagine our ways of being in the world we will experience a wider range of creative expression and possibilities – play can literally create alternate realities for us that are not separate to the world but reshape the world we already live in.

It is a uniquely Melbourne based response to playable cities context and has generated interested internationally toward the development of similar projects in Taipei and Aarhus.

Figure 10. Images from concept development for Creative State Commission 64 Ways of Being

3.1.10 64 Ways of Being

Playable cities bring people into civic conversation through playful takeover of public space. A new conversation around Melbourne as a playable city is beginning to take shape - and as Melbourne grows, it is a conversation that needs many voices and strategies. 64 Ways of Being is a public art commission central to that conversation.

64 Ways of Being was developed with the support of Stage 1 Creative State Submission funding, producing a concept development document and feasibility study to secure Stage 2 funding for development.

In this free-to-play app, Melbourne is transformed into a playable city through an inventive blend of live art, game design and public art. People and place are connected at 64 locations across the city via augmented reality encounters capturing different ways of being. These experiences re-imagine Melbourne's identity as expressed through its creative, linguistic, cultural, social and urban diversity.

The creative team realising this project brings together live art, game design and public art to explore the potential of augmented reality to engage multiple senses and emotions, explore different layers of reality, and to tell stories. It brings together a live art collective, a game development studio and myself as an artist gamemaker working with language and code in public space – connecting creative disciplines in new ways.

It is supported by cultural institutions, local government and a major public research university. This network provides access to social histories and local communities that embed the work in the life and culture of Melbourne's citizens. It presents an opportunity to design, develop and play a work of scale, and to create an enduring urban legacy by making Melbourne a playable city.

3.2 Findings

Creative practice research working with the city as a living laboratory connects situated practice, mixed methods and public outputs. Working with playable cities in practice means situating play in relation to the pattern, life, structure and code of the city – play does not happen in a space set aside for that purpose, but on the streets alongside everything else that is happening in a city. Creative methods need to be responsive and relational to this context, working across disciplines to recognise the many different layers – social, cultural, economic, technological and historical – of the city. The creative outputs that put these methods into practice are equally diverse – games, workshops, exhibitions, prototypes – but are always situated in public space and usually involve interaction, participation and play to bring them into being.

In my practice, I explored the fundamental question posed by playable cities – that is how urban environments may be appropriated and transformed, to be made 'playable'. When creative practice is situated in this way, it

comes into contact with everything that makes a city – people, infrastructure, rules and systems, architecture, spaces and so on. To make these playable, my practice worked with augmented reality (AR), public art and wayfinding using game design to make connections between these to create a hybrid platform for play. AR is used to situate experiences, rather than information, for players that are multisensory usually working with interactive or generative music and animation. These are connected to public art – not monumental sculptures or installations – but trails of markers (urban codes) placed directly into the city or the appropriation of infrastructure such as the Melbourne tram. These experiences are connected via the broader theme of wayfinding – not wayfinding to get from one place to the next but finding ways of being in the city, emotional states that arise through play resulting in a feeling of heightened intensity or connection with place.

My creative methods are based on pervasive game design principles – an approach to making games in public space that expands game design spatially, temporally and socially, making it pervasive. This methodology allows for the experiments outlined earlier to happen in ways that are embedded in and connected to urban environments, drawing upon play to transform their meaning – to put players into a new set of relations with the city. Through the fellowship projects, this methodology has been tested and expanded in relation to different cities and contexts, by comparing the affordances of urban environments in Bristol versus Barcelona for example. Likewise, the focus of different creative environments has expanded the disciplinary mix that informs these methodologies – by comparing creative technologists and producers in Bristol with architects and urban designers in Barcelona – and introducing new critical perspectives into my approach to playable cities.

Aside from the ten projects listed here, the major output of the fellowship research is an adaptation of this creative practice and methodology to Melbourne, drawing upon the expanded practice and interdisciplinary methods developed during the fellowship. Playable City Melbourne looks at what playable cities are now in response to our particular social, cultural and environmental context, presenting a creative framework for further creative outputs exploring the research contained in this report. Scholarly outputs will also follow through further writing drawing upon presentations, workshops and interviews during the fellowship. The major study informing this writing is summarised in the next section, followed by an overview of Playable City Melbourne and recommendations for bringing it into being.

4. Citizens of Play

Throughout the fellowship, fourty-three interviews were conducted with designers, urban planners, artists, technologists, architects, curators and creative producers. Using a design research methodology, participants were asked a set of ten questions about their practice and its relationship to the cities they work in.

This research explores connections between placemaking and play, particularly the recurring motif of the city as playground and emergence of different ways of seeing the city such as those offered by open data platforms. It considered new ways of being that may be experienced by 'citizens of play'. Play may allow citizens may see their town or city in a new way, feeling a new sense of connection, and sensing new ways it could be – changing the city through playful intervention. This study explores different strategies creative practitioners use to encourage play in urban space, and on their thoughts on playable cities in relation – or opposition – to smart cities.

4.1 Description of the Project

Citizens of play is an investigation of creative strategies that make cities 'playable' and their relationship to policies in smart city design.

