WHERE MEMORIES SLEEP

an exploration into human-centred design and visual storytelling to persuade and educate

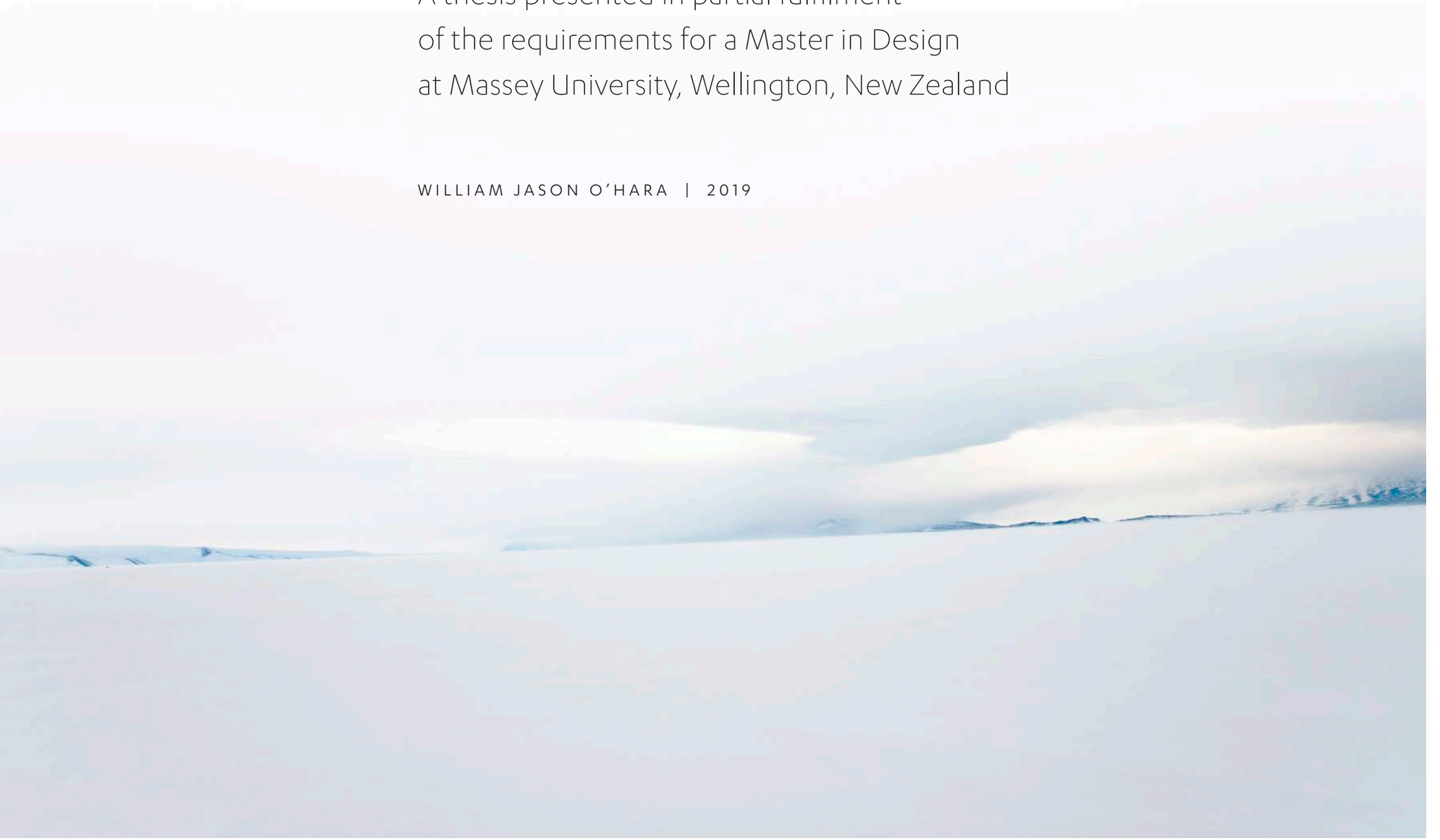
JASON O'HARA

2019

Where Memories Sleep

A thesis presented in partial fulfilment
of the requirements for a Master in Design
at Massey University, Wellington, New Zealand

WILLIAM JASON O'HARA | 2019



Project Abstract

Where Memories Sleep is an immersive cinedance installation designed to introduce new audiences to Antarctica and the science undertaken at Scott Base. The research explores using human-centred design methodologies to develop the communication strategy and visual narrative that inform the project's creative direction.

Tailored to appeal to millennials while remaining inclusive of all age groups, it primarily focuses on engaging and informing audiences about the existence and relevance of the science rather than expecting action toward Antarctica or climate change.

Sitting at the confluence of three narrative disciplines; documentary, persuasion, and entertainment, the research project investigates the interaction and integration of these worlds when combined into a single immersive experience.

Central to the project is a two-part narrative structure; a metaphoric imagined 'legend' that functions as a 'Trojan Horse' to engage the audience, and a supporting documentary making implicit the links to real science. The project narrative is inspired by the rich history of Antarctic exploration and draws on traditional and contemporary oral, visual and theatrical storytelling techniques. The storyline follows a familiar 'hero's journey' structure beneath which runs a non-fiction aspect representing the current scientific activity in Antarctica.

Where Memories Sleep is conceived as a long-term initiative and therefore adopts a flexible, modular approach to the narrative and scenographic elements. It is proposed to work across a variety of installation locations and media opportunities, such as a single-channel online video, to full live dance performance/installation.

RESEARCH QUESTION:

How might human-centred experience design and visual storytelling be used to create an immersive installation that introduces new audiences to Antarctic science?

The dancers and crew from the developmental film shoot in the garage.
L-R Rachel Nesser, Jared Hemopo, Toa Paranihi, Phoebe Smith, Connor Masseurs, Ruben O'Hara,
Emilia Gribbin, Jason O'Hara, Renée McCarthy and Grace Potter (absent in photo Jasmine Grace).
The wider cast and crew includes Aroha Watene, Zaniah Bettany and Lauren O'Hara.

Acknowledgements

Massey University, School of Design

Antarctica New Zealand
esp. Jeanine Foster and Megan Nicholl

The team with the best job in the world at Scott Base

The New Zealand and US airforces

MDes supervisors: Wayne Barrar and Stu Foster

My creative partners in the broader project:

Music: Warren Maxwell

Dancers:
Si: Aroha Watene
Kaia: Zaniah Bettany
Penguins: Zaniah Bettany, Jared Hemopo, Connor Masseurs, Toa Paranihi.
Hira: Jared Hemopo

Dance casting and advisor: Phoebe Smith

Makeup: Renée McCarthy

Production crew:
Jasmine Grace, Emilia Gribbin, Rachel Nesser, Lauren O'Hara, Ruben O'Hara, Grace Potter.

Scientific advisers and support:
Professor Ian Hawes and his dive team, Waikato University
Dr James Renwick, Victoria University of Wellington
Peter Marriott, NIWA
Dr Hinrich Schaefer, NIWA

Venue and full-dome technical advice:
Rachel Ingram and Haritina Mogosanu, Space Place

Additional advice and assistance:
Anthony Powell, Antarctic photographer
Bruce Foster, Photography
Brett Linton, Linton sails
Gabby O'Connor, Artist
Brent Davenport, Durgesh Patel, Luiz Dos Santos, Adam Dransfield and Virginia Ghiglione, Massey University
Jonny Harrison, Antarctica New Zealand

My students for their inspiration

And most of all my wife Jane and children Ruben, Lauren and Morgan for their continual support and putting up with my experiments, absences and general mess for all these years.

Scott Base Hagglund vehicles on the sea ice in front of the Barne Glacier in Antarctica.
This glacier was a key inspiration for the Where Memories Sleep set design.

Table of Contents

All photographs are by the author unless otherwise indicated (see page 112)

A Scott Base vehicle takes us back to base after camping on the sea ice with a dive team.

Introduction

When a story of a notable person or event is passed on, most often orally, across generations, it can take on legendary proportions. The details blur, achievements can exaggerate, and characters can take on mythical proportions.

In an Antarctic context the exploits of the explorers of the "heroic age" take on almost legendary status. And before them, in the year 650 a Polynesian explorer called Ui-te-Rangiora is said to have sailed far enough south to have seen icebergs and sea ice. Ui-te-Rangiora is recorded as describing "... rocks that grow out of the sea, in the space beyond Rapa; the monstrous sea; the female that dwells in those mountainous waves, whose tresses wave about in the waters and on the surface of the sea; and the frozen sea of Pia, with the deceitful animal of that sea who dives to great depths - a foggy, misty, and dark place not shone on by the sun. Other things are like rock, whose summits pierce the Skys, they are completely bare and without vegetation on them" (Smith, 1921. P. 175)

What if we were to leap ahead in time and look back on the work of modern day scientists working in Antarctica to investigate phenomena of a potentially global scale and impact? What legendary proportions might that take on if left to oral tradition (or even the fact-bending distortions of the internet with its crowd-sourced content and fake news?)

And what if we could use this reinterpreted reality to introduce new audiences to these non-fiction inspirations?

That is the premise of the *Where Memories Sleep* project.

I believe that much of the communications produced around current science exploration in Antarctica fails to engage with new audiences for a number of reasons:

- people who are not already actively interested in this topic are inherently not predisposed to seek out scientific or Antarctica content.
- their regular media activity therefore fails to come across the plethora of high-quality science communication that already exists.
- when they do happen to encounter the existing communications, it is not seen as relevant to their personal interests or having impact on their lives.

I suggest that the issue is not the quantity or quality of the majority of existing Antarctic science communication. Instead, it is the framing, positioning of the media and specific relevance to the audience.

This MDes research project investigated the application of human-centred design thinking to develop a persuasive communication strategy and creative direction designed to engage new audiences in Antarctic science. The resulting thinking then informed the development of a metaphoric narrative and production design concepts culminating in an immersive cinedance installation titled *Where Memories Sleep*.

The objective is not to completely change their fundamental interests or media consumption behaviours to include this new topic – rather, I want to expand the horizons of new audiences so that they have a straightforward understanding of how the science is relevant to them. This will increase their uptake of any future encounters with Antarctica communications.

RESEARCH QUESTION:

How might human-centred experience design and visual storytelling be used to create an immersive installation that introduces new audiences to Antarctic science?

Regular visitors to science teams working on the sea ice, Emperor Penguins rock on up like a gang of inquisitive teenagers looking for trouble. Encounters like this formed a significant inspiration for characters and costumes in the project.

THE SCOPE OF THIS MDES SUBMISSION

This project was designed as a long-term, multi-output project with the core narrative being reinterpreted to suit different locations and media.

The project's scale, complexity and collaborative nature exceed the scope ordinarily required for an MDes. Therefore, the aspects of the project being put forward for assessment are restricted to the overall conceptual design, scenographic and projected elements.

I am the project leader and overall creative director, scenographer and moving-image designer.

The music, makeup, choreography and dance components of the project are developed in conjunction with collaborators and accordingly are excluded from examination.

Unless specified, all other aspects of the project including all primary imagery are my work. This includes all photography and video shot in studio and on location in Antarctica.

The artefacts presented for examination are a first working prototype towards the final installation which is scheduled to be shown to the public at Wellington's Space Place planetarium on 20 March 2019.

The ideal examination scenario would have been to present the project in this venue, but that is not possible. Therefore the work will be presented as best it can without a full-dome venue which will inevitably result in some compromise.

My project collaborator, musician Warren Maxwell, and I (reflected in his goggles along with field trainer Jeff Dunne) at our field camp, Cape Evans, Antarctica. The ever-present outline of Mount Erebus, a key inspiration for the project's Kuia character, can be seen behind Jeff. This project is a significant output from our 2016 residency at Scott Base courtesy of Antarctica New Zealand.

BACKGROUND

In January 2016 I successfully applied to go to Antarctica as part of the Antarctica New Zealand, Community Engagement Programme. In the 2018 season I was invited to return as part of an international, multi-university dive team investigating the effects of climate change on the Antarctic coastal seabed environment.

For both journeys, my commitment to the hosting organisations (Antarctica New Zealand and the University of Waikato) was to use my photographic, video and experience design expertise to explore novel ways to introduce new audiences to the science in Antarctica. Both organisations emphasised targeting young adults as the primary audience. This mandate then formed the core driver for the *"Where Memories Sleep"* project and consequently, this MDes submission.

It's not about the work itself ... it's about the conversations, thoughts and actions the work provokes.

A MANTRA FOR THE PROJECT

METHODOLOGY

The project employed the principles of human-centred design to define the creative strategy and narrative structure.

The research was divided into two key developmental phases

- Problem analysis and development of the design strategy (with research into the subject area and audience and the persuasive techniques required to bring the two together)

and

- Design development (with research focused on cultural influences, medium, techniques, and materials)

This approach essentially follows the British Design Councils "double diamond" methodology stages of discover, define, develop and deliver (Design Council, 2009)

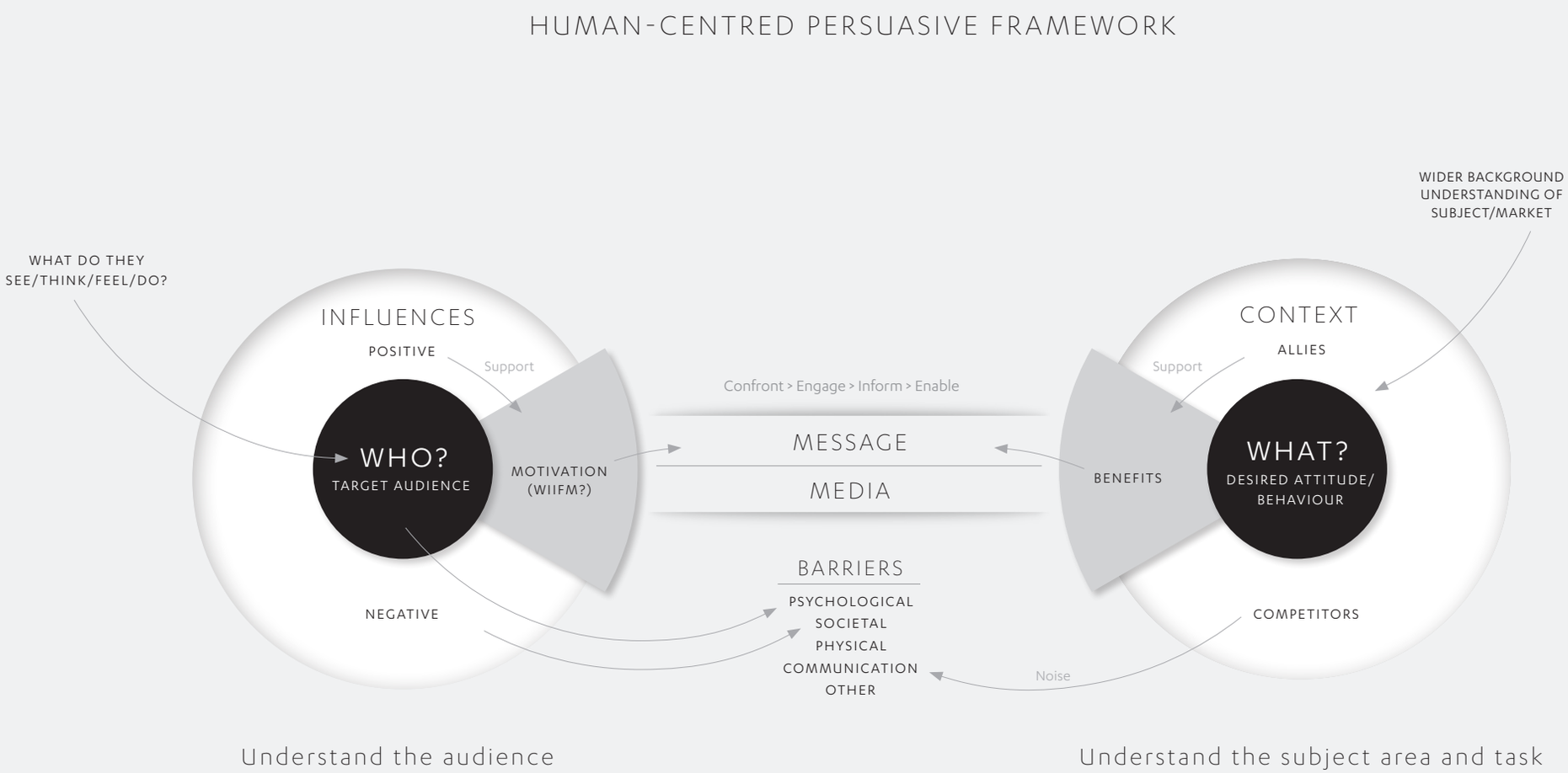


Figure 1: *The "human-centric persuasive framework" used during the analytical stages of the project to develop a communications strategy. As part of this MDes, I have researched, refined and formalised this project methodology.*

This figure shows the structure of the framework. Figure 4 on page 22 shows it applied to this project.

The project started with a phase of secondary research into the audience and current context of Antarctic science communication and documentary media.

Key insights were gained from Antarctica New Zealand-commissioned research (Opinions Market Research, 2016) into the target audience. It revealed that many of those surveyed failed to see any relevance between Antarctica, science and their day-to-day lives.

The various aspects of the problem were also analysed using a "human-centric persuasive framework" (see figure 1). This framework represents a methodology I have informally used for many years in the design industry. As part of this MDes, I have researched, refined and formalised this project methodology. Although the framework encompasses elements from many existing human-centred design methodologies, it is unique in its emphasis on contextualising both the receiver and sender in addressing a persuasive message challenge. Its primary strength is that it gives designers a tool to visualise the overall context of the interrelated societal, psychological and environmental aspects of a persuasive problem.

Through the development and delivery stages of the project, a non-linear, hands-on, rapid prototyping ethos was used with many of the narrative components (scenography, projections, costumes, music, choreography etc.) being developed in parallel, each element's latest iteration often affecting the others and involving regular reworking and evolution.

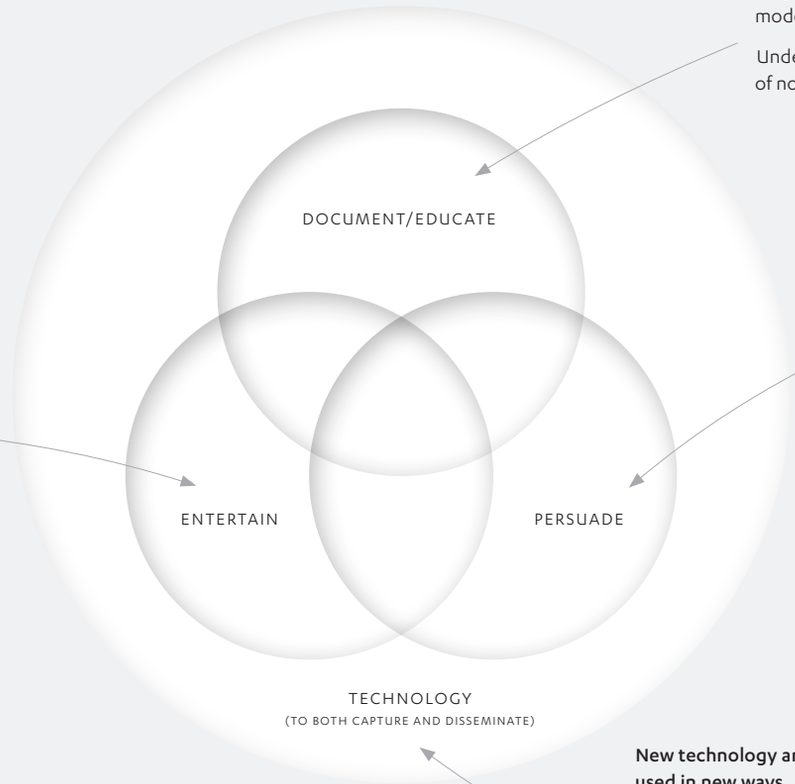
Design researcher Nigel Cross (2011. pp. 72-75), a strong advocate for "design through doing", highlights that taking a broad system approach rather than a narrow focus is a common aspect in successful design practice. He also noted that it is followed by a distinctive, sometimes very personal, framing of the problem before designing from first principles - all reflective of my approach in this research.

To quote chef David Chang (as cited in Chimero, 2011. Para. 2) my collaborators and I did things "the long, hard, stupid way". But for me, that is the best way to explore creatively and to respect the expertise creative partners bring to the process.

One of the primary benefits of using the "human-centred persuasive framework" is that it clearly illustrates the various components of a project, identifying the aspects of research required to understand the issues and how they interrelate.

Figure 2: *Sitting at the confluence of three narrative disciplines; documentary, persuasion, and entertainment, the research project investigates the interaction and integration of these worlds when combined into a single immersive experience.*

This diagram shows the various areas of research in the project.



How Antarctica and it's science is documented in terms of a non-fiction subject area in both a historical and modern context.

Understanding the narrative conventions of non-fiction film-making.

To a degree, documentary has a long relationship with entertainment. My research regularly explores how to balance education and entertainment.

Understanding the trends in entertainment and it's role within society.

Developing innovative narrative structures to balance education and entertainment.

Collaboration with other performance and visual artists.

Engaging new audiences or stretching people to new ideas involves the art and science of persuasion.

Techniques for persuasive communication and marketing.

People-centred design.

Community-based social marketing.

Social media.

Branding.

New technology and/or old technology used in new ways.

Photography and moving image.

Scenography.

Underwater + action photography.

High speed/resolution digital cameras.

360° cameras.

Full domes.

Working in extreme conditions.

The final creative outputs of this research make a clear distinction between the non-fiction inspiration of the science and its metaphorical interpretation. This approach acknowledges my desire to maintain a high level of authenticity to any photographic or video representations of the Antarctic experience. It also allows for a greater degree of artistic interpretation within the storytelling without clouding the science overall.

Other aspects of my personal ethos within the project included a desire for maximum environmental sustainability and minimal use of purely computer-generated imagery (e.g. the majority of visual effects in the video components started in-camera).

A TROJAN HORSE FOR SCIENCE

The creative solution draws upon the popularity of digital media, installation art and dance within the target audience (Morris Hargreaves Mcintyre, 2012. pp. 10-12; DanceNZ , 2015. p. 1). Marketed to the primary audience as entertainment it completely recontextualises what is essentially a science communication by only gradually revealing the Antarctic messaging until the audience is at the venue.

Central to the project is a two-part narrative structure: a metaphoric imagined 'legend' that functions as a 'Trojan Horse'(Parrish, 2017) to engage the audience: and a supporting documentary making the links to real science, and its relevance to the audience, implicit.

To maximise reach, Where Memories Sleep is conceived as a long-term initiative and therefore adopts a flexible, modular approach to the narrative and scenographic elements. This approach allows it to be reinterpreted across a variety of locations and media opportunities. These could range from a single-channel online video to full live dance performance/installation.

A visual developed as a promotional tool for the full-dome installation Space Place, Wellington. It is composed using photos of the glacier set taken during projection tests and choreography development sessions.

To enable this, the core ‘glacier’ set is formed by light-weight reconfigurable modules constructed using plywood and stretch fabric. By adopting this flexible, modular approach, we aim to bring the story of Antarctic science to as many people as possible, in as many venues as possible.

The first manifestation is as a multi-channel immersive video installation and live performance in the full-dome at Space Place in Wellington. Strategically this is not an ideal venue to engage the target audience (because it has relatively low local thoroughfare and is associated with science) but it provides an affordable start point, proof-of-concept and can be leveraged as a marketing device for future installation opportunities.

Once the project has proven itself in this installation, I hope it will attract sufficient interest and funding to create more ambitious and higher-profile manifestations with additional scope creatively.

Success for this project will be difficult to measure. There is no immediate action required by the audience - it is more a matter of awareness and attitude than action.

In the year 650 Polynesian explorer Ui-Te-Rangiora commanded a fleet of six canoes that sailed far enough south to report seeing icebergs, thereby making him the earliest Antarctic explorer (Smith, 1904. pp. 174-176).

This illustration was commissioned for the program booklet and documentary video.

Illustration by Ruben O'Hara.

DISCOVER AND DEFINE

CONTRIBUTING FACTORS IN PERSUASION

Figure 3:
This diagram was developed early in the research to aid in formalising the "human-centred persuasive framework" (see figure 4 on p. 22).

It spells out some key concepts the framework incorporates.

