re:making
making as a continual remaking of space
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Declaration
I certify that except where due acknowledgement has been made, the work is that of the author alone; the work has not been submitted previously, in whole or in part, to qualify for any other academic award; the content of the thesis is the result of work which has been carried out since the official commencement date of the approved research program; and, any editorial work, paid or unpaid, carried out by a third party is acknowledged.

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This set of images illustrate the models of ‘Projct Library’. The first three images depict a model made in the early stages of the design process. This is a model for design intention, employed to explore the effect of a form in space relative to light and shade. The four black and white images depict the model of the design intention built after the design process, and simply intended to represent the developed design.
Introduction

The act of making challenges ideas through fabrication and the laws of reality that are part of becoming.

This research explores the making of physical models as a design process where that act of making ‘models for’ design intention is itself a rich field of speculation. These models for design intention are different to the models of design intention as they are less a finished and singular object, and more an instrument for thinking. The aim of this research is to explore the qualities of models for design intention through an engagement with the landscape in order to understand making as a transformative and emergent process of space, time, material, technique, and the role of the observer.

Making for design, the model as idea, seeks to both test and provide opportunities for the convergence of forces and relationships to be created and emergent. Fundamental to this notion is an understanding that the act of making is itself a continual re-making process. The reciprocity invoked by this action engages a rich field of criteria which are potent because of their schizophrenic nature.

This paper will discuss my research through a number of projects and esquisses that have been explored during the course of this research which demonstrate the development of my position of making as a continual re-making of space.

Representation

Landscape Architects and Architects have adopted a range of representation modes as their language of design. We are removed from the medium of landscape relying instead on the actual work of building and construction of our projects to be done by others. This notion is reinforced by the fact that an unmediated access to the medium of landscape and architecture is untenable particularly in light of the fact that ‘the instrumentality of modern construction procedures leaves little room for emotive or tactile involvement’. This position of displacement is empowering in a number of ways. Firstly, that by embracing representation as the medium of design we also engage with the potential of abstraction. Secondly, the making of representation is analogous to the actual construing of built landscapes and architecture, as James Corner writes when discussing the making of drawings:

‘As a vehicle of creativity, drawing is a highly imaginative and speculative activity, entailing both spontaneity and reflection. It first involves the making of marks and the ‘seeing’ of possibilities. Such work is both imaginal and theoretical, making images and recording spatial and tactile qualities through a process of association’. Thirdly, is that the construction period (contract administration) of the project by others at a scale of 1:1 in the world may be viewed – if sometimes distressingly so – as a continuation of the making process and therefore open to further design development.
This model was made during the early stages of my undergraduate degree. It demonstrates the development of my craft of making, and is also a good example of a model of a design intention through its singularity to demonstrate the architecture of M.C. Escher.

I managed a team of people to make this model of the proposed design of Federation Square, Melbourne, Australia whilst in the employ of Lab Architecture Studio. As a description of the design it occupies the position of a model of a design intention.

Made completely in one type of card, this precisely made model embraced performance and personal identification via its physical handling of its interchangeable parts.
Singularity

The importance of making representation was anathema to me in the early stages of my undergraduate degree. Instead, the making of the drawing or model was a means to an end, an end that was forced to conform to the ‘idea’ in my head. The resultant drawings and models were singular in their intention and their communication. Squeezed of any life the representations were therefore devoid of richness that they might have brought to the project. It is also important to point out that these drawings and models were a singular event without iteration, as if plucked out of the ether. Salvador Dali purportedly grew his moustache like antennae for this specific reason. Rather than entering a discussion about what an idea is and where it may come from, the importance here is that the idea was not allowed or encouraged to be transformed by challenging or developing its condition through the medium of representation and became an illustration rather than an exploration of an idea.