Play has been part of urban life since the emergence of urbanisation during the Industrial Revolution. Urban play has been central to the emergence of pervasive game design over the past two decades, running in parallel to an increasing focus on smart cities. In 2012, the Playable City project was initiated at the Watershed Pervasive Media Studio in reaction against the technological bias in smart cities policies at the time. More recently, approaches to the smart city have become more varied with some smart cities adopting policies that aim to connect people and place using similar strategies to those developed by the Playable City project.

The research project utilises qualitative data from interviews conducted with producers, designers, artists, government workers and researchers working with playable cities. The interviews ask about their creative practice, experiences with players, and shifts in understanding of the cities they are working in that may have emerged through these projects.

Overall, the project aims to enhance, better integrate and promote understanding of skills and knowledge related to the emerging field of playable cities design. The research will inform publications aimed at helping creative professionals design and develop creative projects using the smart city as a platform for play. The project is specifically designed to:

- support research and creative strategies that focus on the city as a creative platform for play
- encourage recognition of the fundamental importance of playable cities related learning and teaching across tertiary institutions, in industry and in the general community
- identify creative strategies that make cities 'playable' or 'playful'
- explore how this practice may challenge or augment popular smart cities policies

4.2 Design Research methodology

This research is situated in creative practice research and has a pragmatic, practical focus adopting an approach focused on design processes used in playable cities projects and the impact of these projects situated in this domain. All participants were asked the same ten questions covering methods and strategies used in their creative practice, local knowledge of smart cities and open data policies, and the participation of players in public space in their work.

The two primary sources of interview participants were the Watershed Pervasive Media Studio in Bristol, UK, and the International Institute for Advanced Architecture Catalonia (IAAC) in Barcelona, Spain. Additional

participants were invited from London, Birmingham, Aarhus, Copenhagen, Utrecht, Amsterdam, Melbourne, Canberra and Christchurch based on their connection to the themes of the study. While it represents an extensive study, it is not exhaustive – opportunities were identified during the research in Asia and Americas that were outside the allocated time and resources but were identified as opportunities for future work to complement this study.

A detailed analysis of the research data generated by this study is beyond the scope of this report. Selected quotes are included in the next section to support the seven recommendations that conclude the report. A full list of those interviewed is included as an appendix and future publications will draw upon the research data to develop the themes of this report.

4.4 Findings

Creative practice in playable cities has increased over the past decade, with activity spread across creative spaces such as the Watershed Pervasive Media Studio, academic research in universities, some small creative studios and start-ups, recurring festivals and local government labs and projects. Publications and conferences on the topic have also increased, along with interest from those working with smart cities seeking solutions to the challenges of citizen participation.

Overall, despite increasing convergence between the goals of smart city and playable city projects – such as connecting people and place, for example – there is little shared knowledge between the two domains. An opportunity exists for knowledge sharing strengthening opportunities, by way of example making playable cities projects more scalable across different urban environments using the city as a platform for play, and the establishment of more robust design frameworks in situating play in smart cities that move beyond simple 'gamification' strategies. A central theme that emerged around the role of play in urban environments was that of the 'city conversation' – play as a way to open up conversations and to explore possibilities that would have otherwise remained undiscovered and unexplored by more traditional approaches to urban design.

A robust, well-tested set of strategies and methodologies for the design and development of playable cities projects has been established by a small, focused collective of creatives working in this domain. Although it is beyond the scope of this report to complete an extensive analysis of the interview responses, a summary of the key concerns and themes includes the following responses:

- a diversity of practice – while the primary role is typically creative, many practitioners were combining expertise across two or three disciplines in their creative projects
- there is also a diversity of ideas around what defines a 'playable city', while people, place and play dominated responses almost everyone had their own interpretation of this concept and situating creative technologies in ways that encourage participation and play described as common approach
- strategies for creating invitations for adults to play were dominated by themes of appropriation and permission, with an equally diverse mix of approaches that usually responded to a specific context or situation that informed the design and development of urban play
- most practice was informed equally by a particular philosophy or idea about what the city could be for people and by each practitioner's disciplinary background and related methodologies they brought to playable cities
- most practitioners were not aware of any smart cities policies in their city
- very few practitioners were working with open data in any way
- considerable discussion emerged around the relationship between playable and smart cities, often prompting longer responses describing the dynamic interplay and overlap between the two concepts rather than operating strictly in opposition to one another
- a diverse range of technologies was reported as useful to urban play and usually selected on a case-by-case basis directed by the needs of specific projects

- overall, considerable evidence was given for the positive and critical impact of play on public space with sustained activity leaving a lasting legacy on specific sites and locations