The blue text notes direct application to this research.

CONSENSUS (*1)
When in doubt we look to the behaviour of others. If we are establishing a new critical standpoint or change our existing standpoint we tend to look to what is the 'norm' of our social group.

CONSISTENCY (*1)
People like to be seen as being consistent with their previous actions or statements. If people make a small public commitment toward a cause/behaviour then they are much more likely to take a bigger commitment to the same cause/behaviour in the future .

COGNISANT DISSIDENCE (*3 pp. 77-100)
There is plenty of research to say that knowledge does not necessarily equate to behaviour. And sometimes our behaviour does not even correspond with our beliefs or attitudes. Classic examples of this are when we *like* doing what we know is wrong or when the majority of our peers behave in that way (plastic shopping bags are an example of clash of the injunctive and descriptive norms where people collectively know they are bad but collectively continue to use them).
Ecophobia (*4) is another manifestation of this.

*GROUP EXPERIENCE (*2 pp 61-71)*
WMS is something you attend as a group. This improves the potential to create discussion and encourage the audience to acknowledge thinking of Antarctica as being relevant and build new visable social norms

RECIPROCITY (*1)
We feel obliged to give back to people who give to us .

*THE VISIBLE NEW NORM (*2 p. 61-71)*
If we give everyone who visits WMS a cool booklet this becomes a gift but more importantly it displays a small 'commitment' to Antarctica in a visible way within a group context thus engineering a descriptive norm).

SELF PERCEPTION THEORY (*2 p. 47)
Give people an opportunity to do something small toward a cause then the act of doing creates an ongoing change in attitude .

BE EXPLICIT (*1)
It is always better to have a clear and explicit message/ call to action. This doesn't mean the sender needs to be blatant or overly forceful - people respond better to being talked with than talked to - the sender needs to be in control enough to make their message explicit.
We can't rely on the legend narrative alone to get the science message across. It must be supported by the facts.

ORDER DOESN'T MATTER (*1)
It doesn't matter at what point in the communication the explicit bit comes.
Putting the "Antarctic science is relevant to you" message before or after the legend makes no difference.

AUTHORITY (*1 and *3 pp. 181-213)
We trust people who are seen as being credible, knowledgeable experts (interestingly this includes people who have been recommended by others, even if we know little of the person making the recommendation or if they stand to gain from it).
It is important to be *seen* as credible.
Benefit of Space Place as the institution hosting the event. Importance of scientists delivering science content and the visible endorsement of the university and Antarctica NZ.

LIKEABILITY (*1 and *3 pp. 181-213)
Receivers are more open to messages from people who are similar to them, compliment them and cooperate with them.
The protagonist is of a similar age and demographic as the target audience. We don't 'talk down' to the audience.

ATTRACTIVENESS (*1 and *3 pp. 181-213)
We tend to favour messages when we find the sender attractive.
In this instance the dancer crew happen to be an attractive bunch.

*1: Cialdini. 2012
*2: McKenzie-Mohr. 2011
*3: O'Keefe. 2002
*4: Sobel. 2008

Stage One: Problem analysis, strategy and narrative development

DISCOVER:

To assist the development of the design and marketing strategy for this project, I adopted a "people-centric persuasive framework" (see figure 4 on p. 22) which visually displays the interrelationship of various components of a persuasion strategy. This is a tool I have been developing organically through many years in the visual-communication design industry. During this research project, I formalised the diagram (Figure 4) and associated process.

At its core, the people-centric persuasive framework has similar elements (sender, receiver, noise etc.) as Shannon and Weaver's 1949 Model of Communication (as cited in Crilly, Good, Matravers & Clarkson. 2008. p. 433), but my framework is specific to persuasive communications and places emphasis on the context in which the subject and receiver reside. As part of this MDes research, I have refined and formalised this model, taking influence and rigour from many sources particularly; the contextual evaluation of Xplane's Empathy canvas (Grey. 2017); McQuail & Winddahi's media analysis (as cited in O'Shaughnessy and Stadler, 2008 p. 20); McKenzie-Mohr's community based social marketing theories (2011); O'Keefe's persuasive approaches especially cognitive dissonance (2002. pp. 77-110) and source factors (2002. pp. 181-213); O'Shaughnessy and Stadler's overall media perspectives (2008); and Cugelman, Thelwall and Dawes's Communication-Based Influence Components Model (2009).

Put simply; this diagram illustrates four crucial aspects of the project that need to be defined to develop empathy and determine:

- what the project is trying to achieve
- who the target audience is and what context they inhabit
- the context of the project's subject matter or product
- the current barriers to successful connection with the audience

Figure 4

PEOPLE-CENTRIC PERSUASIVE FRAMEWORK

As applied to the "Where Memories Sleep" project during the discovery phase (work in progress not conclusive)

Antarctica New Zealand is keen to target young adults because they are one of the most challenging demographics for them to reach unless they are already interested in Antarctica or science. Children can be reached relatively easily, as can their parents, but as young adults move away from the influence of home and into tighter peer groups they can become difficult to reach - partly because the algorithms used to push news on social media can exclude topics outside a user's predefined set of interests.

Educators and employers can be influencers, but their effect tends to be task specific due to their focus on the young person's study or career.

The influence of peers, both directly and via social media is high. In the context of developing a strong social conscience (including concern over climate change), this can be a good thing. However, research indicates few make the link between Antarctica and climate change research.

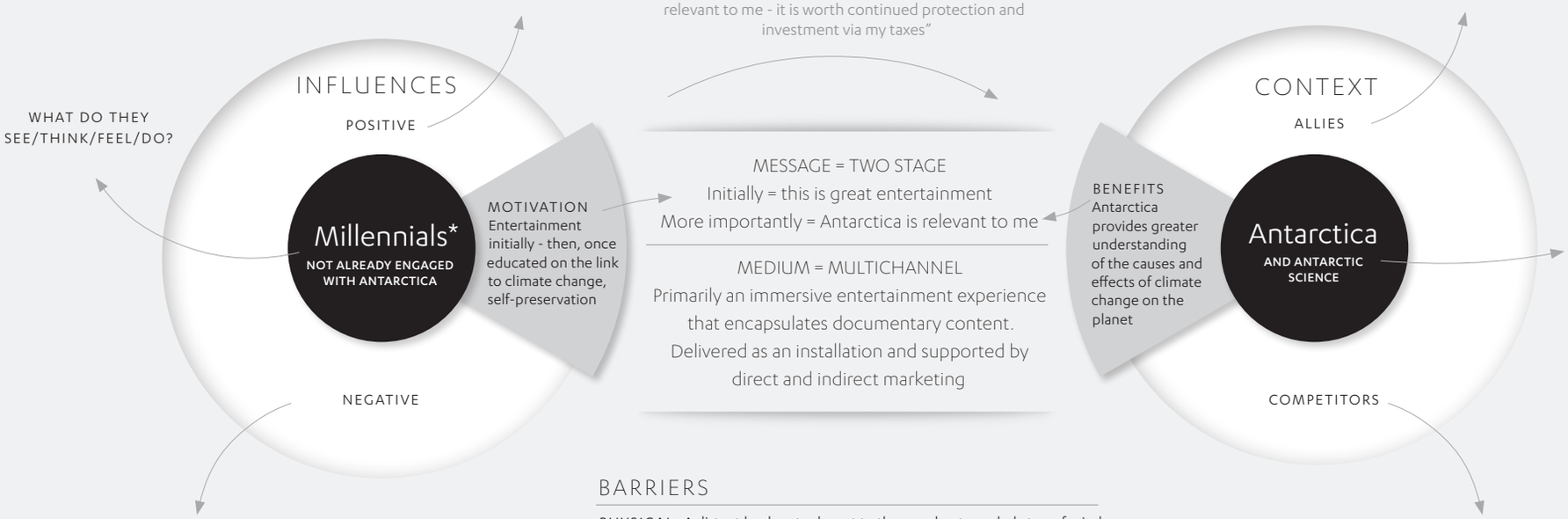
Desired attitudinal transformation
"Antarctica and the science undertaken there is relevant to me - it is worth continued protection and investment via my taxes"

MESSAGING: Antarctica NZ, NIWA, Universities (esp Massey, Waikato and Victoria), AHT, Deep South Challenge,

DISTRIBUTION: Space Place, Otago Museum, Stardome (Ak),

PROMOTION: Media (RNZ, DomPost)

FUNDING: Massey, Thonet?, Air NZ?



Antarctic science communication is dominated by earnest "actuality" videos and publications created by the science community and catering to the actively interested audience.

Mainstream media (notably on the decline with the target audience) tends to fall into the traditional documentary formats of news reporting and TV series like "Blue Planet 2" and National Geographic's "Continent 7"

Antarctica themed entertainment options tend to be limited to the occasional fine arts exhibition or publication. There has been a couple of installations in Auckland (museum projections) and Christchurch (IceFest).

On the subject of Antarctica, the only significant type of "negative influencer" on this audience is a general apathy or ignorance among their peers. There is potential for negative influence from naysayers to climate change but, judging by a lack of any mention mainstream media, this appears to be insignificant in New Zealand currently.

BARRIERS

PHYSICAL: A distant land, not relevant to them and not regularly top of mind.

PSYCHOLOGICAL: The majority of current media portrays Antarctica as a place for scientists and adventurers - the science is often communicated in a dry manner. Ecophobia can be a barrier to climate change issues.

SOCIETAL: Although cognisance of social issues (ie climate change) tends to be important to the broader demographic, this specific group's current lack of interest in the topic of Antarctica indicates that the current social norm of their direct social group is likely also to reflect this lack of interest.

COMMUNICATION: Young adults can be challenging to reach on topics they find uninteresting. They have moved on from the dominant influence of school and home. Not big consumers of traditional media, their online influence can be over-mediated by peer norms and social media algorithms. In the context of entertainment, there are many options and lots of noise competing for attention.

Because of the nature of "science communication" and it primarily being driven by universities etc. there seems to be collegial support of 'the cause' and they're not an aggressive competition.

Also, because the audience is not actively seeking Antarctica/ scientific material any "noise" in the traditional sci-comm marketplace is effectively irrelevant until after an attitudinal change achieved.

However, by placing this project in the context of "entertainment," there is a considerable amount of competition for the audience's attention and time. This demands that the project can stand on its own legs as a high-quality and unique entertainment option.

In its favour, the unique approach, public good aspirations and high profile of Warren should make it an appealing subject for mainstream media. Hopefully with will help counter the most significant competitor - a noisy communication environment.

*NB: This is the primary audience. The project should not exclude a wider audience

Based on the project fundamentals established through the process of evaluating the communication challenge, a solution (both message and delivery media) can be determined.

One of the primary benefits of using this framework is that it clearly illustrates the various components of a project, identifying the aspects of research required to understand the issues and how they interrelate.

Although this structure can be used as a rough step-by-step way of accessing a problem within a given context (goal > receiver > subject > problem > solution), each step can uncover issues requiring a revisit of previous steps to apply new learning or to investigate a new hypothesis.

AUDIENCE

According to Antarctica New Zealand's then Communications Manager, Jeanine Foster (personal communication, August 2016), there is a well-established communications network within the Antarctic science community in New Zealand, to reach people with an active interest in science and environmental issues. Foster also said that Antarctica New Zealand is making progress toward school age children. Their biggest challenge is reaching young adults or "millennials" (18-24yrs) who are not already interested in science or the Antarctic environment. Therefore this became the project's primary audience.

This disconnected relationship with Antarctica is not helped by the communications zeitgeist this demographic exists within. Research (Smith & Anderson. 2018) reinforces the stereotype that millennials rely heavily on the internet for news, entertainment and social connection. In such an interest-filtered, information-overloaded context, cut-through is difficult.

Antarctica New Zealand commissioned focus group research (Opinions Market Research. 2016) to understand public (particularly 18-24 year-olds) perceptions of their organisation, Antarctica, and its science.

The researchers discovered that the participant's (as individuals and as a country) relationship with Antarctica was initially not well understood but that, once prompted, many participants found aspects of the science interesting and regularly expressed interest in the logistics and adventure of actually doing science in the field.

I found two of the key recommendations of this research (Opinions Market Research. 2016. p. 5) were particularly pertinent to my project;

• Communicate in peoples' worlds; use their media in a format they use, use their language and make the topics relevant and engaging by using constructs to which they relate.

• Communicate the relevance of Antarctica to New Zealand in terms of the Antarctic Treaty, climate change and the environment and link this to personal actions.

Although not specifically highlighted in the research, there was a definite lack of personal responsibility or action demonstrated in the respondent's feedback. The expectation was that the government or large organisations would/should look after things. There were many comments suggesting that if messages, videos etc were available, then they would watch them or take action if told what to do. It is exceptionally easy to find public-friendly science information with a quick Google search (search terms "Antarctica" and "science" generated links to Antarctica New Zealand, British Antarctic Research, discoveringantarctica.org and coolantarctica.com when retrieved, February 10, 2018) .

This indicates to me that the message needs to proactively seek the receiver.

INFLUENCERS

When accessing an audience, it is vital to understand the context they inhabit, especially the influencers within their social groups.

Investigating this for the 18-24-year-old demographic reveals:

POSITIVE INFLUENCERS:

The influence of peers, both directly and via social media, is high (Smith & Anderson. 2018). In the context of developing a strong social conscience (including concern over climate change), this can be a good thing. However, Antarctica New Zealand's research indicates many miss the link between Antarctica and climate change research (Opinions Market Research. 2016. p. 4).

NEGATIVE INFLUENCERS:

On the subject of Antarctica, the only significant type of "negative influencer" for this audience is general apathy or ignorance on the topic shared among their peers (Wray-Lake, Flanagan, & Osgood. 2009).

THE CONTEXT OF THE MESSAGE: SCIENCE COMMUNICATION

The field of science communication is diverse and complex.

Historically, during the "heroic age of Antarctic exploration" (c1897–1922) interest in the adventure of exploration and discovery of the unknown combined with fewer entertainment and communication distractions of the time made for compelling reading. Today's media landscape is entirely different. Most of the planet's surface has been explored making it harder to make headlines in a communications-saturated society.

Not surprisingly, the majority of present science communication tends to sit within a context of, science. There is a plethora of science-specific books, websites, sections within mainstream news media and of course scientific journals. They are often clearly "labelled" as being scientific and promoted as such. Although sometimes independently generated, many have their roots in universities, research institutions and government agencies. This situation is exacerbated in an information-rich media context where actively persuasive messages prevail.

And that is the problem if your target audience doesn't see science as interesting or relevant to their lives.

A PASSIVE VOICE

At times the ethics associated with unbiased scientific practice drive a passive approach to science communication but as a recent research agenda published by the Committee on the Science of Science Communication stressed, science communication needs to do more than respond to an information deficit model. "A common assumption is that a lack of information or understanding of science fully explains why more people do not appear to accept scientific claims or engage in behaviours or support policies that are consistent with scientific evidence." (Committee on the Science of Science Communication. 2017. p.3). This statement is supported by significant evidence showing that knowledge does not equate to behavioural change (McKenzie-Mohr, 1999 p.3 and Sobel, 2008 p. 144). Therefore merely presenting information in a clear and logical manner is often not enough even if the only objective is to be read, let alone engage action.

It is important to stress that the role of this project is to introduce the topic, not to give an in-depth investigation of the field. It is a gateway role for Antarctic science - something that should not be taken for granted in turbulent political times. For this project, there is no expectation of action from the audience toward Antarctica or climate change.

The initial research into the Antarctica science communication marketplace confirmed Antarctica New Zealand Communication Manager, Jenine Foster's supposition - there is no shortage of high-quality Antarctica material readily available in multiple formats and often at no cost. In short, the issue is that the target audience is not actively seeking out scientific or Antarctica content because they don't *perceive* it as relevant or interesting.

ECOPHOBIA

In searching for meaningful links that we can create to make Antarctic science relevant to the audience, it is easy to look to the topic of climate change. Although there is a clear relationship between much of the current Antarctic science and climate change it can come with an unwanted psychological barrier in the form of ecophobia. According to Dr Ian Hawes of Waikato University at the 2016 Antarctica New Zealand Winter School (personal communication, May 20, 2016), ecophobia is a psychological reaction to the continual bombardment of overwhelming messages of future environmental catastrophe. In his research, Sobel (2008.pp. 146-147) describes its effect on children, who go into a state of denial, failing to listen or act because the problem of climate change seems too big for any individual action to have any effect. Making climate change a strong thematic within my project may run the risk of a reaction of “not another climate change thing” if too overt.

This phenomenon is clearly represented in Antarctica New Zealand focus groups (Opinions Market Research. 2016) when respondents described the topic of climate change as “doom and gloom”, “disempowering” and “overwhelming” (p. 7)

The final creative output uses a strategy of setting the narrative in the future looking back at the current science activity, therefore celebrating the positive acts that did to overcome climate change rather than a doom and gloom message.

Dr Ian Hawes of Waikato University warms up after a dive under the sea ice in Cape Evans, Antarctica.
My experiences working with Hawes and his team were a significant influence on this project.

SCIENCE IN POPULAR CULTURE AND ART

It is pertinent to explore science communication that looks less like science.

A common form of science communication in popular broadcast media is, of course, in the form of documentary programs.

The massive popularity of Sir David Attenborough's programs demonstrate that they are an effective voice, but, as with more science-specific communications, not everyone is engaged by documentaries.

As a fan of the documentary genre, I have noticed a definite change in the tone of many productions, particularly those on National Geographic and Documentary Channel. Since the rise of reality television, I have noted a faster-paced, storyline-centric approach becoming more prevalent. I speculate that this is a reaction on the part of the media companies to respond to changing consumer behaviour in a media-saturated world.

When working in the field in the 2016 Antarctica trip, I witnessed first-hand the documentary filming techniques of National Geographic videographer Ben Zupo and then viewed the final edited documentary series "Continent Seven: Antarctica" (2016). Personally, this series is moving toward an example of "docu-drama" which seems to be gaining popularity on channels such as National Geographic and Documentary Channel. Sitting alongside programs like Deadliest Catch, Ice-road Truckers and Gold Rush, they hype up the action at the expense of the educational content. I can only assume that the studios adopt this format to compete with other forms of entertainment and that it reflects the audience demand for a faster-paced entertainment experience.

Of course, the mixing of non-fiction and drama is nothing new and could be seen as representing a continuum that starts with films aspiring to 'actuality' through to popular shows "based on fact".

Ever since the beginning of the documentary genre there has been debate over the representation of "reality". To that point, Hartwig said: "The representation of the thing can never be the thing, it always passes through both a technical filter (the camera and display devices) and a psychological or social filter (the filmmaker)"(2001). Through the simple acts of choosing when to take a photograph, where to point the camera and how to compose the image a photographer biases the representation of reality (Rouch as cited in O'Shaughnessy & Stadler 2012, p. 311).

Examples of the variety in approach and generic hybridity exist in the Antarctic works of photographers Frank Hurley and Herbert Pointing who worked with Shackleton and Scott respectively. Authors Gray and Newton compare Pointing's more classic approach with Hurley's "aesthetic" and broad attitude to experimentation. They go on to quote Hurley's writing in an article in the June 1911 Australian Photo-Review that camera art was "not an exact representation of nature, and a picture is not a record of things in view". (Hurley & Tamiko 2001. p. 232)

In the past, I have adopted an ethos more aligned to that of Hurley whereby I focus on showing the viewer what the experience was like rather than merely what the camera saw - at times a more "poetic" interpretation. For example, art critic Mark Amery described my Kermedec related work as "...beautifully extends the documentary into poetic and elemental evocations of the experience" (2012). The intent with the Kermadec project was to raise the public profile of the region and the need to protect it. The artworks acted as an opportunity for the artists to speak rather than the artwork being a stand alone communication.

However, as stated in my methodology, for this Antarctica project I wanted to maintain a higher level of actuality to any documentary content I created. This desire created a quandary - how to raise up the entertainment factor while retaining an ethos closer to "actuality"? My solution was to make a clear distinction between the fictional "story" components of the project and their educational roots.

Art, in its many forms, also has a long relationship with science which continues to this day. Antarctica NZ has sent over 50 artists of all disciplines to Antarctica in recent years as part of its residency programmes.

Many artists, such as photographer Anne Noble (Noble, Wedde, & Porter. 2011), tend to take the role of 'critic and conscience of society' and less as an overt vehicle for science communication. Work from artists in this role tends to present to the public in the context of art books and galleries - no doubt an important role but less relevant to the objectives of this project. One notable exception is installation artist Gabby O'Connor who takes a more active role in working directly with and speaking alongside Antarctic based scientists. Although her Antarctic work is less overt in its science communication, she regularly speaks at science conferences and runs workshops with school children. Her experience in creating street installations in Christchurch and working in the field in Antarctica (personal conversation, May 26, 2016) were very enlightening.

O'Connor, G. (2015). Inland Ice. Tissue paper, dye, lacquer, staples, light .
Retrieved February 21, 2019, from http://gabbyoconnor.squarespace.com/#/inland-ice-1/

DEFINING THE CORE COMMUNICATION

A central problem to consider with this research is that many millennials are not already engaged with Antarctica or Antarctic science. Whether the science is true or not, they perceive it as not being exciting or relevant to them. Bates (2007) defines a brand as "a collection of perceptions in the mind of the consumer". I concur entirely with this concept and easily extend it to the field of Antarctica science - after all, research (Opinions Market Research. 2016) demonstrated that once prompted many participants found aspects of the science interesting. This demonstrates that the issue is primarily one of perception.

Ries and Trout (2010. p.7) stress that in an information-saturated society messages need to be over-simplified to have cut through. In the context of this project that means filtering the aspects of science in Antarctica that have relevance to the audience to create an extremely simple message to push forward. This concept sits well with the project intent since, as already stressed, the role of this project is to introduce the topic - not to give an in-depth investigation.

Essentially, the task for this project was a repositioning and repackaging of Antarctic science. I was not suggesting repositioning the entire field of study. It is not some sausage that needs a new recipe in order to sell. The task was to find the most appropriate aspects of the science, repackage them so that they would be perceived as desirable and relevant and then reposition them to confront the audience within their regular activity.

Filtering down the plethora of fields of Antarctic science was surprisingly simple. Climate change is a prevailing element to many areas of research and clearly is relevant to all people. However, it needs to be presented in a format that isn't seen as "yet another climate change communication".

Therefore, the two key science messages that are required to act as a gateway to a wider world are:

• Antarctica is a significant contributor to the planet's weather patterns

• Antarctica is a pristine environment for scientists to study our past, present and future.

The weather is a very tangible representation of climate and has a high profile in media at present. The "pristine environment" message explains why this place is important for science. Making it relate to OUR past, present and future links the science work back to the audience and climate change.

Originally I included a third message - 70% of the earth's fresh water is held frozen in Antarctica and therefore poses a significant threat through sea-level rise if it melts. Although I have kept a reference to this in the narrative (a transition to an undersea world) I have chosen to not make that explicit for now as it too easily could trigger an ecophobic reaction.

As a secondary thematic in the documentary components of the project I have embraced the human hardship and adventure aspects of scientists working in the field. This was identified as a clear area of interest in the focus group research (Opinions Market Research. 2016) and has the added advantage of making the scientists less of an abstract concept - they are human like us, not the faceless scientists quoted in media with hard to grasp areas of study.

SCIENCE NEEDS STORYTELLING

In their PNAS (Proceedings of the National Academy of Sciences of the USA) article titled "Finding the plot in science storytelling in hopes of enhancing science communication" Martinez-Conde and Macknik (2017) champion the use of a more 'poetic' storytelling approach to form a gateway to science for non-experts. They

suggest “To bridge the gap, we must decode science to a narrative that generates feeling.” They go on to use the example of Edward Morgan Forster’s 1927 distinction between saying “The king died and then the queen died” compared to saying “The king died and then the queen died of grief”. By adding “of grief” the statement moves from simple fact to an emotive engagement.

This importance of storytelling is validated further in an interview for the BBC World Service (BBC,2019) in which Sir David Attenborough spoke to the challenge of balancing storytelling with science communication. Addressing his use of story and anthromorphism in his narration, he said “...we like drama - we like stories.” but he stresses his personal desire to not let the narrative take over or taint the facts.