Models of this nature might be what Ranulph Glanville refers to as ‘models of design’. These models often occur after the design process, simply brought into existence to prove or heroise the design. They act as surrogates for the actual 1:1 built project, yet they themselves remain a simplified description of the project. They attempt to make the model fit the idea as it might be in the world, by striving to simulate this condition through the miniature. This is a hopeless case for the very fact that the model of the design can never be the actual work itself. These models, more often than not, encapsulate the entire project at common scales such as 1:100 which result in the production of small models, and are dominated by form rather than function. This is not to say that these models are bereft of other uses or generated effects; the play of light and shadow; the relative scale and organisation of parts in the whole relative to the inherent third dimension; the unforeseen gaps in a design missed in the making of the drawings; and the usual ‘oh that’s what it looks like’ factor. This suggests that models don’t necessarily have fit into to the binary position of either ‘models for design intention’, or ‘models of design intention’, but occupy a position in the field created by these polar opposites. My position is that if greater consideration is given to the making it will shift the model closer towards performing as a projection of an idea and therefore act as a useful design tool rather than only operating at the singular level of the ‘toy town’ model.

Models ‘of a design intention’ are often commissioned as ‘presentation models’. In this function they facilitate a reading of the project in a manner more readily grasped by audiences (clients, city representatives, etc.) who might be less conversant with other conventions of representation such as drawn plans and sections. Unlike the heroic image or illustration of the project the model demonstrates the whole project. In this manner it offers a multitude of heroic views simultaneously. The model may be somewhat singular, and therefore itself limited in its projection of the designed project, yet it still has a role in the entire representation. The project may now be seen to hover between the variable representations employed, such as the model, the drawings, the text, and the verbal mediums of representation.

Designers will encourage the ritual dance around larger models pointing out the most powerful aspects of the model, and therefore of the design. This often involves crouching down to bring your eye to the height of a person in the model (approximately 15mm in a 1:100 model) looking at the project. In this manner the viewer can be a person in the model, and stand back to hover over the model like a god surveying the future. It is interesting to note that the more abstract model constructed for design can have the adverse effect of scaring an audience who might not be able to read or grasp it’s intention. This fact points to the notion that abstract experimental makings for design might exist only as a tool for the designer’s eyes.

Smaller models can be physically handled. This allows the viewer to be god-like, engage the model (and therefore the project) tangibly, and at the same time engage in a toy like fascination of the model. The toy notion is an interesting and powerful characteristic that can not be ignored. It begins a process of investing the model with meaning or a soul, the model therefore becomes more than an object itself. In Japanese culture toys, more often soft toys, are loaded in this manner to such an extent that they are deemed to have a life of their own. One of the fascinating results of this is that they become difficult for the owner to dispose of because they are understood to contain life. This nature is obviously heightened by the attributes of the object having discernable human qualities. The Orkney Gallery Project model that I made whilst in the employ of Ushida Findlay Architects employed this tactile embrace of the model through the construction of elements of the whole which could be passed around amongst the audience. These elements were engaged in physically and personally and then placed back into the larger contextual model. The effect was that each member of the audience believed themselves somehow in the model of the design, and part of the project itself.
This set of white card models were made using a flat bed cutting machine. Having built the first model it prompted the making of three further iterations that amplified the topographic variable. This was a simple thing to do because of the technology employed.

Le Corbusier and Jeanneret, Plan Voison proposal for Paris 1925. The hand of Le Corbusier hovers over the model in a god like repose pointing towards the new business centre of the city.

Rem Koolhaas handles his ‘white’ model of a design for a concert hall in Porto, which began its life as a design for a house. The idea, like the material, remains pure.

The white paper model was tool for thinking about the variable flow of a site.
Historically many of these models were monochromatic, and more often than not were entirely white. The alternative to white was timber, in solid or veneer format, which essentially evoked the same monochromatic condition as the white model. ‘Condition White’ represented the idea in its most pure form. This pristine condition goes further to embodying the almost spiritual pureness of the designed idea. The model is now more than a re-presentation of the project, it is an ideal!