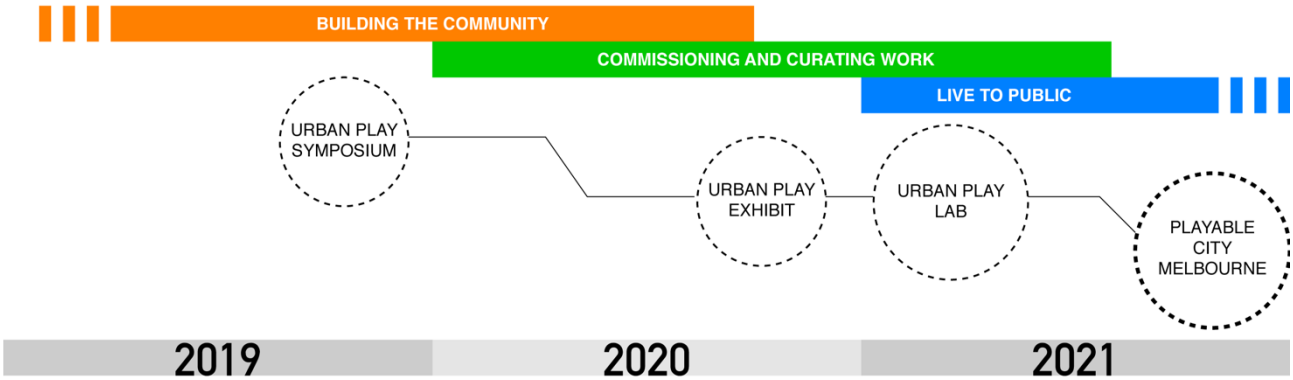
5. Playable City Melbourne

Based on the findings of this report, it is proposed that Melbourne become a playable city over the next three years. Playable City Melbourne is a collaborative project connecting the city, creative industries, local government, academia and citizens that recognises, develops and expands existing capacities in: independent game development industry and communities, experimental arts and culture, the rich character and affordances of our urban environments, progressive approach to smart cities, and a long history of experimentation with urban play.

Playable City Melbourne: https://www.playablecity.com/cities/melbourne/

5.1 Making Melbourne a Playable City

As part of the fellowship research, Hilary O'Shaughnessy visited Melbourne in October for workshops and talks, producing a report on opportunities for the Playable City project in Melbourne. We developed a three-year plan for Playable City Melbourne across three stages:



Putting this plan into action requires the following actions:

- building capacity and awareness through public events and workshops
- establishing a partnership with Watershed Pervasive Media Studio
- collaborative research with the university sector on the impact of urban play
- commissioning and creating new work supported by a major cultural institution
- building an urban play community with representation from a wide range of stakeholders
- establishing an urban play lab to develop creative capacity and produce commissions
- seeking industry partnerships and investment to support these actions

Based on the findings of this report, the following recommendations are made to support Playable City Melbourne:

Recommendation 1

Make Melbourne a playable city by recognising and celebrating existing urban play activities in Melbourne, developing and supporting new urban play initiatives, and establishing networks to share these with the world.

This report recommends that government bodies, non-for-profit and industry organisations and the commercial sector support Melbourne a part of the international Playable City network. Melbourne is already home to unique and innovative playful culture developed by resident experts working with play in cities. Connection with an international network of play will lead to an exchange of knowledge, expertise and projects between Melbourne and the international Playable City network. This will provide a distribution platform for Melbourne-based projects and research to be shared with the world and ongoing exposure to international developments in the field within Melbourne.

Clare Reddington: "So it produced a really fertile place for smart city strategy to be more creative, more innovative, less – like, when people bring a chain restaurant to Bristol it always fails… There isn't many. I mean, there are some, obviously, but loads of them come here and die, where they've been really successful everywhere else, and I feel like Bristol feels like that about proprietary technologies as well. It's never bought a city OS, really, so where everyone was selling them and continues to sell them without really knowing what they're selling them for, I think, Bristol was like, "No, we're going to build our own OS, and it's going to be, like, people-based.""
Matt Adams: "… One of the reasons we're in Brighton is precisely because it is both playful and a smart city, in the broadest sense, you know. Whether it is a smart, trademark, city or not, you know – but the fact that it has a strong digital community and a strong creative community and a strong gay population, a strong tourist population, a strong seaside…"
Cathy Hope: "… the uptake on the term "play" across the lifespan and as a mode of cultural practice in Canberra and everywhere has been surprisingly good, whereas I thought I would have to be – I still have to explain myself partly, but people have been grabbing onto this term because a lot of people are interested in this notion of play."

Recommendation 2

Explore possibilities in First Peoples ways of knowing and being for making connection between people and place in urban environments

This report recommends that government bodies, non-for-profit and industry organisations and the commercial sector engaging with urban environments build upon existing the rich repository of existing knowledge of First Peoples through consultation and collaboration. Contemporary urban environments can benefit from past, present and emerging knowledge on connecting people and place, and Playable City Melbourne provides a platform for sharing this knowledge with the world. Consultation and collaboration should be governed by the *First Peoples Action Plan for the Creative Industries 2018-2020* developed by Creative Victoria to address equity, accountability, cultural recognition and to create meaningful relationships.

Mathias Poulson: "… With the sort of theme of connections, like, bringing people together, exploring more how can play do that, because it feels – most societies, most countries, basically, have huge problems with, like, lack of connections between people. People are totally divided in so many ways."
Miguel Sicart: "Play is a way of creating – play is also used as a way of creating cohesion within communities and creating communities out of scratch."
Ruth Catlow: "… the conditions where people are bringing their imaginations in its most kind of open condition into a space with other people and to do meaning making in that space together, and then to experience what it feels like to do that. … about people doing meaning making together. I think it's the thing that helps people feel sane. It helps us build connections…"

Recommendation 3

Explore possibilities and opportunities for urban play in cities and metropolitan areas in Asia

This report recommends that government bodies and the university sector undertake further research into playable cities in cities and metropolitan areas in Asia. With few exceptions, Asian cities have been overlooked by the playable city movement although initial research suggests unique opportunities and situations for urban play. As part of the larger international network, Playable City Melbourne is well-positioned to be a leader in the Asia-Pacific region in exploring social, cultural and technological opportunities for academic research and creative production.