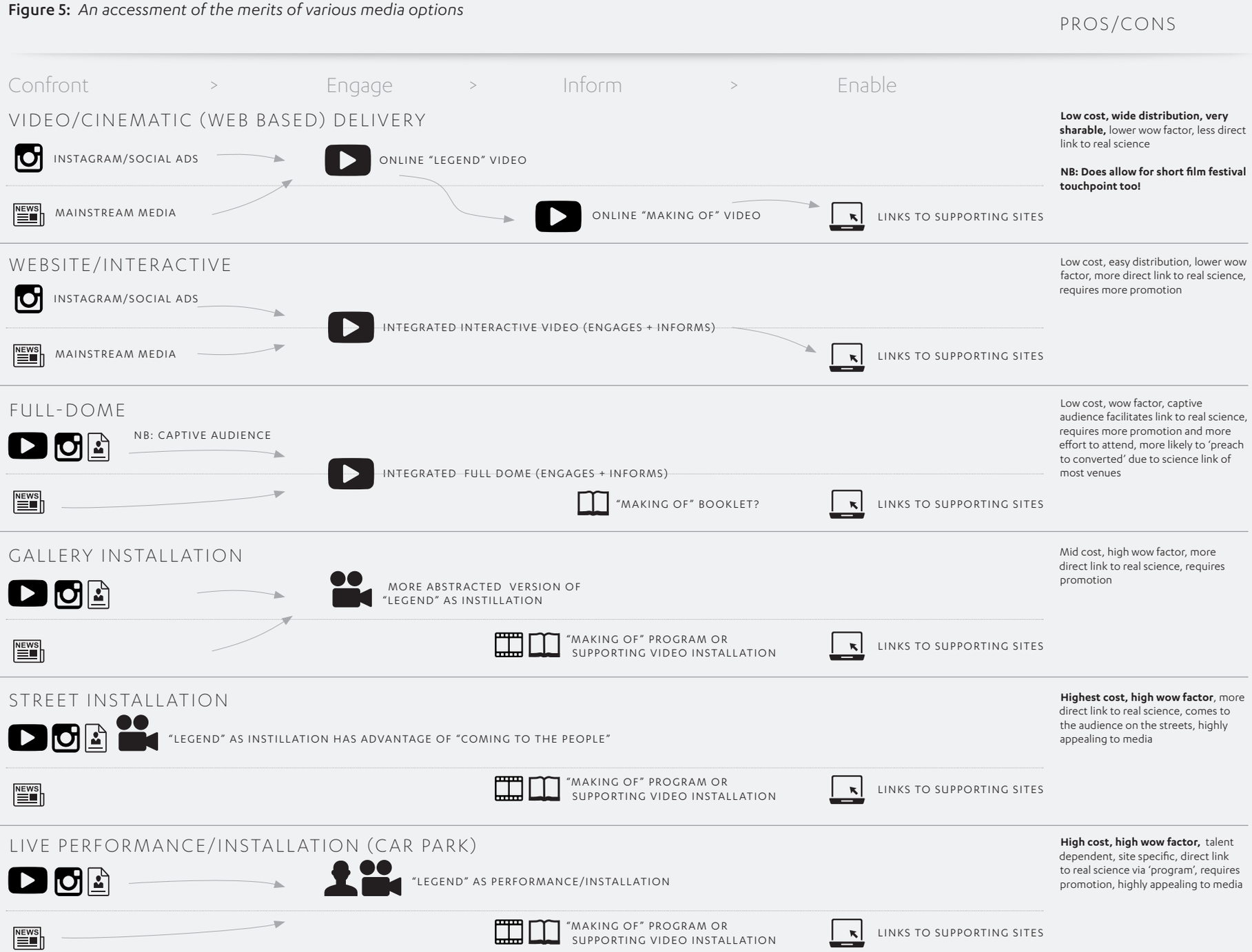
What if I create a metaphorical legend to act as a carrier for the science in Antarctica? After all, storytelling has played a vital role in entertaining and educating societies for millennia (O’Shaughnessy and Stadler. p. 328). Myths, legends, fables and folklore often repackage factual or moralistic information to make it more digestible for the audience.

One particular aspect of Antarctic science then triggered an idea. NIWA scientists are drilling into glaciers and sampling the air trapped there from thousands of years ago (Nichol. 2009) - it was as if Antarctica was a guardian for the memories of the world.

From this, I developed the core narrative concept “*Where Memories Sleep*”, constructed around an imagined ‘legend’ of mythological being, a Kaitiaki for the memories of the world. It is supported by documentary content making the links to real science and its relevance to the audience explicit.

Beneath each element of the fictional narrative is a non-fiction aspect of the current scientific activity in Antarctica - a relationship that is explained in the documentary artifacts that accompany the installation. This science content has been carefully selected and crafted to present material that has the most relevance to the audience in a small digestible bite so as not to overwhelm them. Opportunities are offered for future investigation if the audience wants to investigate further

Figure 5: *An accessment of the merits of various media options*



In essence, this legend acts as a marketing "Trojan Horse" delivering educational content packaged within a piece of entertainment. Of course, this strategy is nothing new. Business mentor Shane Parrish points out that the Greek strategy in the Trojan war has been reinterpreted by marketers, artists and musicians for decades (Parrish, 2017).

One of the most significant communication challenges for the project is finding the balance between delivering the audience the entertainment experience they expect while ensuring the critical science messages get through.

With the strategic approach to the content resolved the next challenge was defining a means of delivery.

CINEDANCE AS A MEDIUM

In a previous project with which I was I was involved, the *Kermadec Art Project* (Golder & O'Brien. 2011), I was a central figure in repackaging science and environmental issues as art. Although this had a high profile and relative success in attracting attention, its target audience and goals were entirely different. Primarily centred around an art gallery experience, it was a relatively passive promotion and Creative New Zealand-commissioned research (Morris Hargreaves Mcintyre, June 2012. pp10-12) indicates that younger audiences have greater participation in "art as entertainment", particularly in the performing arts.

Correspondingly I decided to explore the viability of using a cinedance installation as the delivery device. Initial investigations were positive with many potential venues from galleries to street festivals. Street installations have the strategic advantage because they effectively come to the people, particularly the millennial demographic, without requiring specific marketing. Street festivals, like Wellington's annual LUX light festival, also have a slightly broader appeal for the target audience than art galleries and museums (Morris Hargreaves Mcintyre. 2012. p.11).

The popularity of dance was further reinforced by DanceNZ research statistics (2015). They estimate that in 2014 "more than 630,000 New Zealanders of all backgrounds, abilities and ages dance regularly, which is far more

than play rugby and netball combined" with dance being the eighth most popular physical activity for New Zealanders age 16+.

Of course, a young demographic has a bias toward digital media, particularly video and social media (Smith & Anderson. 2018) but that comes with the challenge of initially getting cut-through in a message saturated context.

In her studies of kinaesthesia and cinedance, Wood (Mitchell & Wood. 2016. p. 245) suggests that audiences develop a more profound empathy with the dancers, and therefore cast, of a cinedance production because the act of watching dance evokes the sensations of movement even within a static audience. I suggest that this "kinesthetic empathy" therefore increases the uptake and memorability of the messages contained within the narrative. Wood goes on to say that, compared to stage performance, filmic representations of dance have the advantage of being able to deepen this relationship with the audience through the use of techniques such as close-ups and physics-defying portrayal of dance.

If cinedance connects, then a multi-projector installation offers even more opportunity to immerse the audience.

THE VISIBLE BENEFITS OF PUBLIC INSTALLATION

Creative opportunities aside, there are many communication advantages to creating a multi-media installation.

Attending a performance is a group activity that encourages discussion with peer groups. This has viral promotion benefits, but more importantly, by visibly supporting the project through attendance, the audience's self-perception evolves to encompass the project's underlying messaging. When individuals see the peer group accepting or even discussing a topic or behaviour that has previously not been included, then a new norm is established. Although subtle, these factors represent various community-based social marketing techniques such as self-perception theory and social diffusion (McKenzie-Mohr. 201. p. 47 and p. 73). Many of these shifts in attitude are gradual and incremental over multiple exposures to communication on the subject.

Clearly, the more public the installation, the higher the potential for onboarding but, regardless, the very fact that it is a group activity has significant social diffusion advantages (McKenzie-Mohr. 2011. P. 73). Many of these shifts in attitude are gradual and incremental over multiple exposures compared to an individual's online experience. To that communication end, an ideal location is in a highly visible public space such as the Wellington waterfront - however, this can come with a price tag as the logistics of weatherproofing and public safety dramatically increase costs.

THE CHALLENGES OF RECONTEXTUALISING

Recontextualising the communications as "entertainment" brings with it a new set of challenges - there is a tremendous amount of competition for the audience's attention and time within this market. This demands that the project can stand on its own legs as a high-quality and unique entertainment option.

In its favour, the unique approach, public good aspirations and high profile of my music collaborator, Warren Maxwell, should make it an appealing subject for mainstream media. Also, within the New Zealand market there tend to be very few art installations in any one place at any time.

Interestingly Antarctica, in this context a source of creative inspiration, becomes a point of difference within the context of entertainment.

The user-journey in Figure 6 (p. 38) demonstrates the interconnected marketing and communication components leading up to, during and after the *Where Memories Sleep* performance.

As noted above, an ideal installation venue for the project would be on a highly visible public place such as Wellington's waterfront. To a degree, this reduces the need for separate marketing by bringing the performance to the audience.

This is not the case of the Full Dome installation at SpacePlace - located at the top of the Wellington Botanic Gardens it gets relatively low local thoroughfare. This puts greater demand on the promotion of the performance.

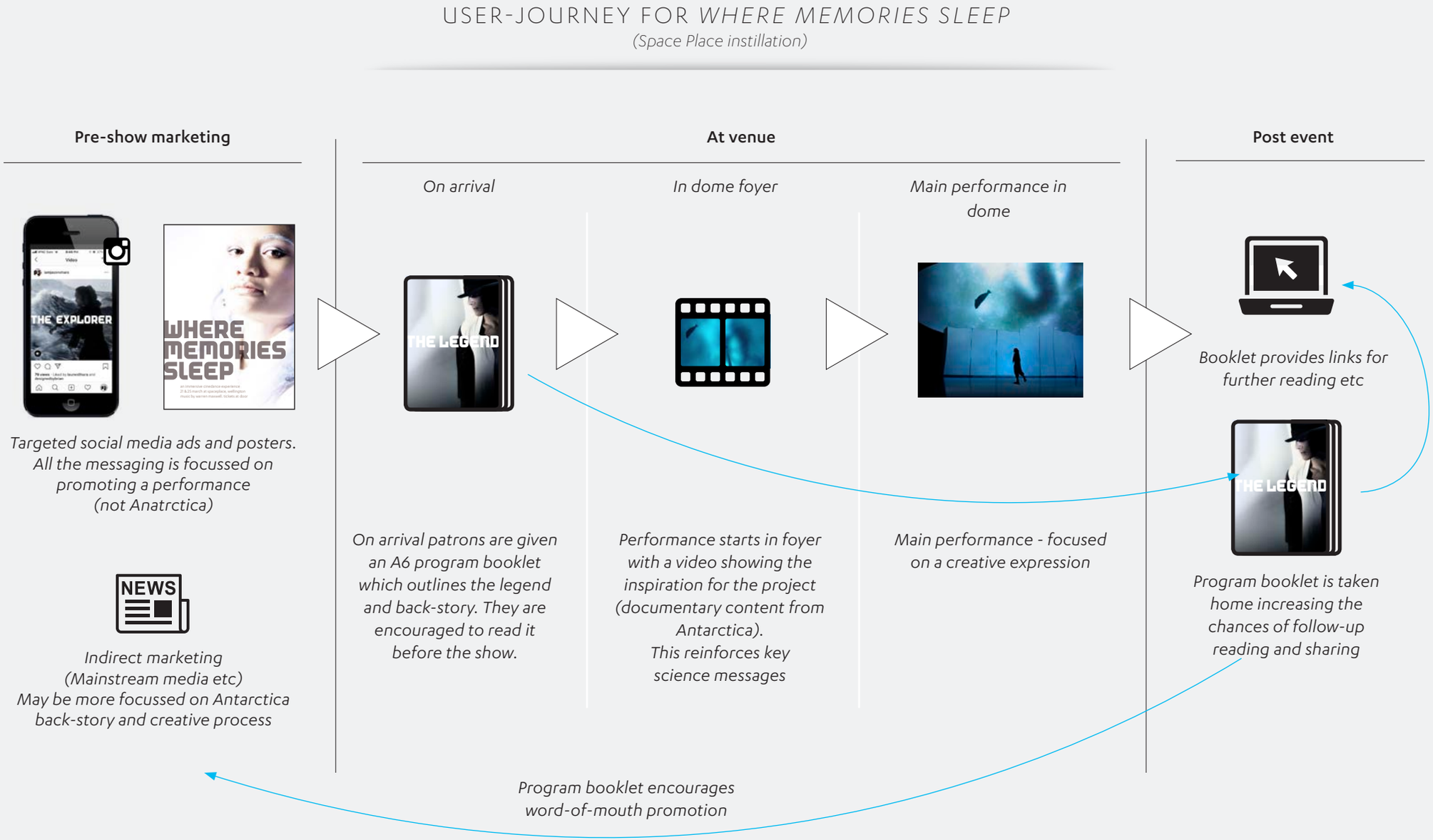


Figure 5: *The interconnected marketing and communication components leading up to, during and after the Where Memories Sleep performance.*

This is another opportunity to tap into the interests of the audience. All the marketing will focus on this being an "immersive cinedance experience" that is "inspired by" Antarctica (if it mentions Antarctica at all). Stylistically the material should fit a contemporary entertainment zeitgeist while standing out. Placement is another crucial factor. As well as tapping into the usual SpacePlace marketing collateral, the promotion includes audience-specific marketing posters placed in universities and dance schools that are supported by Instagram ads targeted to dance and entertainment tags.

PREPARING THE AUDIENCE

A significant risk in taking a very metaphorical approach to storytelling is that the audience may not make the connection back to the actual messages.

I have witnessed how successful the simple act of "pre-informing" can be to negate this issue. At a recent musical installation/performance of Polar Force (Ughetti & Britton. 2018) in Melbourne this year, patrons were given a small program on arrival which detailed the inspirations etc. behind the production. The audience was encouraged to read the project's back-story while they waited for the performance to start and I observed that many did as instructed.

Conversely, I have also witnessed the impact of not providing something like this at various live public space performances. For example, at the recent *Waka Oddessy* (Marbrook, 2018) I was part of a tightly packed crowd watching the performance on the Wellington waterfront and could regularly overhear people commenting that what they could see was great, but they wished they understood the storyline. One individual in the crowd did know the background and when they took on an impromptu role of narrator I instantly witnessed peoples' appreciation and enjoyment levels go up.

Giving patrons a "program" (for the want of a better word) also makes the links to Antarctic science explicit. Research into persuasive techniques (Cialdini. 2012) stresses that being explicit is a vital component of persuasive communication and that the order in which the principal communication and creative elements are presented doesn't matter.

In the context of the full dome installation of *Where Memories Sleep*, patrons are given a 'program' in the form of a small booklet on arrival at the venue. It explains the narrative and more importantly the science that inspired it. Sized to be easily taken home it also acts as an informative keepsake and encourages word-of-mouth promotion to others.

This sort of informative device is also an excellent tool to give artistic freedom to performers without compromising communication, education and enjoyment of the artwork.

ENOUGH READING AND THINKING - TIME TO GET MAKING

That was the creative direction established; Marketed purely as entertainment *Where Memories Sleep* is the legend of the Aurora Australis - expressed through a combination of music, dance, immersive video and scenography.

FINAL SYNOPSIS OF THE *WHERE MEMORIES SLEEP* LEGEND

According to legend, an ancient and powerful sorceress called Kaia lives in a frozen land at the bottom of the world.

She is a kaitiaki who has watched over the earth for millennia from her icy home at the bottom of the world where she is a conjuror of powerful storms, occasionally riding them north to observe the changing world, storing the memories of each journey in her icy cloak.

One day an inquisitive young explorer called Si was accidentally caught in one of her storms and pulled perilously close to the shore. Kaia realised this was an opportunity to finally pass on her knowledge to someone, and commanded some penguins to rescue Si.

When the storm cleared, Si found herself deposited in a foreign world, confronted by the penguin gang. They attempted to make her welcome with a botched greeting dance before the towering figure of Kaia appeared, sending the locals scattering.

Kaia explained that she could help Si return home, but before doing so, had a gift for her. Since the dawn of time the kuia had been watching the world, and now she pulled the frozen memories she had stored within the folds of her icy cloak and gave them to Si so that she might learn from them and help people prepare for changes ahead.

While all this was happening Kaia's son, Hira was watching, disguised as a seal. Captivated by Si's beauty, he transformed himself into human form and seduced her with his graceful dance.

Si was tempted to stay with her new love but, with the cold darkness of the winter approaching, she had to leave.

Hira was heartbroken and as she departed he sung a song of desire so beautiful that it lit the winter sky.

And it is his song, transformed into ribbons light, that we see in the sky above Antarctica each winter.

The glacier set modules during production.

DESIGN DEVELOPMENT AND DELIVERY

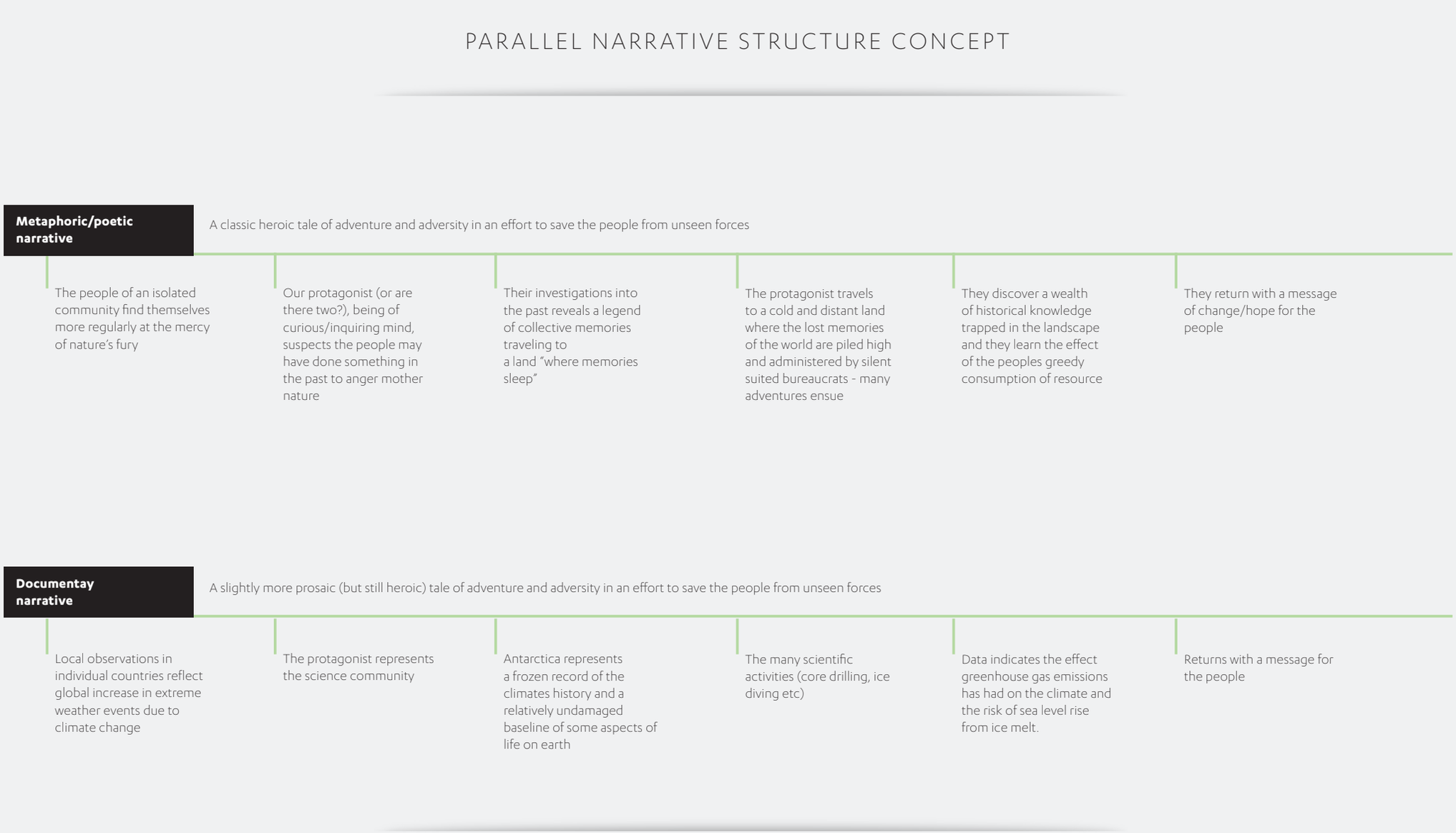


Figure 6: *One of the first attempts at a narrative structure completed on my return from Antarctica in 2016*

Stage Two: Design development and delivery

NARRATIVE DEVELOPMENT

First I need to define my use of the term "narrative", specifically in the context of "visual or brand narrative".

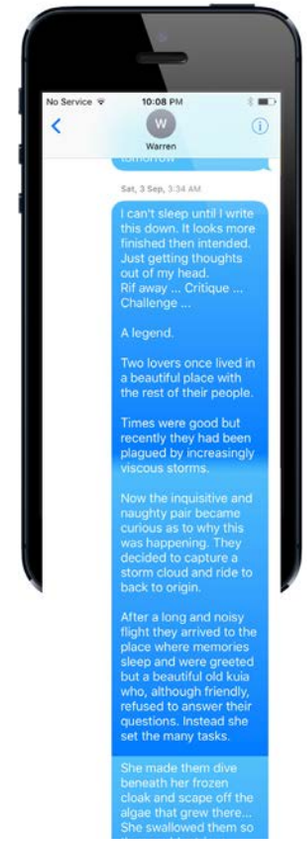
I think of narrative, particularly within a communications or brand design context, as like designing a Lego set from which you can build many models (stories) from the modular components. To use theatre terminology, you can use it to create the plot, sets, and characters required to tell one or more variations on the same general story or collection of stories. Within the context of the branding industry, the narrative elements are often referred to as a "brand toolbox" - the logo, visual elements, typographic approach, tone of voice, image style etc. Because this project involves the recontextualising and marketing of a new idea for this audience all these interpretations of "narrative" are appropriate.

In the case of this project, two key components within the narrative elements are the parallel storylines of the legend and the factual science that inspired it.

On my return from the 2016 trip to Antarctica, I began to collate and arrange my own experiences on The Ice into rough narrative elements (Figure 6 on p. 44). From these snippets, I created metaphorical parallels in the form of characters, scenarios and plot elements that slowly and iteratively evolved into a rough linear storyline complete with initial scenographic considerations (Figure 7 on p. 46). Development was lead by characters and settings similar to a theatre production or an electronic game - it became clear that the plot could be treated as a loose guideline rather than a written story. I found the freedom of this premise liberating and the absence of a written or read narration became a guiding principle for the project and so I researched the history of oral and visual (non-written) storytelling.

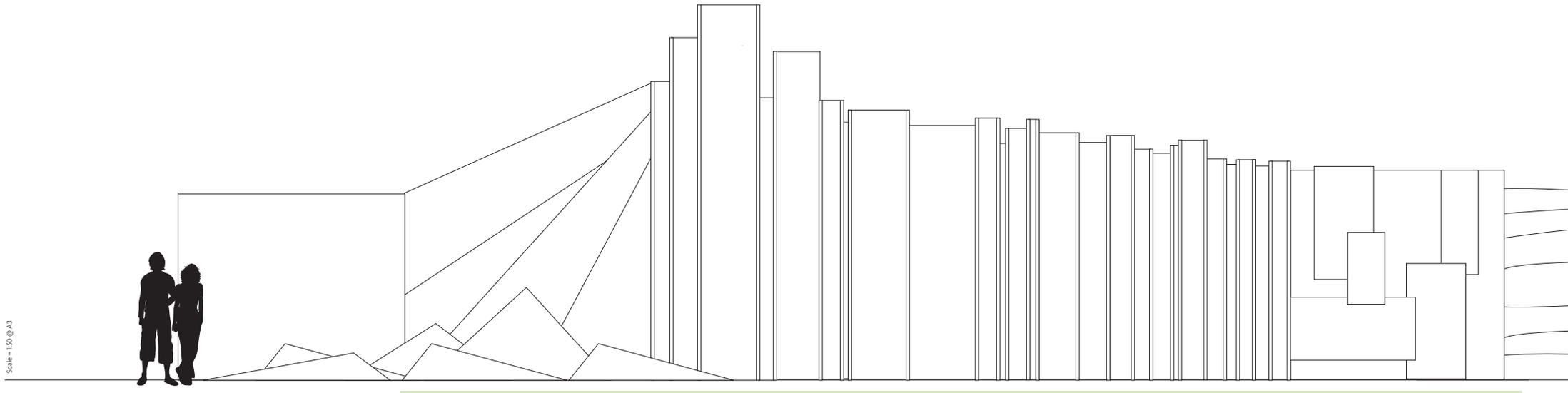
As the narrative developed, I became aware of parallels with other stories both historical and contemporary. My investigations ranged from Greek (Fry. 2018) and Māori (Reed. 2004) mythology through to Alice in Wonderland (Sparknotes. n.d.) and The Wizard of Oz (Myers.2017). In a more contemporary cinematic context, the idea of parallel narratives is also demonstrated within the film "A life of Pi" (Lee. 2012) in which the protagonist translates the horrors of a shipwreck into a fantastical experience as a coping mechanism.