To make a white model is often the default condition not only because of the classical place that they occupy in a designer’s mind, but also for the obvious reasons that white material, be it paper or card, is prevalent and affordable, yet it has other traits too. The model and the making of the model allow the maker (who is also the reader) to easily project their thoughts onto the surface of the material, the forms determined, and the spaces created. The blank canvas is then able to embrace all projected imaginations by showing none. Gilles Deleuze writes of Francis Bacon’s sense that the blank canvas is fact full not empty, and that the act of painting intercedes with fullness, ‘the painter is already in the canvas, where he or she encounters all the figurative and probabilistic givens that occupy and preoccupy the canvas’.5

White models made as a part of a design process, rather than after it’s so called completion, may for the same afore mentioned reason be seen to delay a design outcome. As it remains it a constant state of interface, i.e. projecting and receiving one’s imaginations, it becomes less of an object of a singular idea or pure form, and instead can promote further enquiry.

The completed white model is also able to change the nature of space and time unto itself. By effectively having no material register it has the ability to exist in its own space relative to scale, or scalelessness, and time, or timelessness, by removing itself from the context in which it sits, that of the human relation of 1:1. By removing itself from the table on which it sits, the detritus of the workplace or the person inspecting it, the model is more able to be the idea itself no matter the scale or time. This state of ‘other’ related to space and time can be similarly achieved through the abstract nature of the representation, or by the employment of a base or plinth. The base affectively delimits the space and time on which the model occupies effectively separating it from that of its context.

In recent years the medium of solid acrylic has been employed by practice and students alike. Besides the obvious advantage of the transparent material, e.g. its communication of internal volumes, the material subscribes to this notion of ‘condition white’. The transparent acrylic is able to embrace the afore mentioned qualities of ‘condition white’, but perhaps can go a step further in that its form embraces the semi-viscose nature of the material and can therefore dissolve though itself, and is therefore not restricted to its from. Furthermore, its internal projection can potentially encapsulate a greater degree of ‘fullness’ by the very lack of material presence. Buffed to perfection, the acrylic model may take on jewel like qualities that extend the nature of the pure idea made.

It is interesting to note that models can be made with a variety of materials and techniques that are not themselves white but are then finished in white. However this is achieved, often by painting or covering with a paper veneer, the intended effect embraces those traits of condition white already discussed to varying degrees of success. ‘Condition White’ also applies in varying extents to constructs made or finished in one material, or colour. This is dependant on the properties of the material itself.

**Condition White**

Refer image 05, 06, 09 + 10

Refer image 07 + 08

Refer image 02 + 09

Refer image 04

Refer image 09 + 10
Medium + Methodology

Essentially I am advocating the notion that physical models are themselves a medium of representation, and that the making is the vehicle for the exploration, testing, and generation of design through this medium. It is also important to consider the material role of this medium, and its potential effect on the making. Furthermore, material can not be discussed without also considering the role of technique.

In the same manner that a square is a special type of rectangle, so too ‘condition white’ is a special type of medium. As already discussed, the white nature of these models allows one to mentally project onto the model. This is not to say however that ‘condition white’ exists without material attributes that play a role in its making.

Material properties can be defined under at least two categories of ‘aesthetic’ and the ‘physical’. The aesthetic qualities of a material might be as simple as colour, texture, and tone. The physical qualities of a material might be the consideration of its limits, and behavioural tendency. This basic list of qualities of the aesthetic and physical properties of a material already begin to construct a complex matrix of relationships. An idea made in one material may be transformed, or re-made, in a completely different manner to that in another material. This is a good example of both how the making process has the potential to re-make an idea simply based on the properties of the material employed.

The selection of materials may then be seen to be a critical factor in the making process which may lend itself to existing in a range between the determined and the undetermined. The determined selection will look to assigning an individual material a role within an idea through its aesthetic or physical properties. For example, a timber material might just as easily be assigned to represent a grassy lawn as easily at it would the solid mass of timber. Each of these techniques has two effects. The first affect is the difference in the outcome, but more interestingly for me it is the role of the technique as part of the making process that has the potential to align to thinking through the idea. In this sense of material thinking, how might the act of carving – design by subtraction offer a different perspective to a design process from that of construction by accretion or layering – design by addition. Robert Hughes writes of Constantine Brancusi’s methodology of carving as:

‘His concern was the purity of carving. No other modern sculptor ... addressed himself quite so undeviatingly to how one cuts, rather than models or constructs a form in space, developing a continuous surface that summons one’s attention to the invisible core of the block’

Relative to making by addition, Hughes writes of Mark Rothco’s painting ‘Ochre and Red on Red of 1954, that:

‘His formula ... was a series of colour rectangles, soft edged and palpitant of surface, stacked vertically up the canvas: often divisions and intervals between them suggest a horizon or a cloud bank, thus indirectly locating the image in the domain of the landscape. This format enabled him to eliminate nearly everything from his work except spatial suggestions and emotive power of his colour, and the breathing intensity of the surfaces, which he built up in the most concentrated way, staining the canvas like watercolour paper and scumbling it with repeated skins of overpainting ... that one seems to be peering into the depths of mist or water, lit from within’.

In order to explore the notion of material thinking further through medium and methodology I embarked on a process of making without the initiative of a brief or idea to engage with. This was also important to me as I recognised in my own practice that as I became more skilled in the techniques of making I was once again making models of design, i.e. literal models of an idea, rather than the making of the model acting as a vehicle for thinking through an idea. These singular objects still had other useful effects for consideration, if somewhat limited, but where becoming a precious object that might easily sit in a gallery, rather than acting as a tool for thinking.

‘Project Folly’ began its life simply as the material choice of plaster, a material that I had little experience with, and offered something quite different to my modus operandi.
stage 01. material choice

Casting plaster was chosen as a material that offered unknown qualities and performance. As a white material it was envisioned that it may afford my mental projections as a part of the making process.

stage 02. material + technique consideration

Considering the technique of casting plaster, the simple requirement of a mould became apparent. Considering the relationship between the mould (condition 01) and the cast material (condition 02) I wondered about the physical property of the plaster shrinking as it set, and the possibility of this creating a third condition resultant from, or as a reaction between the first two.

Building on this hypothesis the casting plaster offered the opportunity to not only cast it into a mould, but to cast something into it. In order to amplify the possibility of a 'third condition' I sought a material with a behaviour that would promote an interactive relationship between the mould, the plaster, and itself. I considered a number of options at this point; the addition of a semi viscous liquid or agent such as an acrylic glue that might interfere with the regular setting of the plaster, and in turn have its curing affected; sheets of paper that might deform to the pour and setting of the plaster, possibly dissolve in points, and potentially surface at different locations in the mould; etc. Balloons were chosen for the fact that when inflated they would have a different mass coefficient to the plaster in its viscous state and therefore move in an opposition to the tendency of plaster. Secondly, that the organisation and shape of a cluster of balloons would potentially become altered by the casting process, and lastly, that an interaction between the balloon and the plaster might further amplify the 'third condition' by their interface with one another, i.e. the symmetrical form of the balloon dictated by its bladder might be compromised by the mass of the plaster and its tendency to shrink into it as it set. The balloon, in renegotiating its form and position, might inversely transmit an action back onto the setting plaster. The decision making process at this time was very much based on limiting my control on the making process and amplifying the indeterminacy.

The mould into which the plaster and balloons would themselves be cast offered another field of potential exploration; what shape would it take? what material could be used? how would the texture of the material be translated onto the plaster? how might this process be engaged, and to what end? etc. I decided at this point to adopt a more scientific approach and construct a relatively neutral mould that would allow me to better judge the effects of the internal operations and the ramifications of, and on, a possible third condition or state.

stage 03. the pour

Once the foam mould was constructed and the cluster of balloons placed within, it became obvious that the balloons would simply float to the surface. For this reason the balloon cluster was reorganised and tied down to the bottom of the mould. This constructed yet another force on each balloon as it strove to float to the top it would now be forced to deform again by being pulled in the opposite direction. The pressures acting on the balloon made me ponder the difficulty of representation capturing dynamic forces, a notion implicit to the dynamic medium of landscape. In Gilles Deleuze discourse on Francis Bacon he discusses Paul Klee’s famous formula ‘not to render the visible, but to render visible’9, and of Francis Bacon he wrote that ‘it is not a matter of reproducing or inventing forms, but of capturing forces’.10 The possibility emerged of actively employing dynamic forces in the making process, and recognising that the making itself is a dynamic process which could inherently imbue the representation with the operative forces of the landscape.