Giovanna Carnevali: "Because when you are in the middle of a metropolis, when I think about Moscow, when I think about Paris… they're megapolis – metropolis, they are even now becoming megalopolis. You go to Singapore, Hong Kong, it's the same. You feel, like, this verticality of city. You feel, like, this hectic way of living cities, and that to me is not playful in that sense. So even New York or even, I would say, Hong Kong can be playful, whenever you make this environment – public environment comfortable."
Clare Reddington: "I've travelled with Hello Lamp Post and with Shadowing the most, and both work really well cross-culturally, and that's something that's been really interesting about Playable City projects. I think they are so simple they travel, but Shadowing I really like looking at and I loved taking that to Japan, and I also really like how different it feels in different types of cities or different city areas. When we had it in Bristol, how it felt down the, like, Victorian looking alleyway to how it feels in the kind of glass businessy district is very stark."

Recommendation 4

Build a Melbourne urban play community

This report recommends that government bodies, non-for-profit and industry organisations and the commercial sector participate in a network established to share knowledge and pool resources around playable cities. Melbourne is already home to many thriving play communities engaging with independent, experimental and creative game development. Exploring the potential of play in the city requires experts from these communities and a diverse range of other disciplines including: urban design, live art, computer science, ethnographic research, game studies, public art, architecture and sound art. Collectively, the urban play community can work together to playtest, workshop, design, develop and realise opportunities for play in the city ranging from experiments and prototypes through to large-scale collaboration and research.

Hilary O'Shaugnessy: "… Getting a different range of people that we can interact with when we go to a place gives us a more rounded version because, understandably, people want to show you the best of their city, and they want to show you what they know works."
Clare Reddington: "A Playable City project creates internal linkages between city councils – like, it's really highly likely that the parks people never talk to the traffic people, never talk to the infrastructure people. And, actually, one of the big impacts have been those new connections that are made."
Mathilde Marengo: "it also needs to be able to translate the things that we as architects, as urban planners or in other disciplines, as infrastructural engineers or whatever, know or understand – we need to be able to translate that to people who don't necessarily have the same background as we do, and that can be also cultural content and other things like that."
Chad Toprak: **"**And also a city that really understands and supports its local artists is also super important."

Recommendation 5

Complete a study of Melbourne through the lens of the Playable City

This report recommends that government bodies, non-for-profit and industry organisations and the university sector support a study of Melbourne be undertaken in collaboration with the Watershed Pervasive Media Studio through the lens of the Playable City. This would begin in the City of Melbourne but should extend to neighbouring municipalities within inner Melbourne and also extend to outer suburbs to respond to a range of different urban environments. Ideally, the study would extend further to connected cities, such as Geelong and Bendigo for example, in order to explore a range of opportunities and situations for urban play.

Miguel Sicart: "So playable cities, in my opinion, should be those cities that identify those behaviours and know how to leverage digital technology to empower those behaviours and particularly to make them inclusive rather than exclusive… That's the ideal of a playable city: one in which technology is deployed for inclusiveness through play."
José-Luis de Vicente: "The playable should be the non-predictable, non-optimised, non-linear kind of serendipity-driven experience of the city, and the smart is the effective, efficient, optimised version of the city, so let's pump up the serendipity and let's try to focus less on the predictable to capture a little bit of that situationist kind of, like, possibility and space of the city."
Marco Ingrassia: "I think that inside the concept of playable city there is also the possibility to change the paradigm that we are working with, not only working in the city as a framework of economical relation per se."
Holly Gramazio: "Framing it as playable cities in particular as a way of thinking about ways that you can affect and transform people's experience of a space and their use of a city and their feelings about that city in a way that is active, I guess, and distinct from making things more open or making things easier or making things faster."

Recommendation 6

Develop and study the impact of play on a broad range of urban environments across inner, middle and outer suburbs of Melbourne

This report recommends that government bodies, non-for-profit and industry organisations and the commercial sector expand Playable City Melbourne to include a broad range of urban environments across inner, middle and outer suburbs of Melbourne to engage a diverse range of communities and open up broader urban conversations. Urban play can inform urban planning and development presenting novel concepts and solutions that respond to affordances and opportunities in urban design. As Melbourne rapidly becomes Australia's largest city, the creative approach of playable cities offers an innovative methodology to start conversations around mobility, sustainability, affordable housing, public health and managing urban growth.