As I became aware of these similarities I would research them to ensure artistic and cultural protocol was followed. It is worth noting that many of these narratives conform to Campbell's "hero's journey" theory of narrative structure (1949). I see these congruent similarities as a testament to the power of storytelling because so many stories from my childhood have become ingrained into my psyche.



The collaborative process in action. This late night text to my collaborator Warren Maxwell shows a very early draft of the narrative being put up for critique and development.

Synopsis : A legend from our own future



Mataphoric narrative

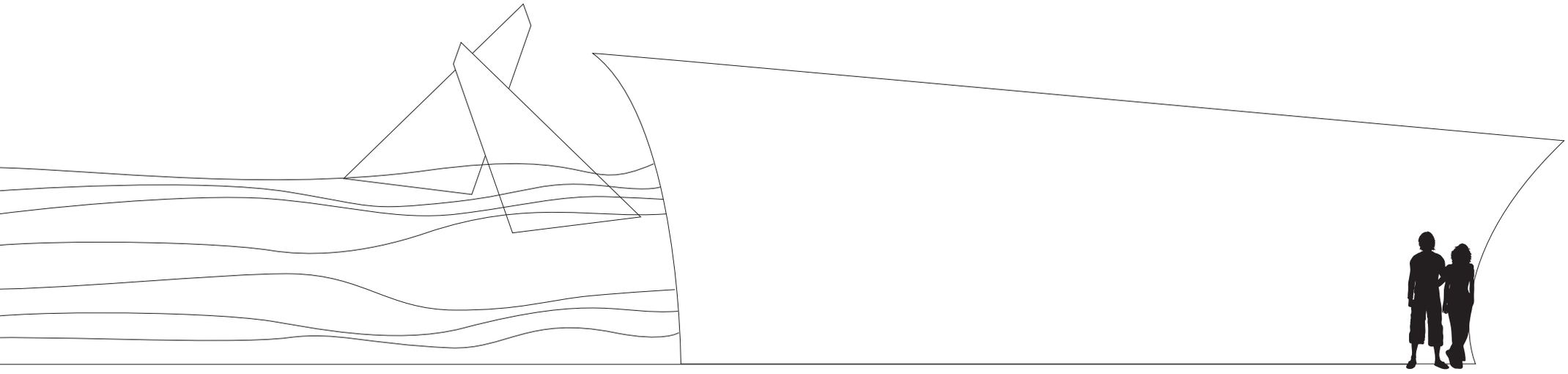
Riding a storm to Antarctica
According to legend, many years ago an inquisitive young woman called Si, was swept up from her urban home by a storm, and transported to a distant frozen land.

The personification of Antarctica
Turns out she had actually been kidnapped by a gang of ruffians under the instruction of an ancient Kuia.

Link to the real Antarctica + science:
Antarctica is not as distant as we think - Our global weather, particularly New Zealand's, is heavily influenced by the continent.

Link to the real Antarctica + science:
Life within the penguin colony

Figure 7: *Another developmental diagram exploring the relationship between the parallel narrative components as experienced in a "walk-through" set design. In this concept, the audience physically follows the story.*



The Kuia and her sleeping memories
Over centuries the Kuia had been observing humanity, collecting the world's memories in her icy cloak.

The Kuia had decided she needed to intervene in the recklessness she observed, so passed on her knowledge to Si, before instructing her son, Hira, to take her home.

Link to the real Antarctica + science:
Antarctica as a holder of the planet's history as revealed in core samples etc.

Hira's song: under the sea-ice
On meeting, the two fell in love but reluctantly parted. While she was away Hira sang a love song so moving it lit the darkened sky.

Link to the real Antarctica + science:
Hira represents the Weddell Seals and their mesmerising calls.
Aurora and other atmospheric study
Ice dive team and their monitoring of change.

Balance
Each year the Kuia summoned Si to teach her more, and each time Hira guided her home.
Over time, Si's learnings enabled the revolution that saved the people from themselves.
This continued for many years until Si decided to stay with her lover and she eventually took on the role of the Kuia

Link to the real Antarctica + science:
The new heroic age that is the world of the scientists, their passion for their work and for Antarctica.

ORAL AND VISUAL STORYTELLING

My research into the history of myth and legend as a narrative device revealed a long tradition of oral storytelling, theatre and dance. Across cultures and long before the advent of the written word, metaphorical stories such as myths were an essential function in early societies where they were used as a device to educate, influence and entertain (O'Shaughnessey & Stadler, 2016, p. 328). As writing and printing techniques evolved, many of these formed the basis of written stories, notably the Grim brother's fairy tales and Greek classics like Homer's Oddessy (Leeming & Sader, 1997).

Closer to home, researcher Dan Hikuroa (as cited in Wannan.2015) maintains that some Māori legends, known as purakau, may be a form of oral record concerning historic catastrophic natural events and act as a warning to following generations. An example of this is the legend of taniwha Ngake and Whataitai and how they created the Wellington Harbour. Hihuroa suggests this may represent a seismic activity or a tsunami. In a practical application NIWA (National Institute of Water & Atmospheric Research) researchers (King and Goff. 2006. p. vi) propose "... this Māori environmental knowledge provides a valuable source of expertise that can contribute to contemporary natural hazards management and mitigation in New Zealand."

It occurred to me that when we read or listen to a story, we have to be active in the narrative, imagining what things look like - inherently engaged. I question if this is something that society may have lost now that modern computer generated imagery has made the typical cinematic experience very 'real' and therefore potentially passive for the audience.

From these observations, another project driver evolved - leave room for the audience's imagination.

Further research into theatre history (Sorgenfrei, Zarrili, Williams & McConachie, 2006, p.21), revealed other aspects of traditional oral storytelling that reinforced this thinking. Originating in India before spreading to Indonesia, Japan, China, Iran, Turkey, Italy and Germany, the technique of "picture-recitation" is where oral storytellers used various visual aids, such as large-format painted scrolls, to supplement their performance. In Java, this evolved into wayang kulit, the traditional shadow puppet street theatre that remains popular in Indonesia today.

Concurrent with this research into historical storytelling, I explored the context of contemporary storytelling and installation. Wellington-based installation artist Gabby O'Connor is a vocal advocate of art as a partner for science communication. She has been to Antarctica twice, and I have seen her work *Studio Antarctica* (O'Connor, 2016) installed at Pataka and met with her on several occasions. She provided useful insights into the challenges of creating large-scale Antarctica installations, especially outdoors. I found great inspiration in the work of dancer/choreographer Alexander Ekman after seeing his production "Three by Ekman" with the RNZB (Ekman, 2017) along with the MN Dance Company production of "TIE" (Rynia, 2015) both impressing with their minimalist sets.

Seeking a contemporary approach to these influences, I experimented with the notion of using pre-recorded dancers silhouetted against the textures and images captured in Antarctica. Not only did this create a strong graphic style, but it also allowed for easy augmentation and manipulation to further enhance the mystical aspect of the narrative. It allowed me to play with the audience's connection to the dancers, aiding to the suspension of disbelief and their interpretation of the real-life inspirations behind the story (i.e. penguins and seals). It also had the practical advantage that silhouette enables the cast to be swapped out in future performances.

Next, I experimented with different forms onto which these textures and silhouetted characters could be projected. Thinking through various potential public spaces and the dynamics of each I rapidly prototyped scale models of different forms; from walk-through 'sets' where the audience would simultaneously follow the projections through the space and narrative, to stand-alone iceberg forms for outdoor installation to kiosk designs and even VR interpretations. All had potential, all had pros and cons and budget considerations.

As the design evolved, I began to think of the various design elements (the set, projections and cast) as modules that could be reconfigured to suit different potential installations or media. Core to this approach was the basic storyline and the characters - these would remain constant along with the overall style, but the details of visual representation and the physical set elements could be flexible.

A visual of an early instillation concept. In this version the WMS narrative is rear projected onto a stylised iceberg. This concept is still a potential future development for the project but was too expensive to pursue immediately.

SCENOGRAPHY

For the scenographic elements of the installation, I focused on a human-centred, iterative, rapid prototyping methodology - in keeping with the d-school "design thinking" process (Institute of Design at Stanford. 2010)

Empathise > Define > Ideate > Prototype > Test

Scale models of different potential installation approaches informed and assured that the conceptual approach was flexible and viable - they also helped with the promotion of the project to potential partners.

Assumptions of various aspects of user behaviour were also tested by prototyping and trialling multiple configurations, materials, video projections and lighting.

Taking inspiration from the sensuous wind-sculpted forms of the glacier faces and pressure ridges I photographed in Antarctica, I designed plywood frames over which I stretched white fabric. This created a blank canvas onto which I could project various narrative elements. Low cost, lightweight and reconfigurable, these become the core modular scenographic element. Iterative scale models and full-size prototypes resolve design details including specific fabric choice for optimum projection performance. I observed how other students, friends and family interacted with various prototypes, experimenting with various approaches to the relationship between audience, projection and form.

A strong contemporary aesthetic took shape — bold shapes and pure white forms reminiscent of the Antarctic landscape.

Confident that the scenographic approach had potential across a variety of installation situations I now had to resolve which one to do first. Some of the more ambitious "walk-through" and large-scale exterior designs would be very expensive. I decided to focus on something smaller to use as a 'proof of concept', even if it meant not quite getting the perfect match of audience numbers or the desired demographic. I approached Space Place in Wellington, and they greeted with enthusiasm the project being installed in their full-dome. By removing the seating from the dome and installing a wall configuration of the glacier modules, I had a fully immersive space at an achievable cost. Although the venue is not high foot-traffic for the target demographic, it is public enough to test the concept and provide leverage for future venues.

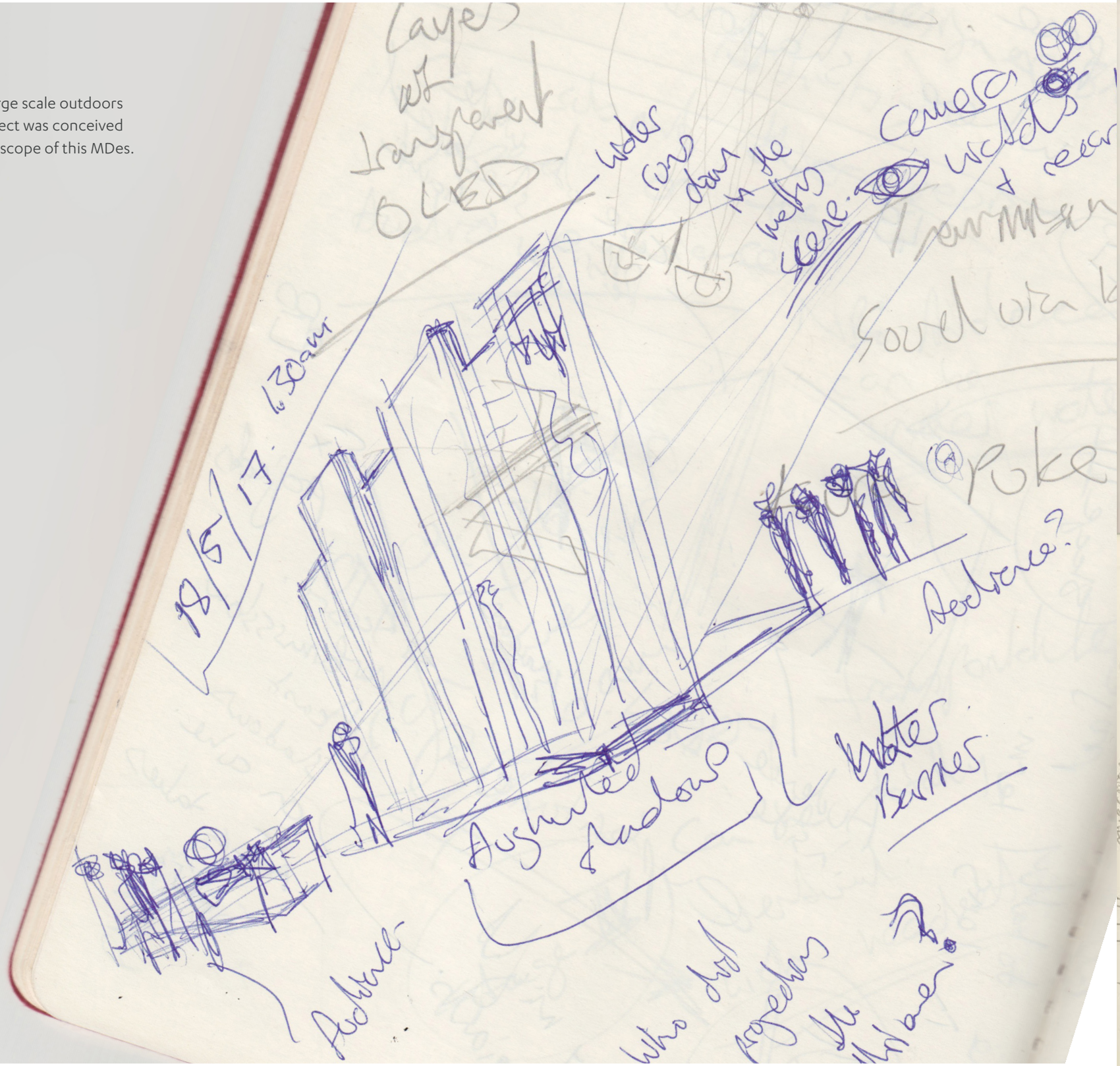
With a premier venue confirmed and a configuration of the set design resolved, full production of all the elements could now progress. Again, this involved iterative prototyping to resolve the relationship with the dome projection, audience and dancers (projected and live).

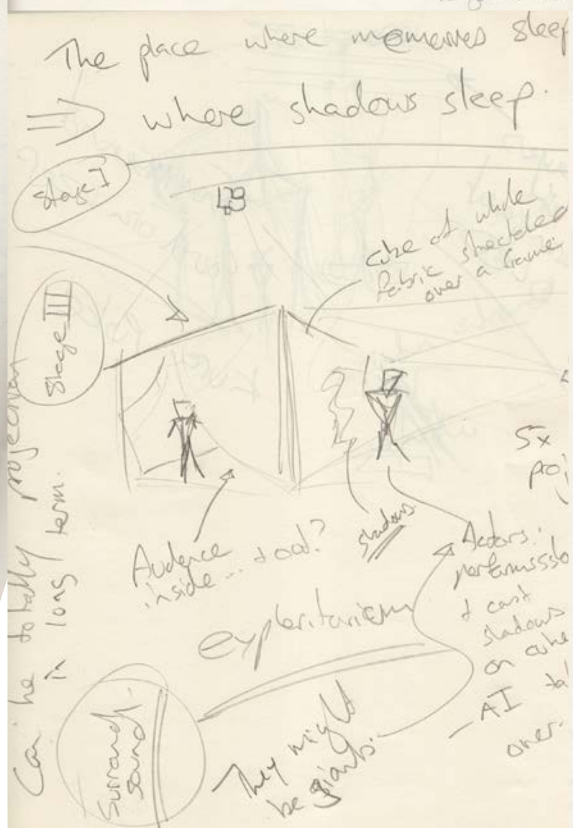
Scale models allowed testing of different configurations of the glacier modules.

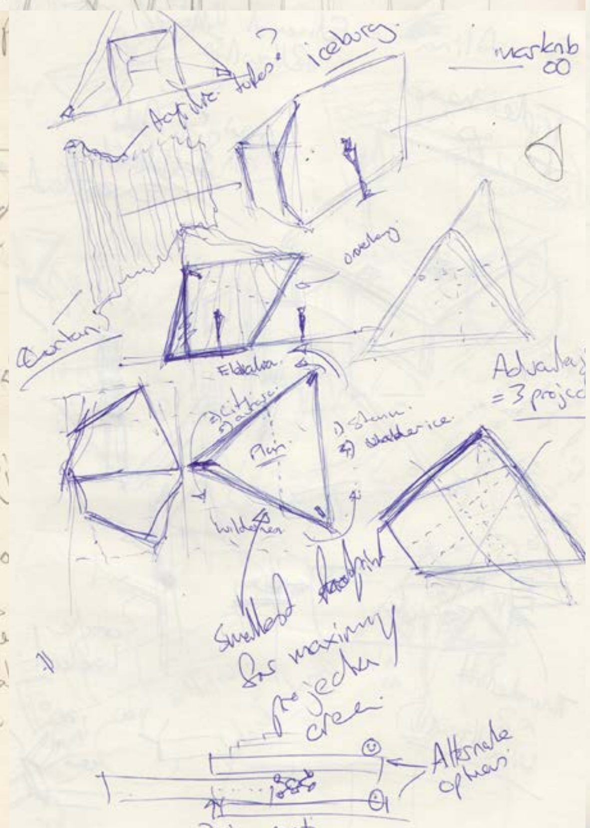
A massive iceberg trapped in the sea ice at Evans Bay, Antarctica. The sculpted forms of this and the nearby Barne Glacier were significant inspirations for the set design for *Where Memories Sleep*. This photo was taken close to midnight in full sun near our camp-site.

Computer enhanced close-up photos of the face of the Barne Glacier are projected onto the stretched fabric of the set forming a dynamic backdrop to the dancers.

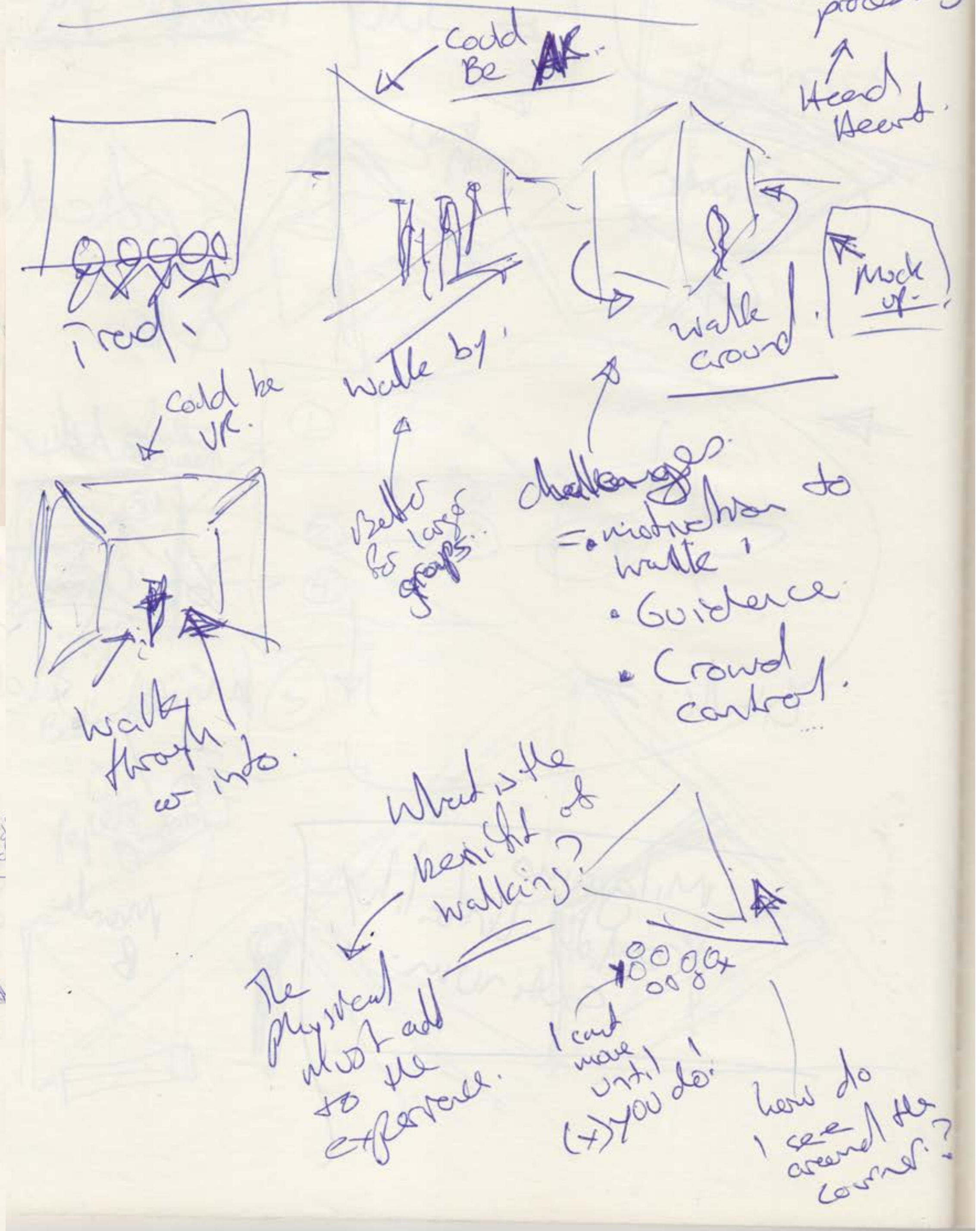
Concept sketches showing ideas for a large scale outdoors installations. From very early on the project was conceived to be ongoing and much larger than the scope of this MDes.



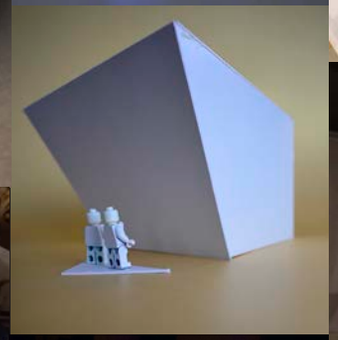


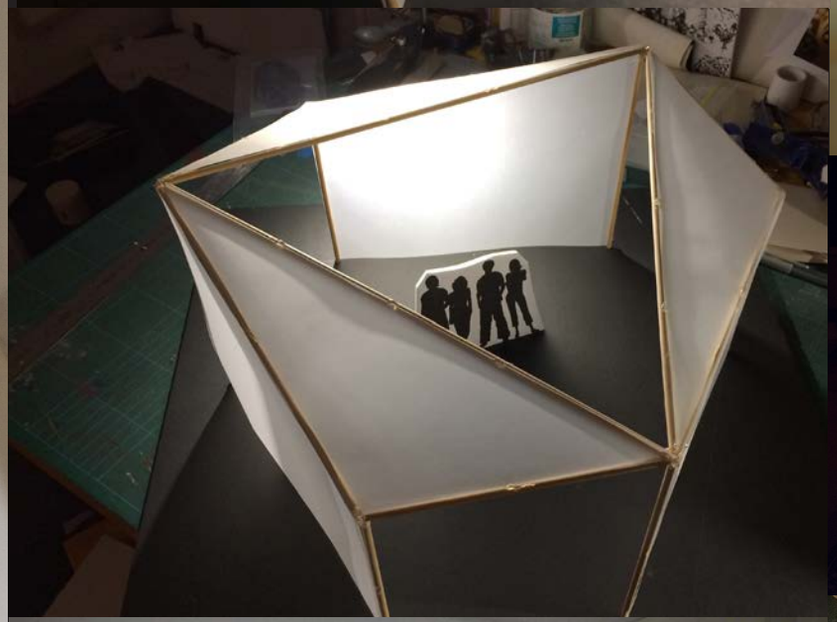


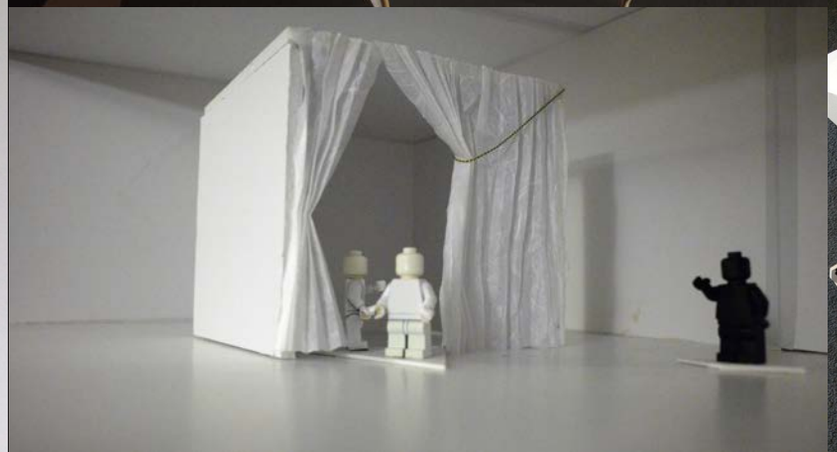
Audience partnership with installation cinema experiences.