Mathilde Marengo: "The biggest impacts are this critical thinking and this understanding that you can actually engage in this process, you know. You don't have to be the Mayor of Barcelona. You don't have to have a role in the government of Barcelona to be able to actively take part in your space."
Hilary O'Shaugnessy: "So we really try to spread it across the city in different areas, so it's not just in the nice bit, the tourist bit, the well-attended bit. We really try and reach people and we do try and think about how we design for lots of different types of people."
Ryan Reynolds: "I would say the impact any single one of our projects has on a particular physical space or area or neighbourhood is actually pretty minimal, and that we see more change [indistinct] kind of cumulative impact of a hundred and some projects now that we've delivered over eight years or so. And so I think the change that we've seen really is in the identity of this place and the sense of possibility in Christchurch."

Recommendation 7

Establish play as central to urban life for people living in cities and develop an approach to the city as a platform for play in relation to people-centred smart cities strategies and policies, and emerging location-based game technologies

This report recommends that government bodies, non-for-profit and industry organisations, the commercial and university sectors work together to focus on an identified gap in the playable cities conversation and respond to the emergence of 'people-centred' smart cities. In response to the emergence of Industry 4.0 technologies such as augmented reality, virtual reality, quantified self and artificial intelligence, playable cities methodologies are uniquely positioned to explore the convergence of these in the city as a platform for play. In this approach, the smartphone is positioned as an interface to the city but not central to the experience – play is situated simultaneously across the individual context of the smartphone screen and the public context of the city itself. Play is central to daily life and situates citizens in an ongoing conversation with the city. The city as a platform for play requires collaborative research and development working across academia, startups and small business, creatives, industry, game developers, cultural institutions and local government.

Laura Kriefman: "Playing in a city is just a quite different type of relationship to it and almost any other type of experience."
Mathias Poulson: "If there's no spaces to play, if you expect that adults are not allowed to play, all kinds of rules and regulations, then we really reduce the scope of opportunities for living a good, rich, diverse life."
Katie Day: "I kind of see these environments as opportunities for storytelling and play."
Miguel Sicart: "The fact that play is a human practice and a way of being in the world, that it's already present – any time we have – any arrangement, any collective arrangement, we're going to have forms of play, whether it is people hanging out at a park and coming up with a particular game, to kids playing in a public space, to skateboarders skating around to traceurs doing parkour around the city or whatever practice. There's always going to be playable appropriations of cities."
Matt Adams: "I think the really sinister thing around all of that is things that pretend to be public space but aren't, of course, and so that's the fascinating thing, is you wander through some new, beautiful pedestrianised area and then you become aware that if you so much as bring a guitar case, a security guard will appear and tell you to keep moving."
Seth Giddings: "It's that kind of thinking across the virtual and the actual, the way in which the physical infrastructure already promotes particular kinds of play."

5.2 Benefits of playable cities

Making Melbourne playable benefits visitors, residents and workers. Visitors may experience and understand the city in new ways through play. Workers who play will be more engaged with their environment, and with others in the play community. More long-term benefits may emerge through tweaking the design of the city via what is learned through game design that engages with city infrastructure. Residents who become playful citizens will be become more connected with their city and inform smart city design via feedback generated by playing city games.

Visitors will experience the most immediate and obvious benefit from Melbourne as a playable city. City games often orientate visitors and introduce visitors to new locations or experiences, whether they are travelling from overseas, interstate or simply from outside the CBD. Public play connects people and increases the chance of meeting a Melbourne local.

Workers are likely to benefit from enhancements to infrastructure informed by data collected during play. They may also engage in play themselves or be spectators to events and happenings that take place in Melbourne as playable city. Urban environments can be alienating and uninviting; the increased sense of community and

connection that comes with playable cities also comes with physical and mental health benefits. Workers directly engaged in the project also benefit from the experience of collaborating on a public game design project that provides them with a new role – that of the 'playful citizen', a creative approach to the city that is likely to benefit them in other aspects of life.

Residents are also likely to experience an enhanced quality of life through the role of 'playful citizen'. They could also use play as a strategy for problem solving in their local community. Residents will benefit in enhancements to infrastructure driven by making Melbourne playable and by being part of a play community. This approach to play drives both planned and spontaneous placemaking that inspires residents to make or host their own games in public space.

The benefits of this fellowship extend beyond the research outcomes and game design that will be a result of the project. Making Melbourne playable will result in a cultural shift that opens up new possibilities for the city and may inform innovations in smart city infrastructure that also make the city more liveable.

5.3 Playable City Melbourne in relation to Future Melbourne 2026

Playable cities bring people back into the civic conversation through playful strategies like public art, participatory design and urban play. A new conversation around Melbourne as a playable city is beginning to take shape - and as Melbourne grows, it is a conversation that needs many voices and strategies.

Following is an analysis of Playable City Melbourne in relation to the goals and priorities of Future Melbourne 2026 shows connections across many objectives and initiatives, with particular focus on Melbourne as a creative and deliberative city, as follows:

Goal 1: A city that cares for its environment.

Priority 1.6: Capture the sustainability benefits of urban density.

- Civic conversations led by playable cities may explore the challenges and benefits of urban density

Goal 2: A city for people.

Playable cities methodologies adopt human-centred design strategies in connecting people and place.

Priority 2.1: A great place to be.

- Playable cities engage people by situating new experiences and ways of being in urban environments

Priority 2.3: Designed for and by people.

- Co-creation approaches are at the heart of playable cities methodologies

Priority 2.5: Quality public spaces.

- Introducing play into public spaces may enhance social wellbeing and quality of life

Goal 3: A creative city.

Creative connections between art, design, technology and cities is central to the playable city.

Priority 3.2: Value the creative community.

- Supporting artist gamemakers and creative producers working with playable cities makes their practices more visible and sustainable

Priority 3.3: Celebrate creative diversity.

- Playable cities connect and create dialogue across many different disciplines and fields

Goal 4: A prosperous city.

Melbourne as a playable city reflects its identity as a tourism destination in which exploration and discover of urban environments is central to visitors' experiences.

Priority 4.4: A great place to visit.

- Encountering playable cities experiences enhance visitors experience and understanding of the city

Goal 5: A knowledge city.

Supporting the development and design of playable cities in the city will contribute to the creative economy and make tangible new ways of understanding and knowing cities

Priority 5.4: Support lifelong learning.

- Conversations centred around playable cities engage citizens in understanding and learning about their city in new ways

Goal 6: A connected city.

Playable cities connect people in unexpected, novel and spontaneous ways.

Priority 6.1: A great walking city.

- Making the city playable enhances connection to place and increases the quality of street life

Goal 7: A deliberative city.

Playable cities invite citizens into conversations and co-creation situated in their city

Priority 7.1: Lead in participatory democracy.

- Civic conversations are led by participation and engagement.

Priority 7.3: A collaborative city.

- Playable cities situate creative collaboration and engagement between diverse stakeholders

Priority 7.4: Enable citizen engagement with new technologies.

- Encounters with creative technologies in urban environments are central to playable cities

Priority 7.5: Open up government data.

- Playable city initiatives can make use of open data to engage citizens more playfully with its potential

Goal 8: A city managing change.

Conversations led by playable cities may deal with disruption and change.

Priority 8.4: Lead urban technology innovation.

- Creative technologies are developed using the city as a laboratory in the playable city

Priority 8.5: Use data to make a better city.

- Playable cities may offer novel perspectives on data or immersive, situated approaches to data visualisation

Priority 8.6: Support people to transition to new technology.

- Encounters with new technology through playable cities may make them more approachable and relatable

Goal 9: A city with an Aboriginal focus.

Playable City Melbourne explores indigenous ways of being and knowing place.

Priority 9.1: Acknowledge our Aboriginal identity.

- Encounters with playable cities will acknowledge and be in dialogue with indigenous relationships to place

Priority 9.2: Educated about our Aboriginal culture.

- Indigenous ways of knowing and being for making connection between people and place in urban environments are part of the playable city conversation

5.4 Next steps

The initial October 2018 study shows potential and has established a relationship with the Watershed Playable City project and interest from stakeholders such as ACMI and State Library Victoria, with further interest established via Innocent's playable cities pilot project funded by Creative Victoria. Critical to the early stages of the project is the development of a specific 'Melbourne approach' that responds to the opportunities and needs of the city, and that starts the right conversations and dialogue. Through a strategic mix of small-scale prototyping and capacity building for creative producers experienced with playable cities methodologies the right people, places and conversations may be identified for long-term development. A similar approach has been adopted in Tokyo, where the Watershed Playable City project has been working over the past two years in collaboration with local stakeholders to develop a public program for launch in connection with the 2020 Olympic Games.

Playable City Melbourne is a project of scale that will need the expertise and support of many stakeholders. Partnership with a large city-based university and cultural institutions that may support development and capacity building is essential, as is industry support and partnership with local government. A creative practice research methodology is critical, both for interdisciplinary exchange and being able to establish dialogue within urban environments between different stakeholders. Public-facing programs are important for testing ideas and introducing a broader language of play to urban spaces, these may range from small prototypes and test sites to a large scale exemplary public art commission. Local government has the opportunity to lead in this domain by making recognising playable cities in their policy development and public programs. Given this broad-ranging support, Playable City Melbourne has the potential to become part of the cultural landscape and leave a legacy in the city making regular appearances in Melbourne's festival and events calendar.

5.5 Further information

www: http://troyinnocent.net/playablecities/

www: https://www.playablecity.com/cities/melbourne/

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Appendices

Keywords

Playable cities, smart cities, public art, urban planning, serious games, game design, game development, creative arts, creative technology, digital design, public programming, city design, city communities, urban renewal, Melbourne

Abbreviations

APS	Active Public Space
AR	Augmented Reality
GPS	Global Positioning System
IAAC	Institute for Advanced Architecture of Catalonia
IoT	Internet of Things

Definitions

Augmented Reality

An interactive experience of a physical or material environment where objects in that environment are "augmented" by computer-generated perceptual information, sometimes across multiple sensory modalities, including auditory, visual, haptic, and other senses.

Creative technology

The practice of using machinery or digital tools in order to form or present artistic modes of expression. The act of making creative technologies may include computer programming, electrical engineering, game development and/or experiential digital and electronic design.

Knowledge economy

A community in which new information is continually acquired, created, disseminated and applied in order to enhance financial, cultural and civil development.

Mixed Realities

Sometimes referred to as hybrid reality, it is the merging of physical and virtual worlds to produce new environments where physical and digital objects interact and co-exist in real time.