This spread: A snapshot of the scale model prototype process used to explore and test various installation directions. Some were discarded while others were retained as potential future manifestations for the project.

This process ensured that the modular approach of the narrative elements would work across a variety of scenarios.

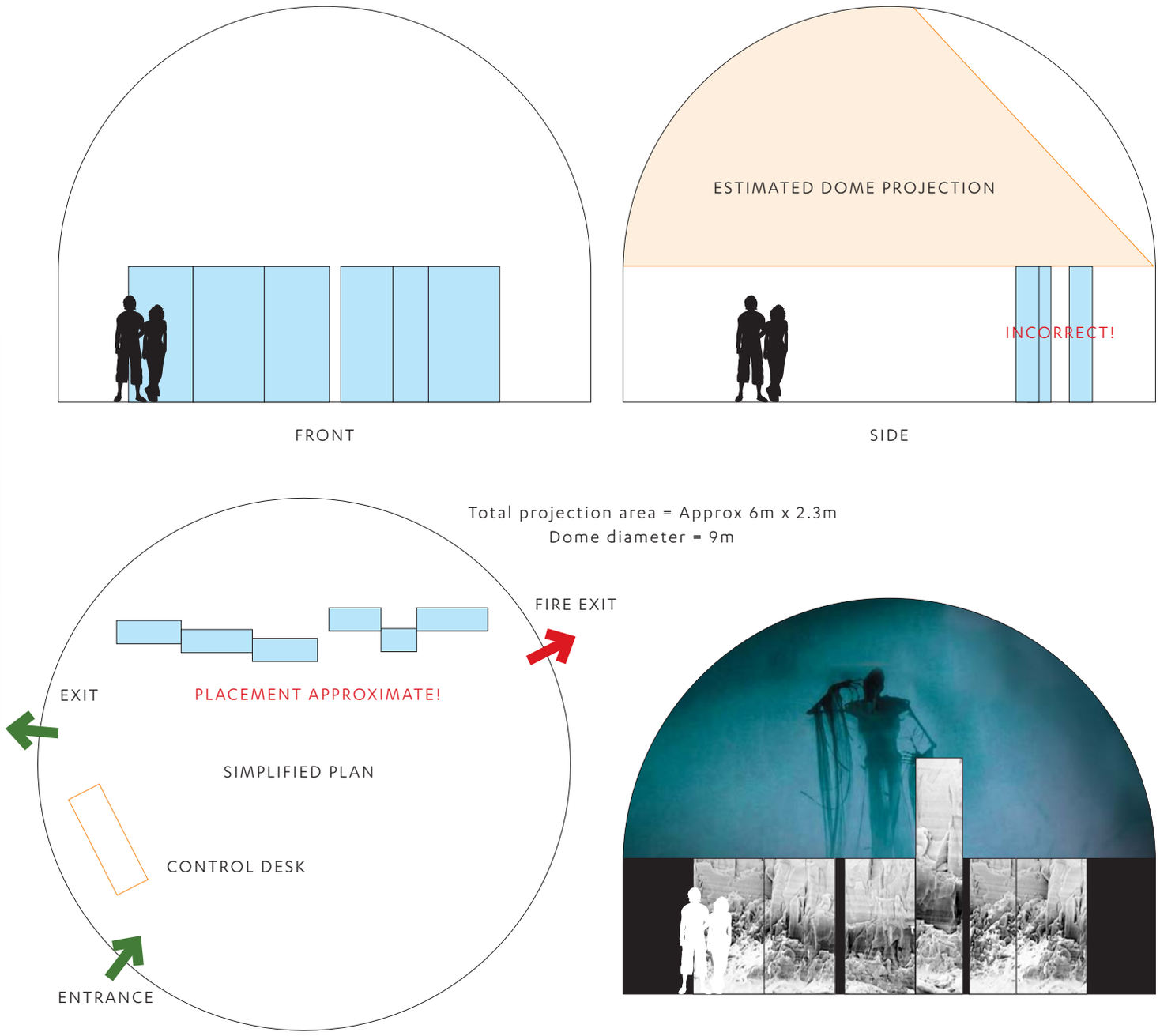
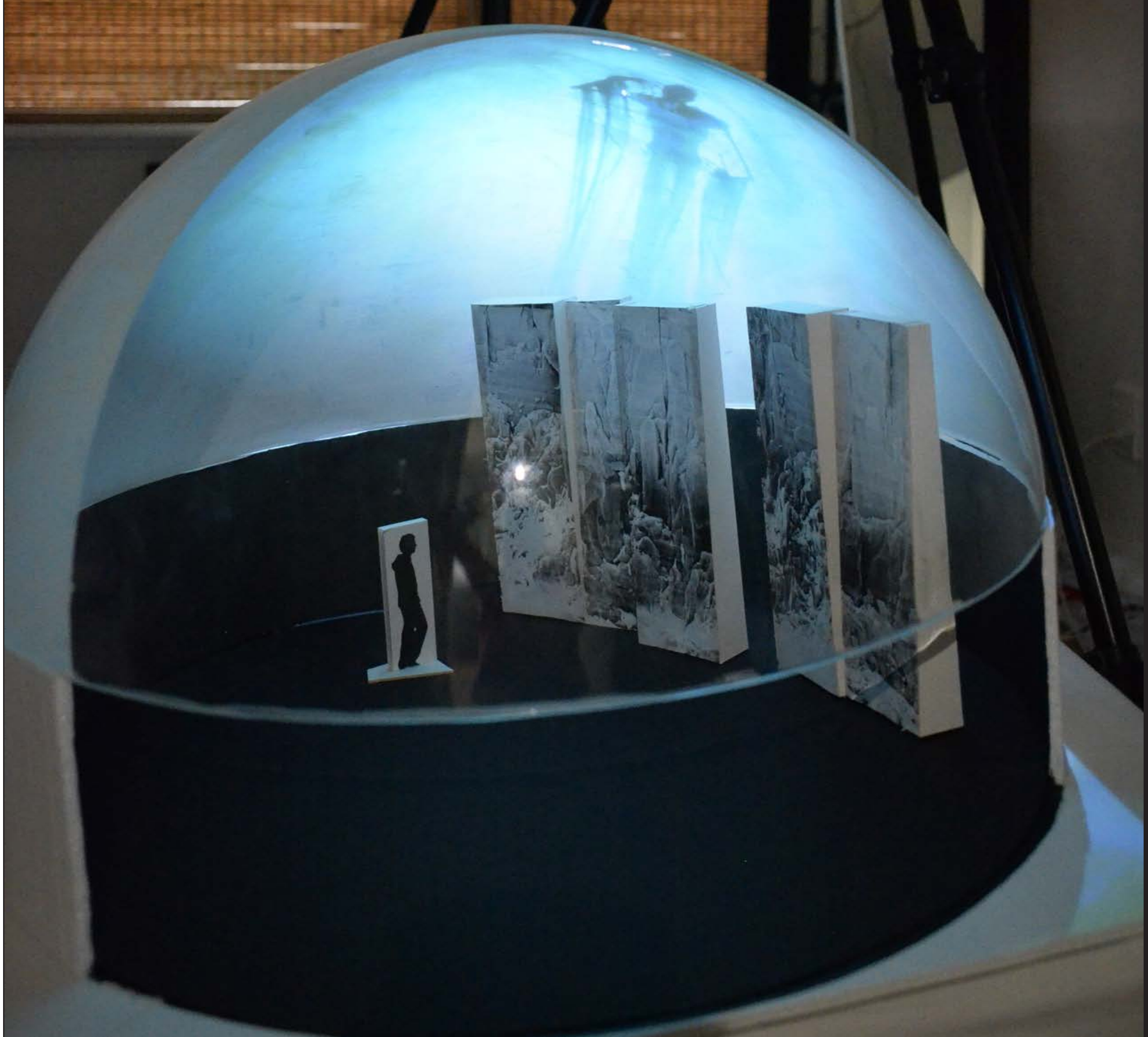
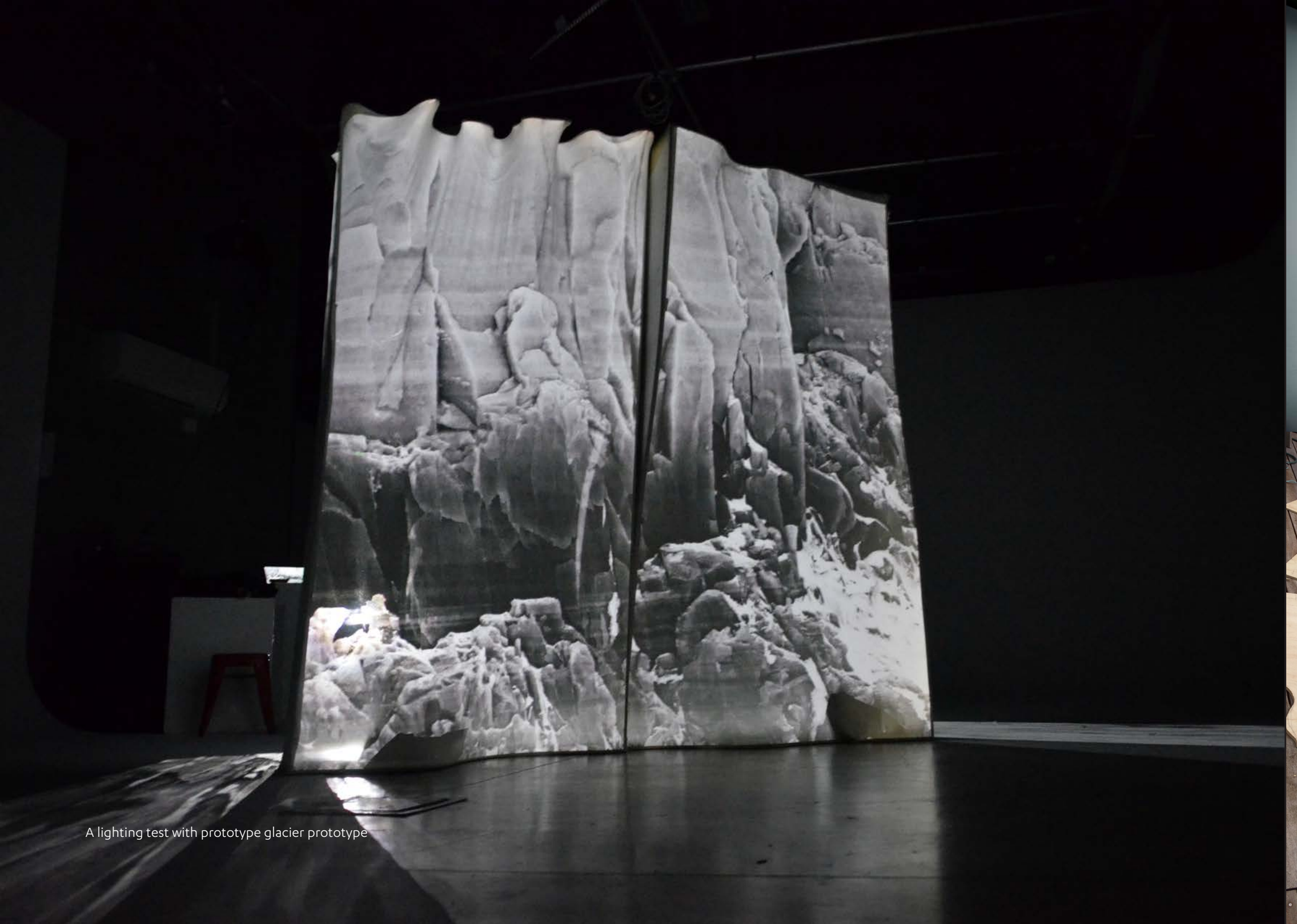


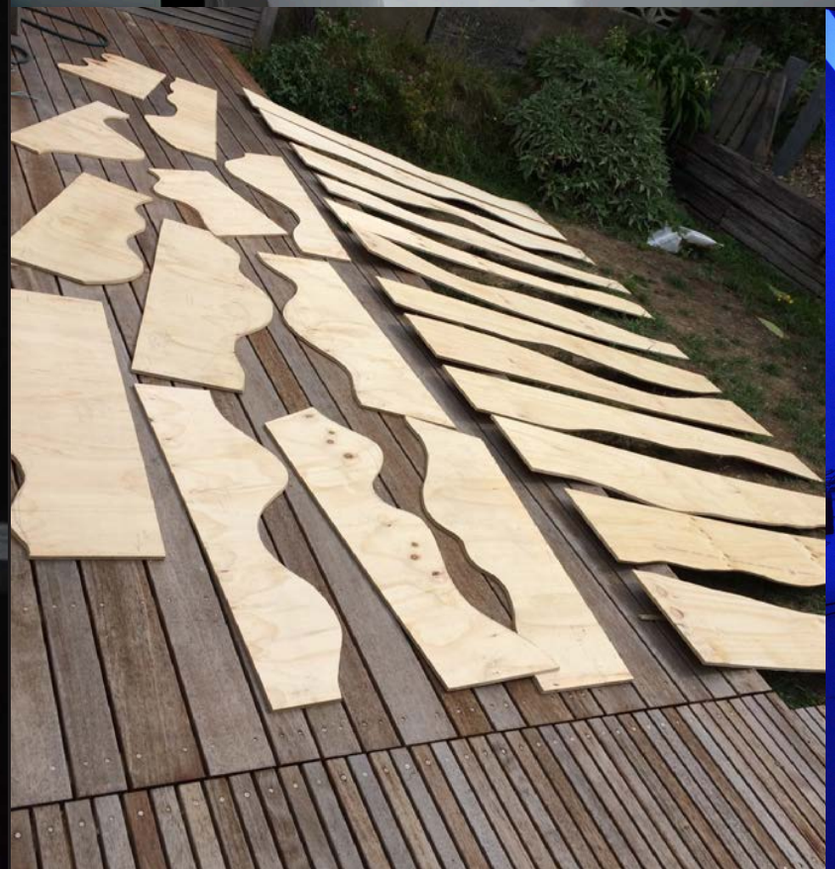
Figure 9:
Initial scale drawing of the full-dome installation resolving fire egress and audience movement.

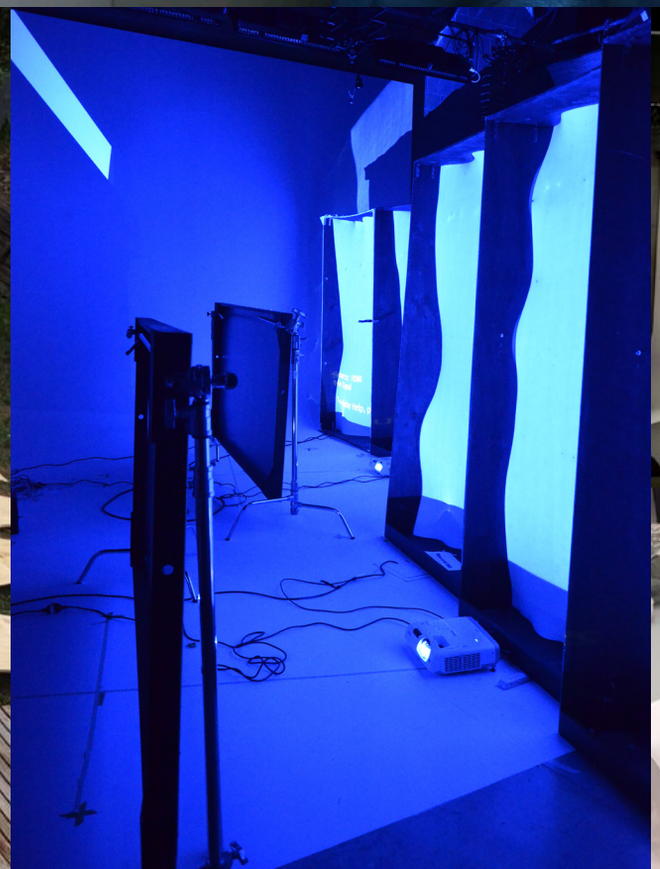


To resolve the unique spacial issues of the Space Place full-dome I made a scale model. This allowed me to address the challenge of getting enough throw for rear projection without eroding space for the audience. The final solution uses two large mirrors to halve the throw distance.



A lighting test with prototype glacier prototype





The development of the glacier set. Constructed of plywood and stretch fabric, iterative prototypes were made to explore materiality and suitability for projection (a balance between light transmission and avoidance of visible “hot spots” caused by the projectors). The final configuration is specific to the projectors to allow for the divergence of light from the lens.

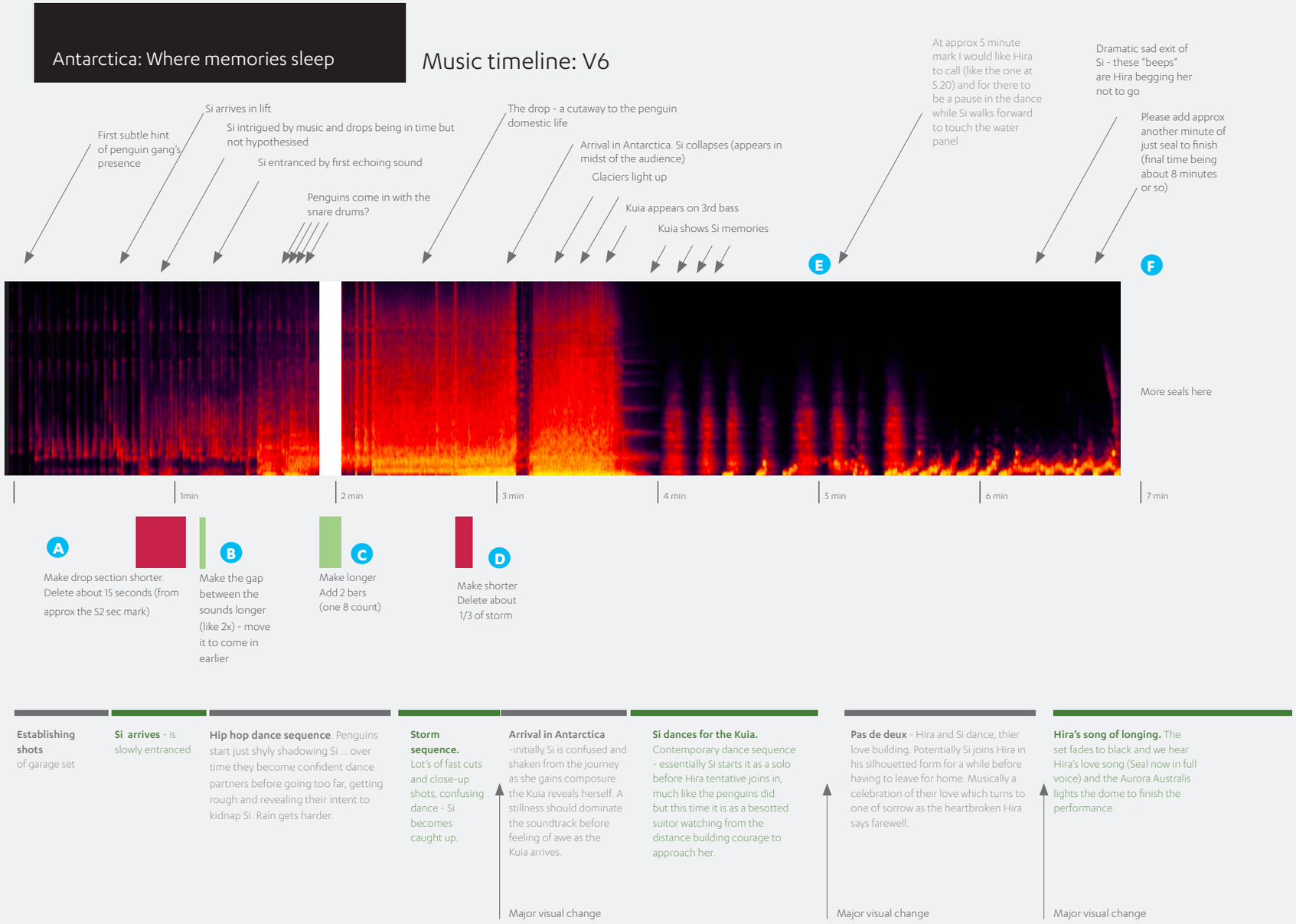


Figure 10:
One of many discussion documents developed to enable clear communication between the author and musician Warren Maxwell.

We regularly used screen-shots of spectral frequency displays in these communications

MUSIC

Obviously, music is fundamental to a story told through dance. For this project I collaborated with the highly regarded musician Warren Maxwell who accompanied me to Antarctica in 2016 to collect sound bites.

I involved Warren from the very start of the concept stage, regularly presenting ideas to him and responding to his input as appropriate to ensure the harmonious integration of music and visuals. We agreed on a tone and vibe, evolving Warren's natural style to incorporate the sound bites he recorded in the field.

I conceived the legend narrative to consist of five relatively distinct scenes:

• the storm

• penguin greeting

• Kaia teaching Si

• Hira seduces Si

• and Hira's song (the aurora).

Each of these had different audio and visual nuances that Maxwell and I discussed at length.

Once the direction and narrative were finalised, Warren began to compose, initially sending me short snippets of music to respond to before completing a full draft. At this stage, we also took input from the dance team, regularly meeting to edit roughly on the computer before Warren would refine. As the composition evolved I would roughly edit drafts, either visually using annotated screen captures of spectral frequency displays or actually chopping audio files.

Additional to his musical contribution to the project, Warren's peripheral input from a māori perspective (Ngai Tūhoe/ Ngati Kahungunu/ Ngai Te Rangi) was invaluable to maintain a richer multi-cultural flavour throughout the narrative elements. An early inspiration for the kuia character was Maxwell's grandmother Teia Kutia from Ruatahuna (Ngai Te Riu/ Tūhoe). Although I want the legend to not be specifically a New Zealand story, it is being told from a New Zealand perspective and has specific Pacific influences (the inspiration of Ui-te-Rangiora for example) which manifest within some of the language used and names of some characters.

Musician Warren Maxwell has composed the music using samples recorded in Antarctica, from penguins and seals to the roar of C17 transport planes.

Dancers Phoebe Smith and Connor Masseurs work through choreography during rehearsal.

CHOREOGRAPHY

The development of the choreography was an organic process that acknowledged the creative integrity of each discipline's artists; musician, designer and dancer. Characters were given personalities that were expressed through movement. A skeletal structure or "treatment" to the choreography that was developed in rehearsals responded to the music and my conceptual direction - these loosely-formed routines were then developed with more experimentation on set. This iterative process incorporated cinedance methodologies from Tracie Mitchell (2016. p. 635-656) which acknowledges a reflexive dialogue between dance and film elements.

One of the most significant challenges was choreographing the movements that would be edited in post-production to play with layers, repetition, scale, the scenographic elements, and of course, a live dancer in the final installation. For example, the dancers were regularly filmed behind screens without the ability to see a dance partner that would be on the other side of the set on the night of the performance.

Throughout the choreographic process, we considered the impact of including a fully live cast and/or different configurations of the scenographic elements in future versions of the project. We even shot some test sequences to "sell-in" the idea to future venues.

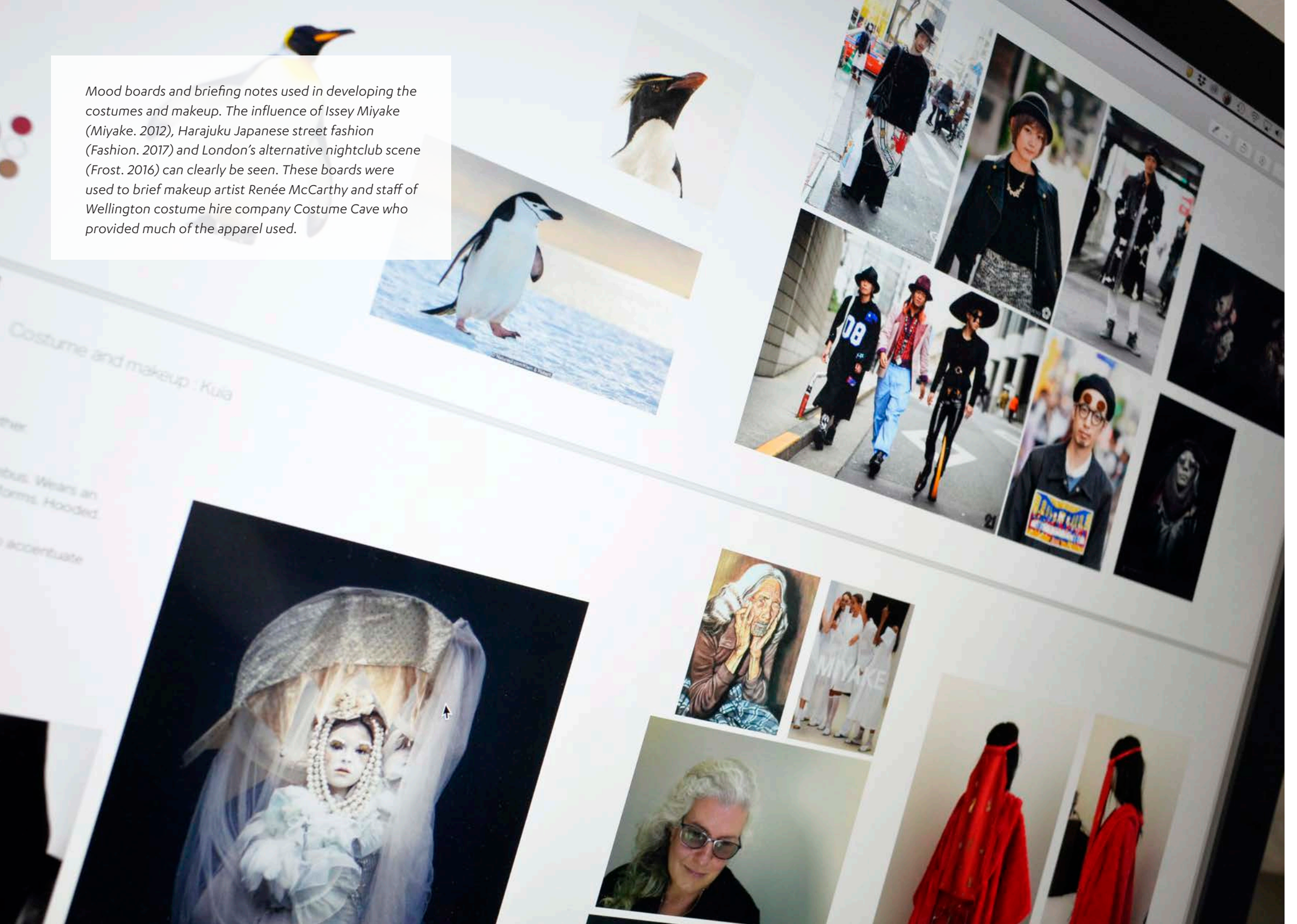
Behind the scenes - rehearsals and shoots

Working on the assumption that what the public consumes in social media is generally reflected in what they generate, a simple snapshot of hash-tag statistics from Instagram is telling for #science and #Antarctica.

On at 11am 11 April 2018 Instagram claimed the following number of posts for each hash-tag:

#dance = 58,537,451 posts
#hiphop = 45,376,180 posts
#science = 6,750,193 posts
#antarctica = 312,588 posts

Given the heavy use of Instagram by the target demographic (Smith and Anderson, 2018) this adds to the rational for using dance as a medium.



Mood boards and briefing notes used in developing the costumes and makeup. The influence of Issey Miyake (Miyake. 2012), Harajuku Japanese street fashion (Fashion. 2017) and London's alternative nightclub scene (Frost. 2016) can clearly be seen. These boards were used to brief makeup artist Renée McCarthy and staff of Wellington costume hire company Costume Cave who provided much of the apparel used.

CHARACTER DEVELOPMENT, COSTUMES AND MAKEUP

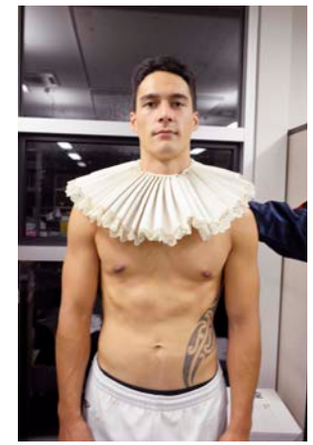
As detailed earlier, this story is primarily told through the characters. As such, the design of costumes and character personalities is vital to the storytelling and a critical aspect of the development of the choreography.

In keeping with the dynamic and contemporary style of the scenographic elements, I wanted to have strong modern forms with strong silhouettes that captured the essence of each character. I researched and took cues from influences as diverse as traditional Pacifica, Issey Miyake (Miyake. 2012), Harajuku Japanese street fashion (Fashion. 2017) and London's alternative nightclub scene (Frost. 2016).

The budget was a significant constraint for this project - particularly in relation to costume design. Aware that bespoke costumes were not an option I created looks that could be composed using off the shelf or rented items. The only exception is Kaia's dress which demanded a higher level of theatrical mana than I could create off-the-shelf.

I worked closely with Wellington makeup artist, Renée McCarthy to develop the striking makeup, using mood boards and an iterative process of collaboration.

Makeup artist Renée McCarthy applies the penguin look to dancer Connor Masseurs.



Dancer Toa Paranihi during one of many costume fit-outs. Based on mood boards a long-list of garment options was fitted in various combinations until the final looks were finalised.

The final design of the Kaia mask and costume in an image made for marketing the project.

KAIA

CHARACTER DESCRIPTION:

The spirit of Antarctica takes the form of an ancient and wise kuia called Kaia. She is a kaitiaki who has watched over the earth for millennia from her icy home at the bottom of the world. According to the legend, she is a conjuror of powerful storms, occasionally riding them north to observe the changing world, storing the memories of each journey in her icy cloak.

When the inquisitive Si is accidentally caught in one of her storms, Kaia recognises an opportunity to finally pass on her knowledge, so sends penguins to rescue Si.

LINKS TO ANTARCTICA:

Kaia is the personification of Antarctica. The concept of her storing her memories in her icy cloak is inspired by the scientists drilling core samples into glaciers and analysing the air bubbles trapped from thousands of years ago - effectively looking back in time. Like Shakespeare's Prospero she creates tempests to do her bidding - a reference to the continent's significant effect on the earth's climate.

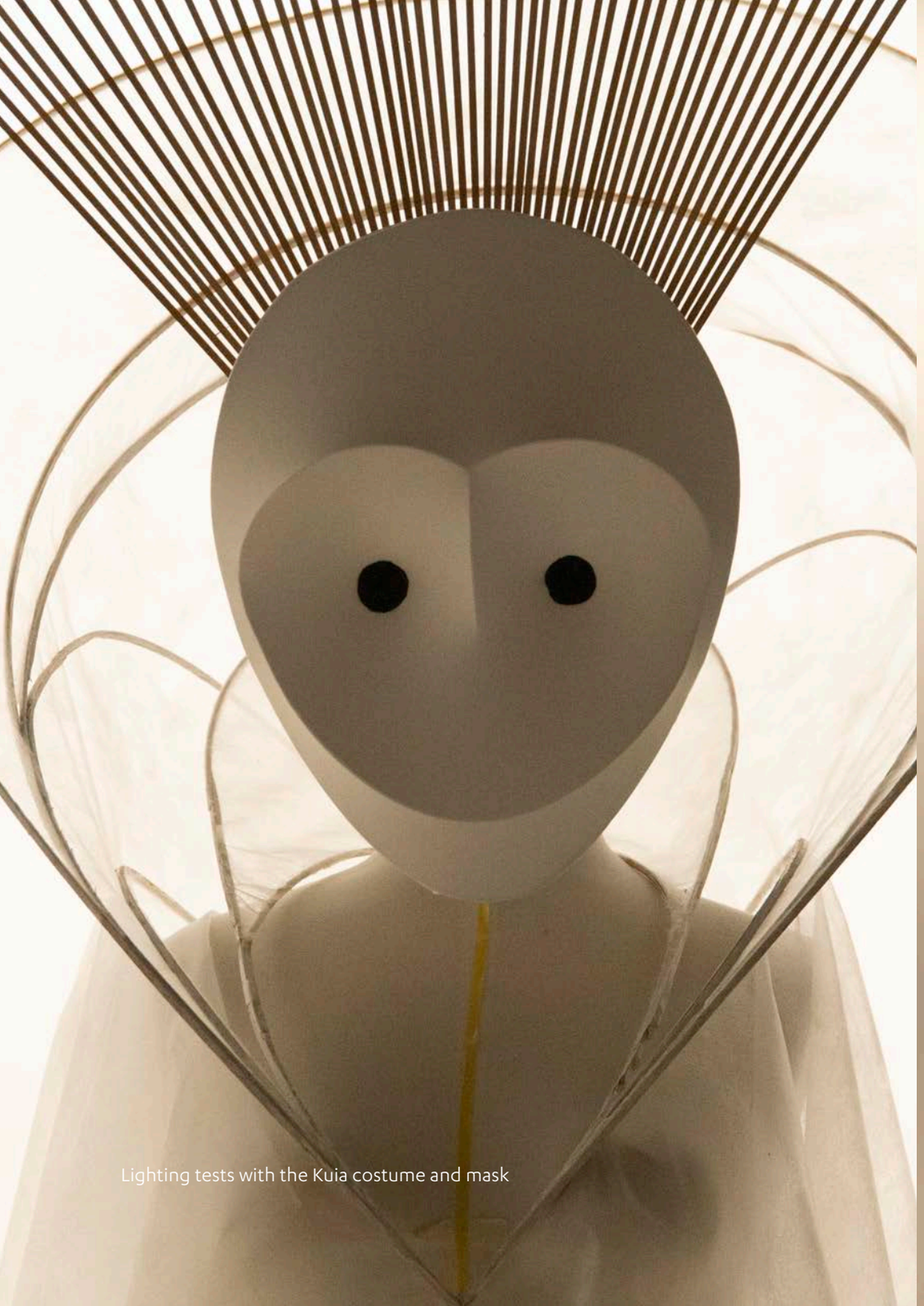
Visually I draw upon the omnipresent form of Mt Erebus that elusively hides in the mist, only appearing from time to time. Mountains have great mana for Māori (Dennis. 2012) and Mt Erebus, in particular, has historical significance to New Zealanders because of the 1979 air disaster.

CULTURAL AND SOCIAL INFLUENCES AND CONSIDERATIONS:

Mother Earth figures are common across many cultures including in the Māori legend of Rangi and Papa (Reed. 2004). In Greek mythology, this role is taken by Gaia, from which the name Kaia is derived. Kaia is a popular name today in Māori, Hawaiian and Nordic cultures. I adopted it for this character because it suggests a contraction of Kaitiaki (guardian in te reo).

Viewed within the construct of a hero's journey (Campbell. 1949) Kaia takes the role of the mentor, guiding the protagonist and gifting her a boon (the memories) for her to take back to her people.

Early concept drawings and draped prototypes



Lighting tests with the Kuia costume and mask

PRODUCTION DESIGN NOTES:

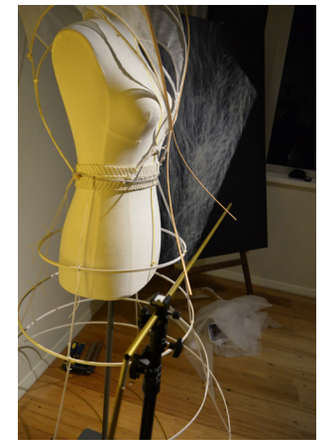
Kaia was the most challenging character to design. Pivotal to the plot, she needed a near-godly presence while still able to be represented by a dancer. Overall the costume accentuates the height of the dancer and evokes a feeling of majesty.

To assist in creating a distinction in the cast, the Kaia dancer wears a mask. Masks have been used in storytelling since ancient times. They have been used in many primitive cultures, particularly in the depiction of gods and spirits, aiding in the suspension of disbelief for the audience. This final design referenced the masks of Africa (Kwele, Gabon), Oceania (Baining, Kanak, and Tahitian) and the contemporary Basel (Switzerland) style theatre mask (Mark. 1994) and was the result of many prototypes.

Kaia's dress is shaped to imply the form of a mountain. To create the "icy layers in her cloak" I used layers of translucent polypropylene frost cloth over a lightweight hoop-dress inspired frame. Its geometric forms, and their relationship to the movement of the dancer, also bear comparison to Schlemmer (Trimingham. 2011 and "Triadisches Ballett von Oskar Schlemmer - Bauhaus (Best Quality)", 2013).








This page: The iterative "design through doing" process of creating the dress and mask for Kaia.

Aroha Watene

PRINCIPAL DANCER

SI

CHARACTER DESCRIPTION:

The tale's protagonist, a young explorer called Si, set out to the uncharted southern seas. In the process, she was overwhelmed by a storm and carried back to its frozen source, Antarctica.

Rescued by a group of penguins sent by Kaia, she became the kuia's student before returning to civilisation before the permanent darkness of winter arrived.

LINKS TO ANTARCTICA:

Si represents the spirit common to all Antarctic explorers; ranging from early Polynesian voyager Ui-Te-Rangiora, those of the "heroic age" of Scott and Shackleton, through to modern scientists.

In the year 650 explorer Ui-Te-Rangiora commanded a fleet of six canoes that sailed far enough south to report seeing icebergs, thereby making him the earliest Antarctic explorer (Smith, 1904. pp. 174-176)

Like so many modern scientists, Si falls in love with Antarctica (represented by her love affair with the Hira character) and returns each summer.

CULTURAL AND SOCIAL INFLUENCES AND CONSIDERATIONS:

I wanted a female protagonist, not only to address the stereotypical gender imbalance in legends but also to reflect young women as a vital subset of the "new audiences" target. Persuasive theorists (Cialdini, 2012 and and O'Keefe. 2002. pp. 181-213) suggest that messages delivered by demographics similar to that of the target audience are more likely to be picked up; therefore Si is cast as a young, urban, Polynesian woman.

Production design notes:

Si is a pivotal role in the production not only regarding narrative but also in the context of who she represents in the real world (scientists) and the target audience.

Taking cues from hip-hop street fashion, her look and style are aspirational but relatable for our millennial audience. In keeping with the dominant colour-way of the production aesthetic, she opens the production wearing only shades of black but transitions to an entirely white look when in the magical world of Antarctica. Her makeup is natural to highlight natural beauty.

The penguin costumes where designed to create dramatic silhouettes - here is Jared Hemopo from a shot used for marketing.

THE PENGUIN GANG

CHARACTER DESCRIPTION:

The Penguins share Kaia's icy home, acting as companions and servants. Sent by Kaia to rescue Si, these kooky characters attempt a botched greeting dance of sorts before the arrival of Kaia's towering figure sends them scattering.

LINKS TO ANTARCTICA:

Inspired by my science team's encounters with penguins who came to greet us at our Cape Evans campsite.
This is a regular occurrence in the field.

PRODUCTION DESIGN NOTES:

The penguin gang costumes strongly draw inspiration from Japanese streetwear, being surreal, edgy and eccentric. Strong shadows and oversizing create graphic silhouettes that are like the penguins they represent - they have a playful, inquisitive attitude. I describe them as confidently insecure, like boisterous misguided teenagers. There is a strong black and white colour theme with striking makeup.

Acknowledging my limited budget, I devised their look so that it could be sourced at costume companies and designed the final looks through a hands-on assemblage. Makeup was developed in collaboration with makeup artist Renée McCarthy.

To help the dancers develop the choreography, each penguin was given a unique personality that the dancers interpreted through movement.

In the full-dome production of Where Memories Sleep these eccentric characters appear mostly as silhouettes with only glimpses of them in full makeup. In future productions, they may perform as live dancers moving in and out of the glacier set.

Let's face it...
penguins look badass!

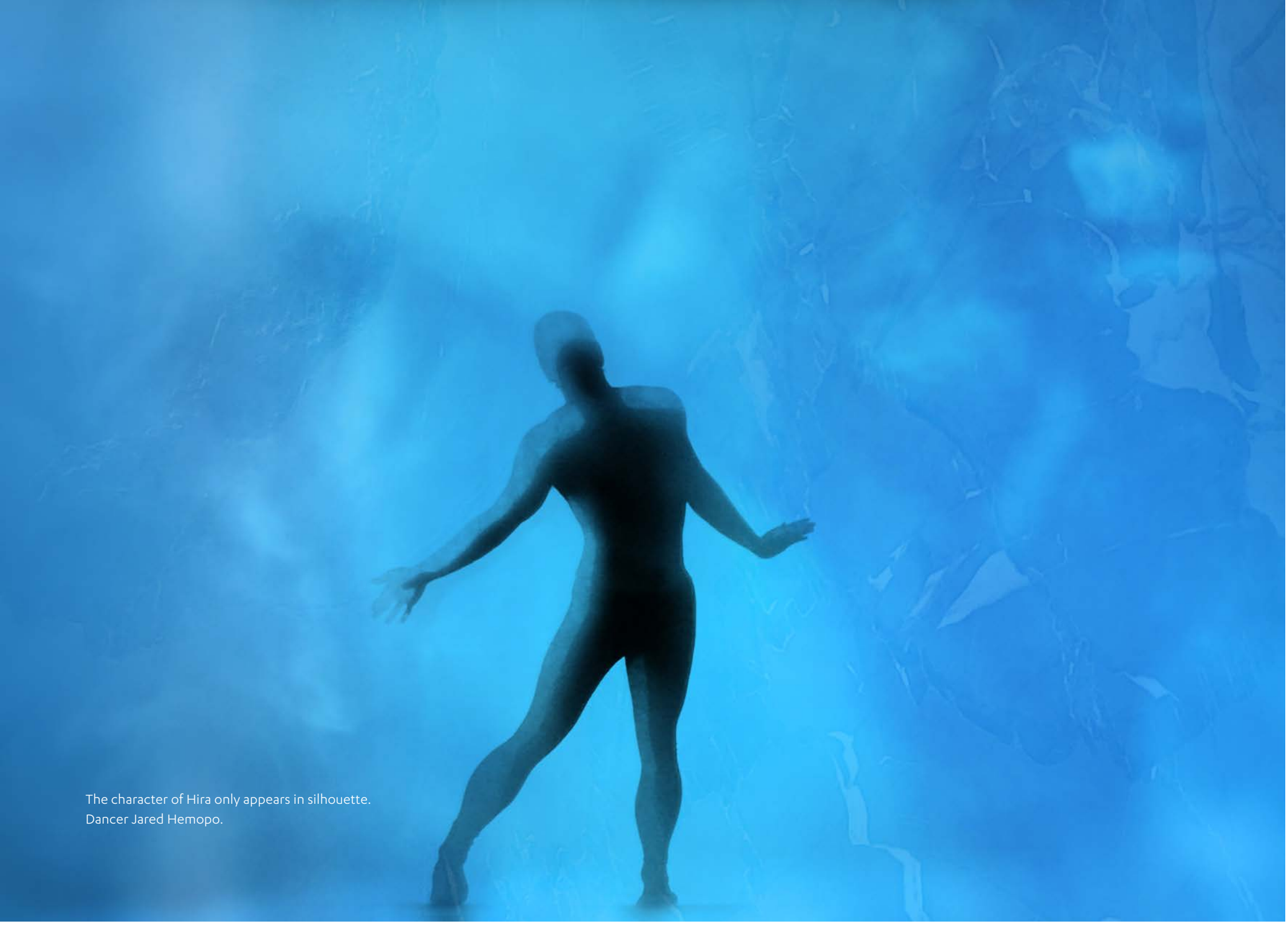
The full set of penguin costumes. Each dancer was briefed to have a distinct personality to aid in choreography and character development.

Connor Masseurs

Jared Hemopo

Zaniah Bettany

Toa Paranihi



The character of Hira only appears in silhouette.
Dancer Jared Hemopo.

Hira

CHARACTER DESCRIPTION:

Hira is Kaia's son. Disguised as a seal, he watches the interaction between Si and his mother from afar. Captivated by Si's beauty, he transforms himself into human form and seduces her with his graceful dance.

Si is tempted to stay with her new love but, with the cold darkness of the winter approaching, she must leave.

Hira is heartbroken and sings a song of desire so beautiful that it lights the winter sky until she returns the next summer.

And it is his song, transformed into ribbons light that we see in the sky above Antarctica each winter.

LINKS TO ANTARCTICA:

Weddell seals regularly accompany dive teams in Antarctica. They gracefully move in and out of view, watching the divers under the ice. Even when they cannot be seen their song, a hybrid of whale and bird song can continuously be heard. While working with audio recordings of the seals, I was struck by the similarity between spectral frequency displays of the sound and the Aurora Australis, which lead me to the concept that they were the same (of course the Aurora are actually caused by solar wind in the atmosphere).

In this production, Hira represents the alluring attraction of Antarctica which regularly seduces scientists to "winter over".

CULTURAL AND SOCIAL INFLUENCES AND CONSIDERATIONS:

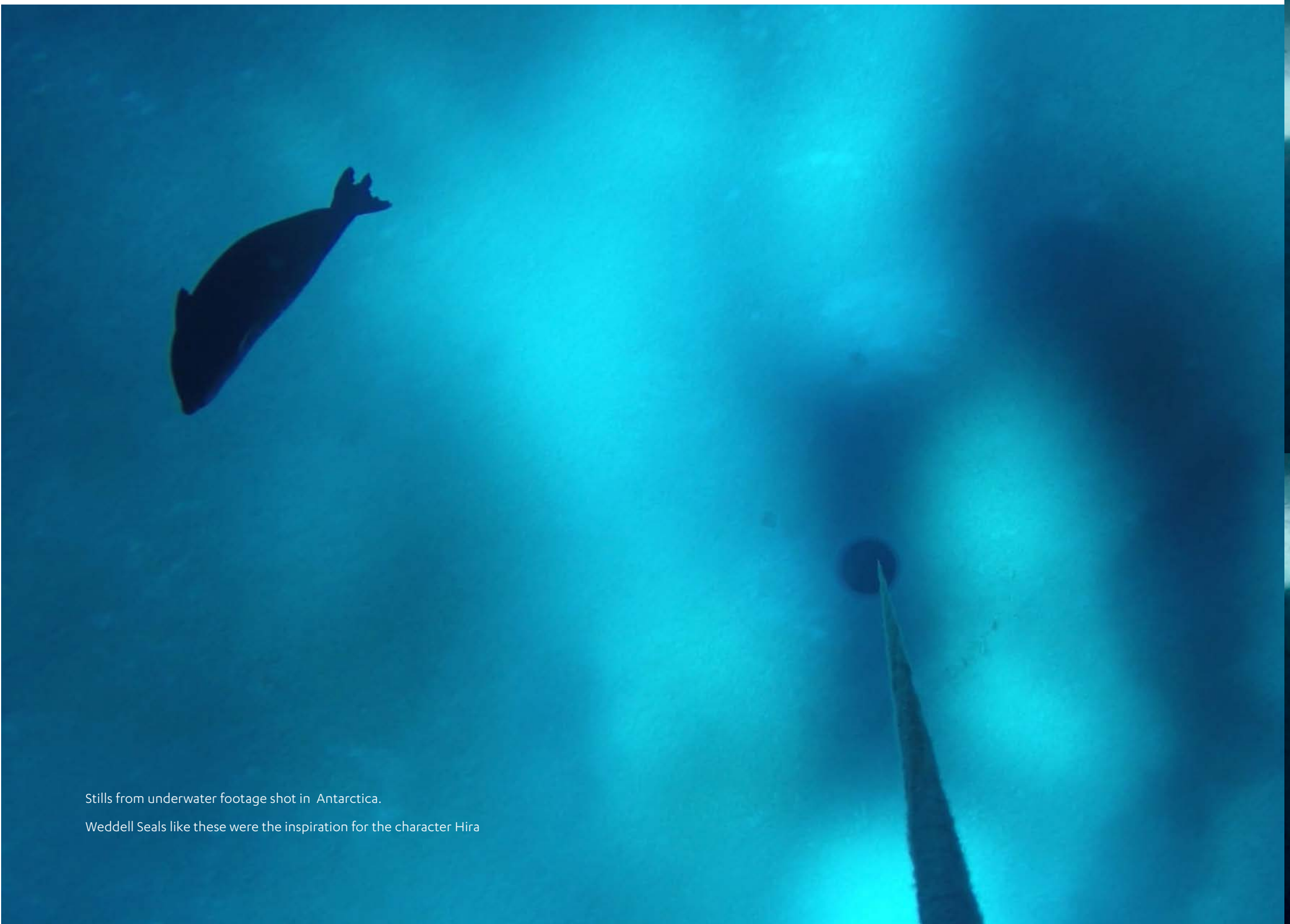
The concept of deities and ancestors being able to transform into animals is common in many cultures including Māori. In Norse, Inuit, Irish and Scottish folklore, especially on the Shetland and Orkney Islands, shape-shifting seals are called selkies (silkies, selches). Although tales vary, in many legends these creatures could remove their seal skin and move on land in human form. Selkies were known for their seductive beauty causing humans to fall in love with them and hide their seal skin to force them to stay. Although the tales were usually centred around female selkie, there have been recent reinterpretations that role-reverse the genders (Márki, 2017).