Placemaking

A multi-layered approach to the design, planning, and management of public spaces. It draws upon on resources of the local community, and their inspiration and potential. The primary goal is typically the creation of public spaces that promote people's health, happiness, and wellbeing.

Playable Cities

Cities that use creative technologies to support participation by citizens, improve placemaking, create engagement, and enhance connections between people and place for those living and working in the city.

Location-based games

Games that that use the player's physical location, usually via GPS coordinates, as part of game mechanics or as a base for the generation of the game level. The game environment may draw upon location-specific information such as weather, maps, or location-based services.

Open Data

Access to data allowing it to be freely available to everyone to use and republish as they wish, without restrictions from copyright, patents or other mechanisms of control.

Smart Cities

Cities that use data and technology to support economic development, improve sustainability, create efficiencies, and enhance quality of life factors for people living and working in the city.

Workshop

A meeting at which a group of people engage in intensive discussion and activity on a particular subject or project.

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Fellowship Sponsors

The City of Melbourne: Melbourne Knowledge Week

Knowledge Melbourne is an initiative designed to showcase, enhance and connect the knowledge and innovation capabilities of Melbourne. Dr Innocent particularly thanks Sebastian Prowse, Benjamin Kolaitis and Renee Beale for their interest and support throughout the Fellowship and Councillor Jackie Watts for her support.

Organisations and individuals that contributed to the project

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Clare Reddington, Creative director / CEO Watershed, Founder of the Pervasive Media Studio

Victoria Tillotson, Creative Producer, Watershed Pervasive Media Studio, Coordinator of Artist-in-Residence program

David Haylock, Creative Technologist, Watershed, Pervasive Media Studio

Dale Leorke Postdoctoral Researcher, Centre of Excellence in Game Culture Studies, Tampere University

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Scott Mundell, Unity development, Wayfinder Live

Andrew Spalato, Unity development, Accelerando

Organisations and Individuals that may benefit from these Fellowship findings

Government – Federal

Communications and the Arts

Education and Training

Employment

Industry, Innovation and Science

Ministry for the Arts

Government – State

Arts and Culture

Creative Industries

Environment, Land, Water and Planning

Education and Training

Employment and Workplace

Small Business, Innovation and Trade

Training and Skills

City of Melbourne

Arts and Culture

Knowledge City

Melbourne Library Service

Transport, Planning and Local Infrastructure

Industries

Arts and Culture

Creative Technology

Digital Design

Education – Primary, Secondary, Tertiary

Smart Cities

Software engineering

STEAM-related Industries

Report design by Ann Roberts

All images by Troy Innocent

Details of Dr Innocent's Fellowship activities

Countries Visited

1. Spain 11-18 November 2017.
2. United Kingdom 3-24 March 2018.
3. Spain 2-16 June 2018.
4. Denmark 17-18 June 2018.
5. The Netherlands 20-24 June 2018.

Major Public and Industry Presentations

1. Conference presentation, DiGRA 2017, 2-6 July 2017, Swinburne University of Technology, Melbourne, AUSTRALIA
2. Major exhibition, Global Publics: ART TAIPEI, 20-23 October 2017, Taipei, TAIWAN
3. Major public game, *Wayfinder Live*, Melbourne International Games Week, 22-29 October 2017, Melbourne, AUSTRALIA
4. Conference presentation, Responsive Cities Symposium – Active Public Space, 13-14 November, Barcelona, SPAIN
5. Urban play workshop, Playful Resistance, 23-24 November 2017, Melbourne, AUSTRALIA
6. Public talk, Raising the Bar, 29 November 2017, Melbourne, AUSTRALIA
7. Keynote presentation, Createworld, 30 November 2017, Brisbane, AUSTRALIA
8. Artist talk and workshop, University of Hertfordshire, 7 March 2018, Hertfordshire, UK
9. Artist talk, Watershed Pervasive Media Studio, 14 March 2018, Bristol, UK
10. Major public game, *Wayfinder Live*, Watershed Pervasive Media Studio, 14 & 23 March 2018, Bristol, UK
11. Panel convenor and speaker, Freeplay Conference, 26-27 April 2018, Melbourne, AUSTRALIA
12. Major exhibition, *RE:CODE*, Melbourne Knowledge Week, 7-13 May 2018, Melbourne, AUSTRALIA
13. Master class, IAAC, 7 June 2018, Barcelona, SPAIN
14. Major public game, *Wayfinder Live*, IAAC, 9-15 June 2018, Barcelona, SPAIN
15. Panel, Preserving the Near Future Symposium, ACMI, 28 June 2018, Melbourne, AUSTRALIA
16. Presentation, LGPro Arts and Culture – City of Casey, 20 July 2018, Melbourne, AUSTRALIA
17. Presentation, Smart Cities Research Lab, Swinburne University of Technology, 4 October 2018, Melbourne, AUSTRALIA