PRODUCTION DESIGN NOTES:

Hira is beautiful, graceful, supple, lithe and seductive. Appearing only as silhouette his costume is minimal - just tights on a suitably built dancer.

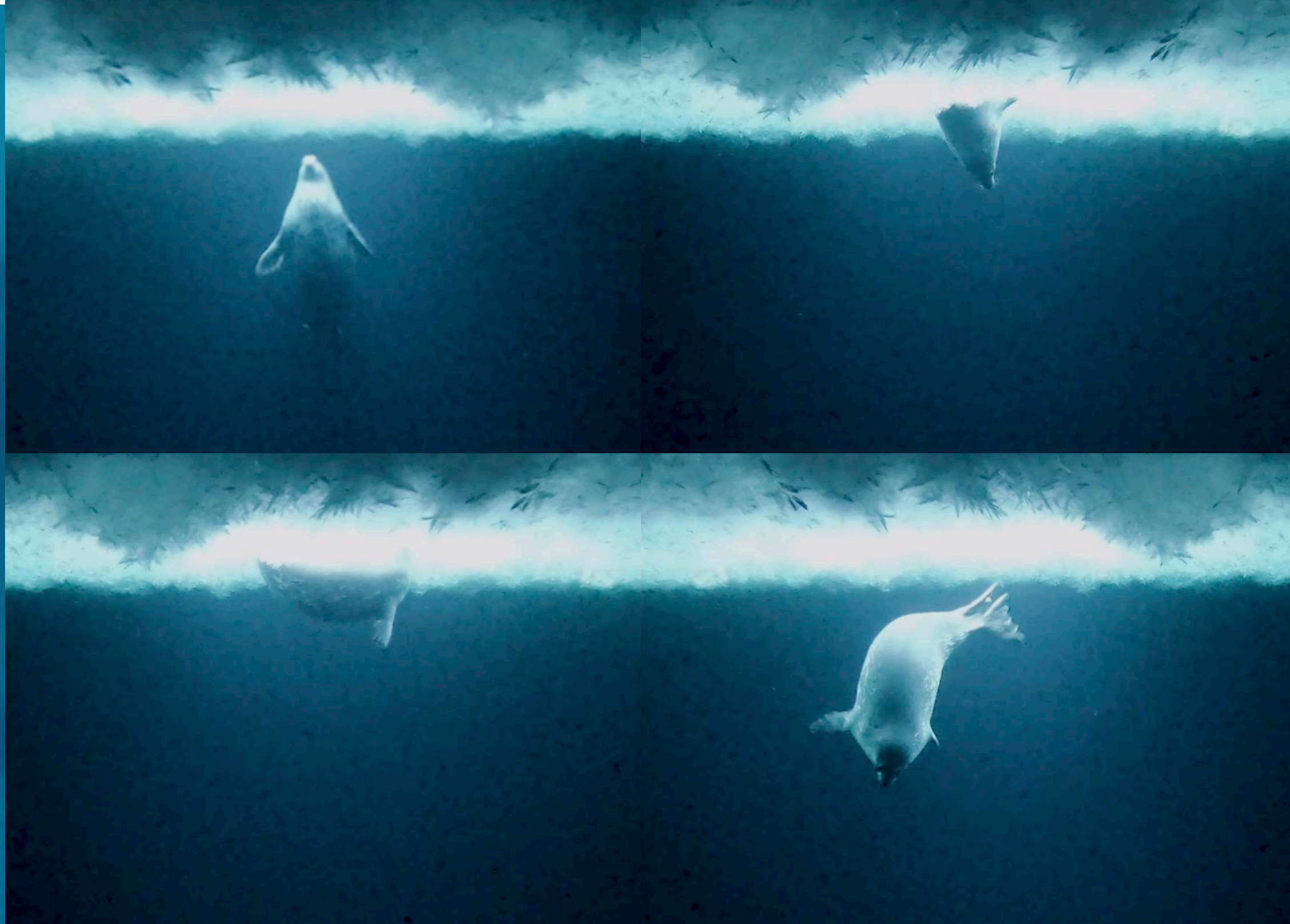
The depiction of Hira in seal form is taken from footage shot under the ice; his song is a composition created from recordings of seals also made in the field.

Testing the lighting concept for Hira



Stills from underwater footage shot in Antarctica.

Weddell Seals like these were the inspiration for the character Hira



The core logo has a dynamic tyopgraphic approach reflecting the aesthetic of the production

BRANDING AND MARKETING

NAME RATIONALE

The production's title "Where Memories Sleep" refers to one of the core scientific communication drivers - memories sleeping = the data from ice core sampling (Nichol 2009) , while not revealing the project's true Antarctica communication objective until required. By starting with "where" the name implants the notion that the installation is about a place while the notion of "memories sleeping" has a fantastical implication.

GRAPHIC DESIGN APPROACH

The confident clean lines and minimalist colour palette from the production design extend through to the marketing material. Centred around a set of character-lead photographic images, the overarching style sits comfortably with the prevailing zeitgeist of contemporary entertainment posters - albeit with the continued influence of the Japanese design style elsewhere in the production.

The strong lines of the glaciers form a background for moody portraits of the dancers that are contrasted with the crisp, almost brutal typographic approach.

There is no confusing these as traditional science communication - this is confident contemporary dance promotion.

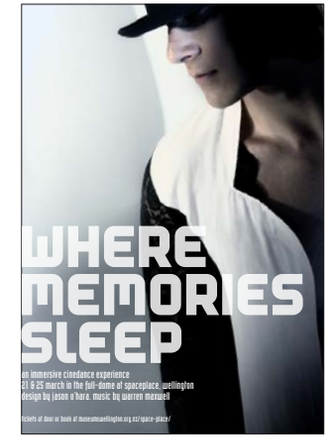
MARKETING

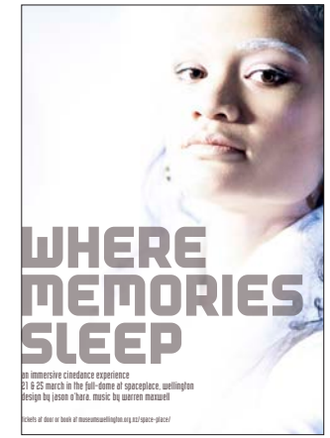
Marketing the project has two main strategies.

Mainstream media will find the innovative approach, Antarctica backstory and high profile of Warren Maxwell appealing and the project's primary sponsors (Antarctica New Zealand, Massey University etc.) have an invested interest in maximising this attention. While this promotion is good, it may not engage the project's target audience.

Targeted marketing will take the form of social media adverting and posters both placed to engage the desired audience (e.g. general entertainment promotions, universities and dance schools).

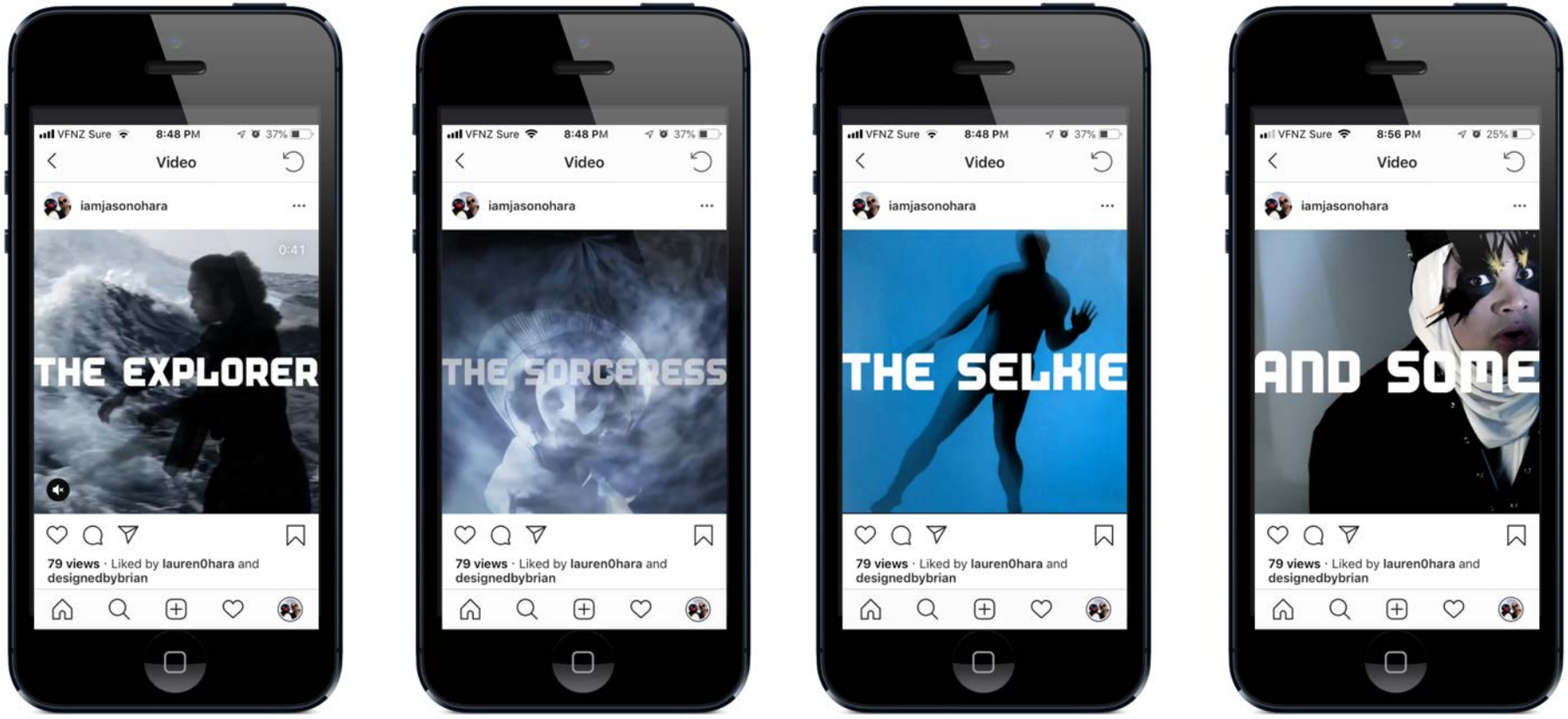
These targeted media promote the work as entertainment with little or no mention of the Antarctica backstory. The messaging focuses on the proposition of an "immersive cinedance experience" and is fronted by the character-lead hook "The explorer, the sorceress, a selkie and some badass penguins". The tone of voice is colloquial and confident. Although the term "cinedance" is not widely used, informal tests revealed it's meaning was self-evident. Similarly, the term "selkie" intrigued many and often resulted in a quick Google search - a form of engagement in its own right.

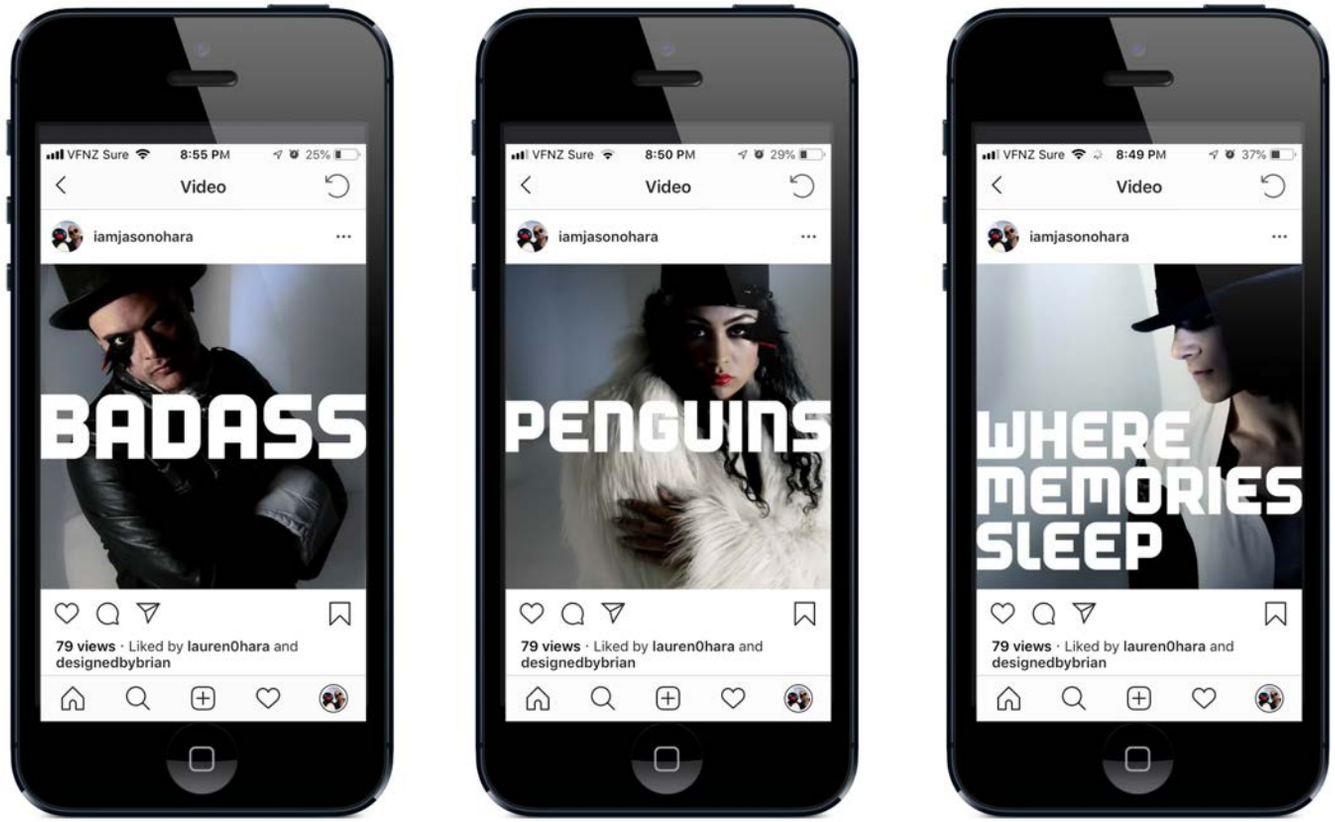




Stand alone posters will be distributed to universities and dance schools throughout Wellington.

They carry the same character-centric imagery as the social media ads.


VFNZ Sure 8:48 PM 37%
Video
iamjasonohara
0:41
THE EXPLORER
79 views · Liked by lauren0hara and designedbybrian
VFNZ Sure 8:48 PM 37%
Video
iamjasonohara
THE SORCERESS
79 views · Liked by lauren0hara and designedbybrian
VFNZ Sure 8:48 PM 37%
Video
iamjasonohara
THE SELKIE
79 views · Liked by lauren0hara and designedbybrian
VFNZ Sure 8:56 PM 25%
Video
iamjasonohara
AND SOME
79 views · Liked by lauren0hara and designedbybrian

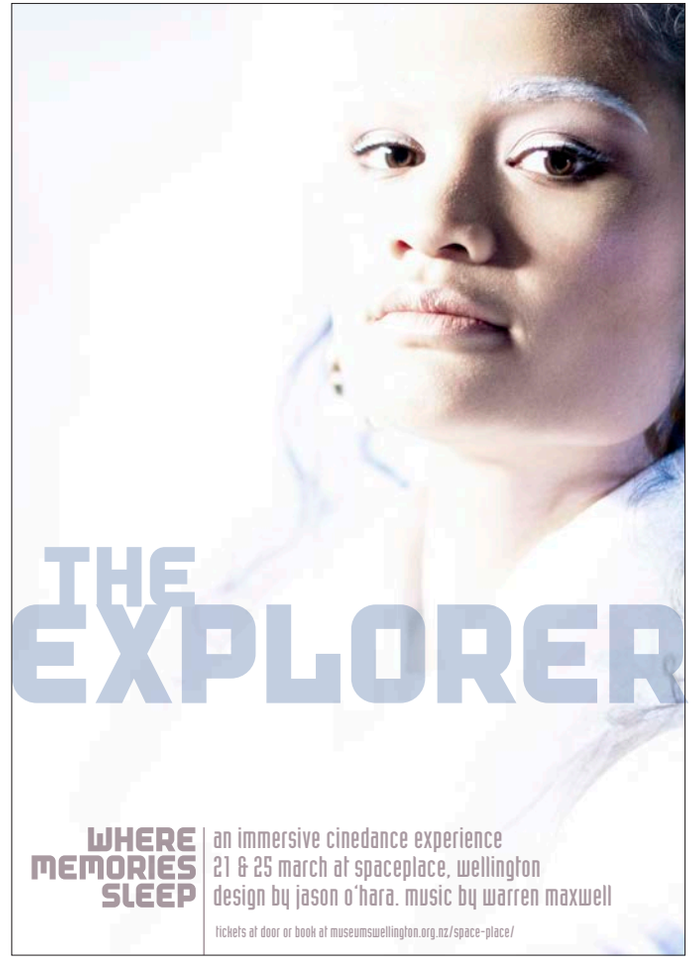


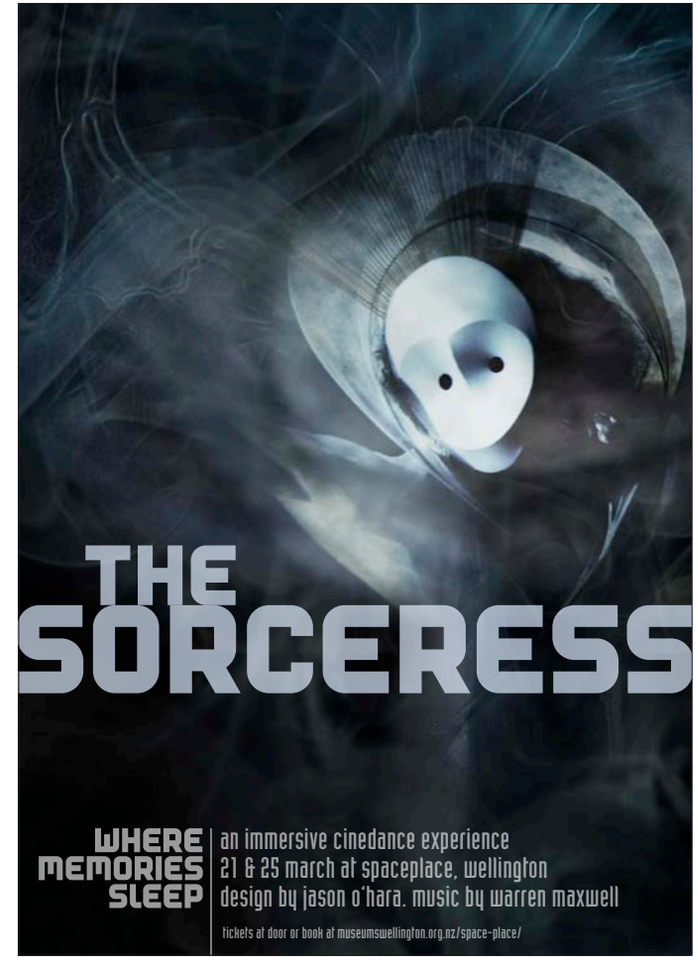
Screen captures from a social media video promoting the performances.

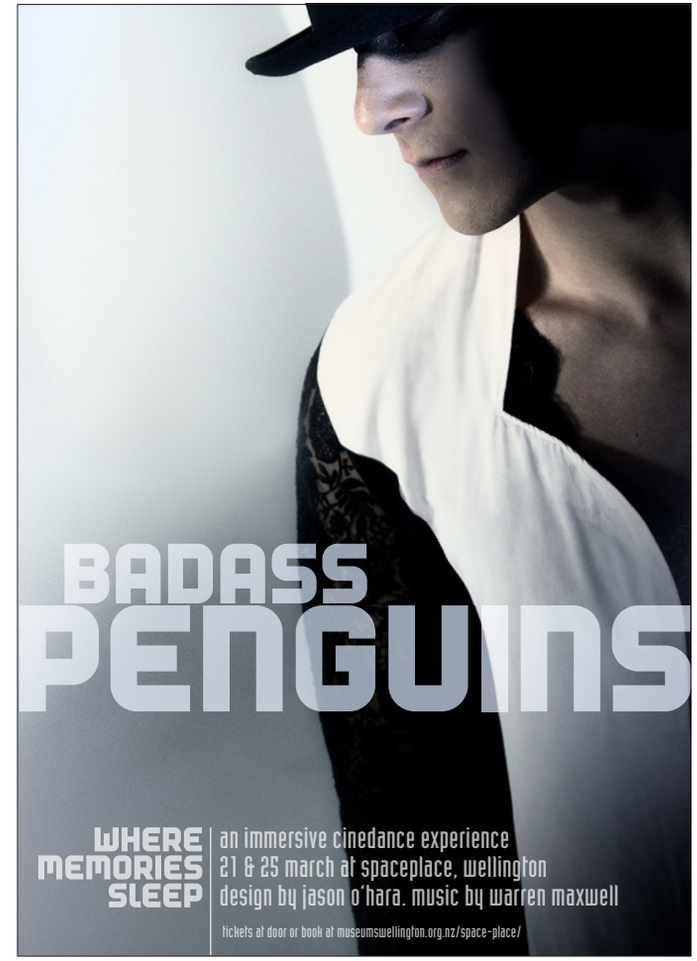
They clearly demonstrate the character-lead promotional concept and use of colloquial language.

A version of the same video can be embedded in websites.

See this video at https://vimeo.com/316634202


THE
EXPLORER
WHERE
MEMORIES
SLEEP
an immersive cinedance experience
21 & 25 march at spaceplace, wellington
design by jason o'hara. music by warren maxwell
tickets at door or book at museumswellington.org.nz/space-place/


THE
SORCERESS
WHERE
MEMORIES
SLEEP
an immersive cinedance experience
21 & 25 march at spaceplace, wellington
design by jason o'hara. music by warren maxwell
tickets at door or book at museumswellington.org.nz/space-place/



Promotional poster series to be used as a group or in close proximity to each other


THE LEGEND
SPIRATION

INTRODUCTORY DOCUMENTARY AND BOOKLET

To enhance their understanding and enjoyment of the production, the characters, inspiration and indicative plot are introduced to the audience before they enter the main performance space.

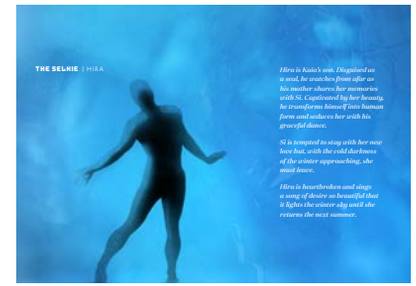
On arrival at the venue, patrons are given a 'program' in the form of a small booklet. Patrons are actively encouraged to read it before the performance by staff as an enhancement to their enjoyment of the experience. Designed to be read front-to-back and back-to-front it effectively has two covers - "The legend" and "Inspiration". It outlines the plot of the Where Memories Sleep myth by introducing the characters and the elements of the Antarctic experience that inspired them.

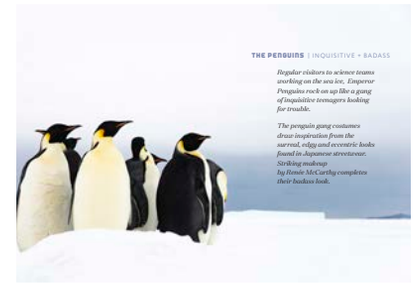
Sized to encourage easy pocketing and taking home they also become a device to promote post-performance exploration of Antarctic science and telling others of the experience. The more they say and do, the better primed they become to future Antarctic messaging.

The performance itself opens in the foyer outside the full-dome. Here the audience is shown a very brief documentary video which contextualises the project's Antarctic inspiration and key science message before inviting the audience to join us in a magical alternative word.

On the screen in the foyer, the audience sees me drop a camera from the surface world under the ice in Antarctica. As they are ushered in, they find the same video transports them under the sea ice by being projected on the dome. This gives the audience time to settle before the video transitions to the primary production through the vehicle of a stick map appearing where the divers enter the underwater world.

In the opening scene of the legend sequence, the protagonist, is seen as a pre-recorded video before transitioning to a live dancer on her arrival in Antarctica. This plays with the audiences relationship with Si and place - effectively the audience is already in a foreign world waiting for her to join them. In the video, she appears superimposed on a representation of a Polynesian stick map. This early form of navigational guide represents the character's desire to explore the bounds of her known world - a world that disappears when she is caught in a storm.





The glacier set during choreography ready for rehearsal. A static silhouette representing the live dancer (on left) was used during blocking and projection mapping.

PROJECTED VIDEO

Principally video content for the project consists of three layers; live action documentary footage shot in Antarctica providing an implicit link to the science; a textural background layer also based on a material shot in the field; and silhouetted dancers telling the story in conjunction with live dancers (in this premier installation one live dancer).

Both the documentary and background textures were constructed in post-production with no new footage required to be shot. I storyboarded the various scenes roughly and produced an animatic to brief the dancers.

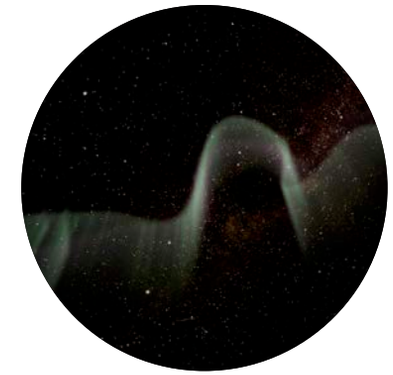
Throughout the full-dome production, I play with the relationship between the audience and cast. Dancers are regularly projected at a minimum of life-size and in intimate proximity to the audience, immersing the viewer in the narrative. By positioning the live dancer playing Si in the midst of the audience, a strong human connection between the character and the audience is created. Mythical characters are distanced by appearing behind the fabric of the set or at a dramatic scale on the dome above.

Treating the mythical creatures primarily as silhouettes leaves room for the imagination of the audience and allows the rules of physics to be easily broken in editing - the dancers change scale, repeat movements and defy gravity as mythical creatures should.

Layering and repeating forms are reoccurring themes in the cinematic treatment, adding to the otherworldly feel of the production.

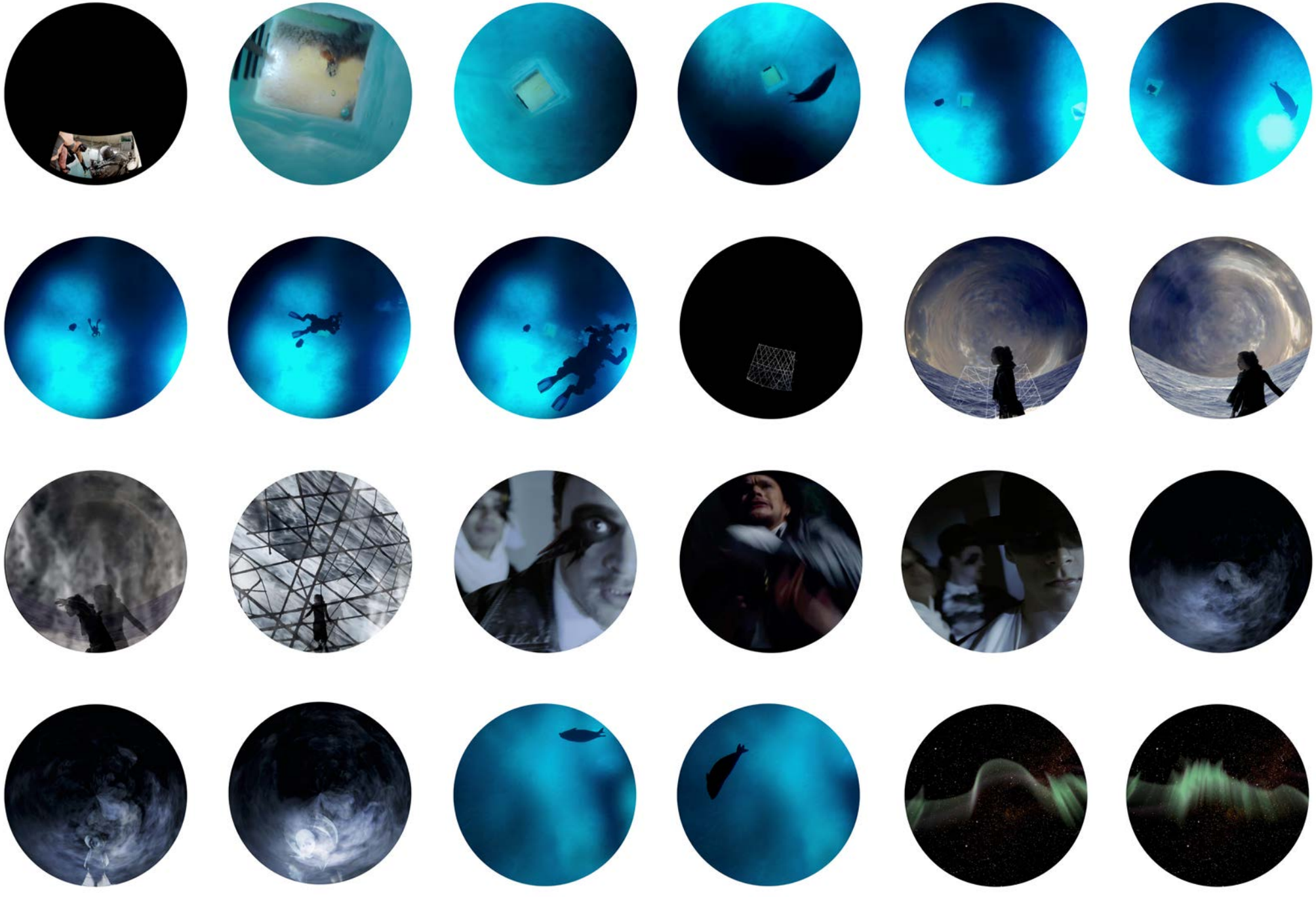
In the closing scene, Hira's song lights the dome as the Aurora. This is the only entirely computer-generated element in the production. I commissioned my son Ruben to create the code to create a sound-modified visualisation as expressions in Adobe After Effects which I then modified, layered and composed to create the final projection.

A single-channel composite of the projections can be seen at https://vimeo.com/314595449



The only completely computer generated element in the production was the representation of the Aurora which reacts to the music.

I commissioned Ruben O'Hara to develop the core code for this in After Effects. I then refined and added manual animation over this for the final result.



Screen captures from the dome video.

Projecting onto the dome has several technical challenges including distortion and allowing for light-spill around the surface.












Screen captures from the glacier set.

Two short-throw projectors were mapped onto the surface using QLab software.

CONCLUSION

Conclusion

The recurring topic of climate change within the scientific study in Antarctica highlights the imminent prospect of its impact on humankind. This threat will create an unprecedented demand for the effective communication of not only evidence but also strategies for mitigation and adaptation.

I conclude that there is significant historical evidence of the successful use of oral storytelling, particularly myth and legend, as a device to pass on historical and educational knowledge. I see great potential for storytelling traditions to be revisited as a creative communications device when attempting to engage new audiences with topics that they perceive as irrelevant or uninteresting.

However, I believe that in the current information-saturated media zeitgeist, merely having a good 'story' is not enough. To reach new audiences, science needs to proactively seek attention, using human-centred design methodologies to craft communications and marketing strategies to suit specific audiences.

Although not a complete solution to communicating science or creating attitudinal change, strategically conceived sci-art projects such as Where Memories Sleep can contribute to the broader field of Science Communication by introducing and educating a wider public to critical societal issues. I hypothesize that a current perceived gap between "us" (the people) and "them" (scientists) can exacerbate ecophobic tendencies and lead to lethargy and inaction. Long-term, if a closer relationship between science and the public can be established as the "new norm", then the barrier of ecophobia can be subdued, and individual responsibility toward issues such as climate change will increase.

Overall I believe this project has been a creative success. Although the final creative output from this research project is yet to have its public debut, the project is already generating interest from the Antarctica Science community, media and other potential installation opportunities. Anecdotal feedback from these groups and students involved in critiques during the creative process has been very positive.

This research is an excellent start for further investigation with many learnings and massive potential for future manifestations and evolutions. The strategic thinking and methodology is robust and has the potential for application beyond this project.

The research is innovative in three fundamental ways:

- it has been designed from the ground up as a communication device combining human-centred design methodologies applied to storytelling, entertainment and education paradigms to create a holistic experience across all touch-points with the audience.

- the forward-looking modular approach to the design of the narrative elements enables the production to be reconfigured to suit a wide variety of installation opportunities

- the dome performance itself successfully explores the close proximity of the live performer, projected dancers and audience. This creates an intimate relationship that enhances the storytelling by immersing the audience within the narrative.

Professor Ian Hawes collects data from instruments under the sea ice in Antarctica.
His research may provide insights into climate change that have ramifications on a global scale.

Works cited

Amery, M. (2012, December 5). Artistic journey through Kermadec region barely treads water. Dominion Post.

Bates, C. (2007). What is a Brand? Retrieved January 17, 2019, from http://www.sideroad.com/Branding/what_is_brand.html

BBC. (2019). The Arts Hour - David Attenborough - BBC Sounds. Retrieved January 14, 2019, from https://www.bbc.co.uk/sounds/play/w3cswq0y

British Design Council. (2009). The Design Process: What is the Double Diamond? Retrieved January 12, 2019, from https://www.designcouncil.org.uk/news-opinion/design-process-what-double-diamond

Campbell, Joseph (1949). The Hero with a Thousand Faces (1st ed.). Princeton, NJ: Princeton University Press. (2nd ed. 1968, 3rd ed. 2008).

Cialdini, R.B. (2012) Science Of Persuasion. Retrieved January 29, 2018 from https://www.youtube.com/watch?time_continue=2&v=cFdCzN7RYbw

Chimero, F. (2011, September 11). The Long, Hard, Stupid Way. Retrieved January 10, 2019, from https://frankchimero.com/blog/2011/the-long-hard-stupid-way/

Committee on the Science of Science Communication. (2017). Communicating science effectively: A research agenda. Washington, DC: National Academies Press.

Crilly, N., Good, D., Matravers, D., & Clarkson, P. J. (2008). Design as communication: exploring the validity and utility of relating intention to interpretation. Design Studies, 29(5), 425–457.

Cross, N (2011) Design Thinking, New York: Berg

Cugelman , Thelwall and Dawes (2009) Communication-Based Influence Components Model. Retrieved September 6, 2017, from http://wlv.openrepository.com/wlv/bitstream/2436/85973/4/Cugelman_%202009_communication-based_influence_components_model.pdf

DANZ: Dance Aotearoa New Zealand. (2015, October 04). Dance Facts The Popularity of Dance. Retrieved January 14, 2019, from https://danz.org.nz/Dance Facts The Popularity of Dance

Dennis, A. (2012, July 13). Mountains - People and mountains. Retrieved January 18, 2019, from https://teara.govt.nz/en/mountains/page-5

Ekman, A. (Choreographer). (2017, May 17). RNZB: Three by Ekman. Live performance in St Jame Theatre, Wellington, New Zealand.

Fashion, T. (2017, August 16). Japanese Street Fashion 2017-15 Things You Need To Know. Retrieved January 17, 2019, from https://medium.com/@TokyoFashion/japanese-street-fashion-2017-15-things-you-need-to-know-ab06eabfca39

Frost, D. (2016) Night Flowers. New York,: Merrell

Fry, S. (2018). Mythos. Penguin Books.

Golder, B. & O'Brien, G. (Eds.). (2011). Kermadec: Nine artists explore the South Pacific. Washingtonton, D.C.: Pew Environment group in association with Tauranga Art Gallery.

Grey, D. (2017, July 23). Empathy Map. Retrieved January 16, 2019, from https://gamestorming.com/empathy-mapping/

Hartwig, G (2001) New Media Documentary, Explorations in the Changing Form.Theory and Practice of Documentary. Retrieved January 16, 2019, from http://www.gunthar.com/gatech/digital_documentary/Database_Documentary.pdf

Hurley, F. & Tamiko, R. (2001). South with Endurance: Shackleton's Antarctic Expedition 1914-1917: The photographs of Frank Hurley. London: Bloomsbury.

Issey Miyake, I (2012) Pleats please. Koin: Taschen

Kelly, J. J. (Director). (2016). Continent 7: Antarctica [Television Series]. USA: National Geographic Studios.

King, D. N., & Goff, J. R. (2006). Māori environmental knowledge in natural hazards management and mitigation. Retrieved February 23, 2019, from https://www.niwa.co.nz/sites/niwa.co.nz/files/niwa_report_akl2006-055.pdf

Lee, A. (Director). (2012). Life of Pi [Motion picture]. USA: 20th Century Fox.

Leeming, D. A., & Sader, M. (1997). Storytelling Encyclopedia: Historical, cultural, and multiethnic approaches to oral traditions around the world. Phoenix, AZ: Oryx Press.

Marbrook, A. (Director). (2018, February 23). Waka Odyssey. Live performance in Wellington Harbour, Wellington, New Zealand.

Mark, J. (1994) Masks. The Art of Expression. London: The British Museum.

Márki, Z. (2017). Seal Skin and Language – Contemporary Adaptations Of The Selkie Wife Tale. Retrieved January 9, 2019, from http://americanaejournal.hu/vol13no2/marki

McKenzie-Mohr, D. (2011) Fostering Sustainable Behaviour Gabriola Island, BC : New Society Publishers

Martinez-Conde, S., & Macknik, S. L. (2017). Opinion: Finding the plot in science storytelling in hopes of enhancing science communication. Proceedings of the National Academy of Sciences, 114(31), 8127-8129. doi:10.1073/pnas.1711790114

Morris Hargreaves Mcintyre (June 2012) Culture Segments New Zealand 2011 (report prepared for Creative New Zealand), Wellington, New Zealand: Creative New Zealand

Mitchell, T. B., & Wood, K. (2016). Scriptwriting dance in The Oxford handbook of screendance studies (D. Rosenberg, Ed.). New York: Oxford University Press.

Myers, S. (June 10, 2017) Archetypes: The Wizard of Oz (Part One) Retrieved January 31, 2018, from https://gointothestory.blcklst.com/archetypes-the-wizard-of-oz-part-one-518bc6ead186

Nichol S. (10 March 2009) Greenhouse gases and climate sensitivity - insights from ice cores. Retrieved January 31, 2018, from https://www.niwa.co.nz/atmosphere/research-projects/greenhouse-gases-and-climate-sensitivity-insights-from-ice-cores

Noble, A., Wedde, I., & Porter, G. (2011). Ice blink: An Antarctic imaginary. Auckland, New Zealand: Clouds.

O'Connor, G. (2015). Inland Ice. Retrieved February 21, 2019, from http://gabbyoconnor.squarespace.com/#/inland-ice-1/

O'Connor, G. (19 June – 18 September 2016). Studio Antarctica [Installation]. Pataka, Porirua, New Zealand.

O'Keefe, D. (2002) Persuasion Theory & Research (Second Edition) London: Sage

Opinions Market Research Ltd (2016) Focus Group Analysis to support Antarctica New Zealand Communications Strategy Report. Prepared for Antarctica New Zealand by opinions Market Research Ltd

O'Shaughnessy, M., & Stadler, J. (2012). Media and society (5th ed.). Oxford University Press.

Parrish, S. (2017, October 16). The Trojan Horse: How Marketers, Retailers, and Artists Conceal Their True Intents. Retrieved February 10, 2019, from https://fs.blog/2017/07/trojan-horse/

Reed, A. W., & Calman, R. (2004). Reed book of Māori mythology. Auckland: Reed.

Ries, A., & Trout, J. (2001). Positioning: The battle for your mind. New York: McGraw-Hill.

Rynia, M. (2015, May 10). TIE - contemporary dance performance. Retrieved from https://www.youtube.com/watch?v=MJFvQSDRWbE

Smith, A., & Anderson, M. (2018, September 19). Social Media Use 2018: Demographics and Statistics. Retrieved January 14, 2019, from http://www.pewinternet.org/2018/03/01/social-media-use-in-2018/

Smith, S (1904) Hawaiki: The Original Home of the Māori, With a Sketch of Polynesian History, Christchurch, New Zealand: Whitcombe and Tombs.

Sobel, D (2008) Childhood and Nature – Design Principles for Educators, Portland, Maine. Stenhouse

Sorgenfrei, C. F., Zarrili, P. B., Williams, G. J., & McConachie, B. (2006). Theatre Histories: An Introduction. London: Routledge.

Sparknotes. (n.d.). Alice's Adventures in Wonderland. Retrieved January 17, 2019, from https://www.sparknotes.com/lit/alice/

Triadisches Ballett von Oskar Schlemmer - Bauhaus (Best Quality). (2013, March 07). Retrieved January 18, 2019, from https://www.youtube.com/watch?v=mHQmnumnNgo

Trimingham, M. (2011). The Theatre of the Bauhaus. New York: Routledge.

Ughetti, E., & Britton, C. (Directors). (2018, November 28). Polar Force. Live performance in Arts Centre Melbourne, Melbourne, Australia.

Wannan, O. (2015, September 11). Traditional Māori myths may hold clues to natural hazards. Retrieved February 23, 2019, from https://www.stuff.co.nz/science/71971522/null

Wray-Lake, L., Flanagan, C. A., & Osgood, D. W. (2009). Examining Trends in Adolescent Environmental Attitudes, Beliefs, and Behaviors Across Three Decades. Environment and Behavior, 42(1), 61-85. doi:10.1177/0013916509335163

Glossary

actuality | a form documentary that attempts to record an unbiased portrayal of reality.

animatic | a simple animated form for storyboard used to test timing and narrative flow.

anthropomorphism | the attribution of human characteristics or behaviour to an animal.

cinedance | a dance composition devised for, or in tandem with, moving image or film.

ecophobia/ecophobic | a feeling of powerlessness to prevent cataclysmic environmental change

experience design | can have various definitions for different design disciplines. In this context, it is a holistic approach to the design of an end-user's experience or relationship with a situation, installation or entity. It incorporates and guides the user's desires, needs and interactions across multiple touchpoints or moments.

full-dome | an immersive dome-based video projection environment often used as planetariums.

human-centred design | a design methodology that focusses on the end-user as the starting point of the problem-solving process and continually references the user during the evolution of the solution.

kaitiaki | a guardian or custodian within the Māori world view.

kuia | a Māori term for grandmother or female elder.

onboarding | the process of integrating or introducing a person to a new concept, situation, process or product.

scenography/scenographic | the design of theatrical sets or multimedia installations.

Selkie | mythological beings capable of changing from seal to human form by shedding their skin.

stick map | navigational aids used by early Polynesian navigators. Usually made of sticks and shells, they indicate prevailing swell patterns relative to landforms.

zeitgeist | the prevailing or dominant societal norm of any given time sometimes expressed as "the spirit of the age".

APPENDIX

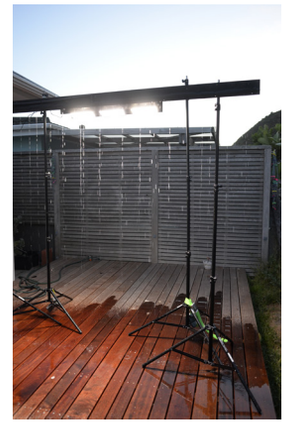

WS
XCU
Dripping oil under car
Look up — Gets on with it.
WTF?
Drips turn into rhythm
Dancing in rain
Gang watches from shadows
XCU
XCU
Full on music
Hiphop!
Water pours down walls behind pipes
XCU
Close ups of feet in water
CU of fish in bin – dry ice mist pours out.
Lift comes down with blue light
Ow!
Ow!!
Ow.
Si
Si now dressed in white
Si plays with bubble
Si + Hira dance
XXXXXXXX

The deleted scene

Mid-way through the production I conceived, shot and did a rough edit of an introduction sequence shot in a parking building. Although this was a massive undertaking, I later discarded this approach for many reasons. Initially, I was attracted by the entirely human-made nature of the parking building constituting an antithesis of wilderness but with a physically had a similar starkness to the Antarctic landscape. I saw this as a robust narrative device to represent the protagonist's journey from the urban to wilderness. I took a more cinematic approach to the sequence thinking that this would reinforce the transition to the very graphic style of the following sequences.

Although I was relatively pleased with all the design, cinematic and dance aspects of this sequence, feedback from students at a critique reinforced my concerns that the narrative had flaws. The critique audience struggled with the abstract nature of the metaphor, and the all-male penguin cast created a perception of an attack on a lone female. I also had discovered the story of Polynesian explorer Ui-te-Rangiora (Smith,1904, p. 171) from which I conceived a much stronger metaphorical connection with Pacifica, and exploration. I decided to discard the parking building sequence - a difficult but sound decision on reflection. Going through this shoot resolved many production design issues, snippets of this footage were used in the final production and elements may be used in future versions of the project.

View a rough-cut of the footage from this shoot at https://vimeo.com/275753276



This spread: Snapshots from the production. Custom lighting and "rain" rigs were made for this scene

The full dance crew during filming in the garage set. The Massey University parking building was rigged with special lighting and plumbing to make it “rain” inside.



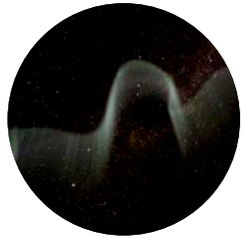



Frames from a rough-cut of the deleted scene

Additional image credits

As previously stated, all images in this thesis and the creative work are the authors unless otherwise stated. The following images are the exceptions:

The star-scape from the Aurora scene of full-dome projection and in the program booklet.
Taken by Anthony Powell at Scott Base, Antarctica. Used with permission.

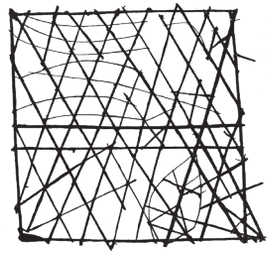


The computer-generated Aurora used on the full-dome projection and in the program booklet.
Core After Effects code was developed by Ruben O'Hara. Commissioned work, used with permission and extensively modified by the author.

Ice core drill sequence used in the documentary video.
Supplied with permission by Dr Hinrich Schaefer and Dave Allen, NIWA

Ice core drill image used in the program booklet.
By Katja Riedel, NIWA. Used with permission.

Aurora timelapse used in the documentary video.
By Jonny Harrison. Used with permission.



Stick-map graphic used on the full-dome projection.
Based on a stick map image from Smith, S (1904) Hawaiki: The Original Home of the Māori, With a Sketch of Polynesian History, Christchurch, New Zealand: Whitcombe and Tombs. Published in 1904. Out of copyright and heavily modified.

Some of the Kermadec seas footage used in the projections.
By Bruce Foster. Used with permission.

Ui-te-Rangiora illustration used in the documentary video, thesis and program booklet.
By Ruben O'Hara. Commissioned work. Used with permission.