18. OpenLAB presentation, Media Lab Melbourne, ACMI X, 30 October 2018, Melbourne, AUSTRALIA
19. Presentation, Society 4.0 Forum, Social Innovation Research Institute, Swinburne University of Technology, 8-9 November 2018, Melbourne, AUSTRALIA
20. Conference presentation, MAB'18 – Media Architecture Biennale, Chinese Academy of Fine Arts, 13-13-16 November 2018, Beijing, CHINA
21. Conference presentation, #MINA2018: Towards a Theory & Practice of Smart Storytelling, Swinburne University of Technology, 15 November 2018, Melbourne, AUSTRALIA
22. Conference presentation, CODE: A Media Conference of Platforms, Devices and Screens, Swinburne University of Technology, 19-20 November 2018, Melbourne, AUSTRALIA
23. Conference presentation, 3rd Play, Creativity and Culture Symposium - Play For a Vital and Sustainable City, 22-23 November 2018, Canberra, AUSTRALIA

Public Workshops

1. Urban codemaking workshop, Bayside Gallery, 7 April 2018, Melbourne, AUSTRALIA
2. Citizens of Play, 11 April & 12 May 2018, Melbourne, AUSTRALIA
3. Wayfinding, 14 April & 9 May 2018, Melbourne, AUSTRALIA
4. Urban games, City Library, 2 & 19 May 2018, Melbourne, AUSTRALIA

Artist-in-Residence Programs

1. Watershed Pervasive Media Studio, Brighton, United Kingdom 3-24 March 2018
2. Institute for Advanced Architecture of Catalonia, Barcelona, Spain 2-16 June 2018

Interviews

Matt Adams	Brighton, UK Artist / Cofounder of Blast Theory
Ben Barker	London, UK Designer / Founder of PAN Studio
Sarah Brin	Copenhagen, Denmark Curator and writer / Design Research Manager GIFT/ ITU
Zuraida Buter	's-Hertogenbosch, Netherlands Playful culture curator / cofounder of Playful Arts Festival
Guillem Camprodon	Barcelona, Spain Interaction designer / IAAC Smart Citizen Project Manager

Albert Cañigueral	Barcelona, Spain Multimedia engineer / Founder of ConsumoColaborativo
Giovanna Carnevali	Barcelona, Spain Architect / IAAC Coordinator of International Programmes
Ruth Catlow	London, UK Artist-theorist and curator / Director of Furtherfield gallery
Harmeet Chagger-Khan	Birmingham, UK Creative producer / BOM Fellow
Matt Davenport	Bristol, UK Open data project manager at Bristol City Council
Katie Day	Birmingham, UK Artistic director of The Other Way Works
Tomás Díez	Barcelona, Spain Urbanist / IAAC Fab Lab Barcelona Director
Dr Teresa Dillon	Bristol, UK Artist and researcher / Professor of City Futures at UWE Bristol
Simon Evans	Bristol, UK Game designer and artist / Founder of 2.8 Hours
Luis Falcón Martínez de Marañón	Barcelona, Spain Architect and urban planner / CEO inAtlas
Gabrielle Ferri	Amsterdam, Netherlands Design researcher / Amsterdam University of Applied Sciences
Dr Seth Giddings	Bristol, UK Media and cultural theorist / Digital Culture and Design
Holly Gramazio	London, UK Artist gamemaker / Director of Now Play This
David Haylock	Bristol, UK Creative technologist, Watershed Pervasive Media Studio
Stephen Hilton	Bristol, UK Director of Bristol Futures
Dr Cathy Hope	Canberra, Australia Founder / Coordinator of Play Activation Network ACT
Marco Ingrassia	Barcelona, Spain Architect / IAAC OTF Coordinator
Alison John	Cardiff, UK Creative producer / Cofounder of yello brick
Simon Johnson	Bristol, UK Game Designer / Director of Free Ice Cream

Tim Kindberg	Bristol, UK Founder and creator of social video platforms Vorb and Nth Screen
Kev Kirkland	Bristol, UK Creative technologist / Founder of Data Unity
Laura Kriefman	Bristol, UK Director, producer and artist of Hellion Trace
Dr Michiel de Lange	Utrecht, Netherlands Theorist / Cofounder of The Mobile City / Utrecht University
Dr Mathilde Marengo	Barcelona, Spain Architect / IAAC Head of Studies
Pablo Martinez	Barcelona, Spain Architect / Cofounder 300.000 Km/s
Hilary O'Shaughnessy	Bristol, UK Artist / Lead producer for Playable City
Rosie Poebright	Bristol, UK Experience architect / Creative director of Splash & Ripple
Mathias Poulsen	Aarhus, Denmark Director and founder of Counterplay
Nikki Pugh	Birmingham, UK Artist / BOM Fellow
Clare Reddington	Bristol, UK Creative director / CEO Watershed / Founder Pervasive Media Studio
Ryan Reynolds	Christchurch, New Zealand Cultural Activist / Cofounder Gap Filler
Mar Santamaria	Barcelona, Spain Urban planner / Cofounder 300.000 Km/s
Miguel Sicart	Copenhagen, Denmark Play scholar / Center for Computer Game Research at ITU
Duncan Speakman	Bristol, UK Composer and sound artist / director of Circumstance
Tassos Stevens	London, UK Artistic director of Coney
Julian Sykes	Cardiff, UK Creative director / Cofounder of yello brick
Chad Toprak	Melbourne, Australia Independent game design and curator / director of Freeplay
José Luis de Vicente	Barcelona, Spain Curator, writer and researcher

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