Pouring the plaster over the balloons and into the mould immediately changed the relationships of the balloons to each other and the mould. They were forced to self organise by renegotiating their proximity to one another and the rising tide of plaster. This was a moment of the ‘happy accident’ when I realised I had not mixed enough plaster to fill the mould. This lead to two discoveries; firstly that perhaps I did not have to fill the mould entirely but leave some of the balloons exposed to offer difference; and secondly that a multilayered pour might offer other potential effects.

refer image 0011 - 0016

refer image 0017 - 0039

11
stage 04 observation

On removing the mould I was surprised at how well the plaster had reciprocated the smoothness of the foam mould. The striation of the layered plaster pour was not as I expected. I would have expected parallel stratification of the plaster layers from the self levelling liquid. Instead the result was much more random and organic. This was possibly due to the influence of the balloons on the setting rate of the plaster by forming pockets of less plaster volume that set more quickly than larger volumes.

Unlike the top face of the pour, none of the balloons had migrated to the edges which suggested that the interaction of the disparate volumes of the plaster and the balloons pressed the balloons towards the centre. Removing the accessible balloons from the top surface described the presence of the balloons as absence, and explained the undulating layer of setting plaster relative to its volume as defined by the balloons.

In order to understand more about how the forces interacted inside the plaster I would have to invert the positive and negative relationships of the solid plaster and the hollow balloons. Considering this next step, my first thought was to cast a different material back into the voids created by the balloons. The problem with this line of exploration might have been that all the negative balloon spaces would have to be accessible to the pour, which I didn’t believe was the case. This itself posed an interesting dilemma, however I deemed it more useful to see the extent of deformation and so decided that one way to do this would be to slice the block open over equal intervals.

stage 05 slice and dice

Having little experience with plaster I determined a slice interval that I felt the plaster could structurally support without failing. Ten faces were produced which felt like a good number to deal with respective to further operations. Not knowing of any appropriate method to physically divide the plaster, and interested in the effects of the potential misappropriation of one skill set – that of timber – onto another material, I chose to saw through the plaster with a hand saw. This process actually took a number of days to complete, not because of the difficulty of the technique itself, but rather the fact that each completed slice and remainder was quite simply a beautiful object. Once again I had to force myself to continue with the process in order to let the experiment run its full course. A result of this was that as the plaster continued to set over time, and therefore become harder, it became easier to saw and left less trace of the saw cut itself. This left some of the elements with a rough sawn face, and others with a smooth one.

Having sliced and diced the plaster cast into a number of components the interactive forces that took place inside the setting mix became more obvious, yet still somehow remained as a static sequence of two dimensional reflections of the convergent forces. Allowing the process of making to feedback on itself I determined that the next step would be to cast into the now exposed void spaces.
stage 06 re-cast

The plaster slices were once again organised at intervals equal to their own width in a neutral mould. In these steps it can be seen that the making is informing its continued making in an iterative process. Wax was chosen as the casting agent to provide difference to the plaster through aesthetic registration, and material performance. It was envisioned that the plaster might be removed by either physical carving or chemically dissolved, a process the wax might resist. A test of the foam mould material revealed its tendency to dissolve when direct contact with the molten wax, and slightly deform when separated from the hot wax by a foil membrane. This determined that the mould was to be sheathed in foil and enable the condition of another 'third outcome'. Following the iterative process, and also the fear of generating a heat load that the foam could not handle, I poured the wax in layers. The idea of layering the wax delivered the possibility of variable shrinkage events, and an interaction between molten wax and set wax. In order to potentially reveal this interaction I coloured each wax layer slightly differently. refer image 0109 - 0 122

stage 07 reveal

The notion of revealing the work was twofold; firstly it was to remove the casting from the mould; and secondly, it was to attempt to reveal the forces contained within.

When removed from the mould the wax layers could be seen to be warped under the pressure of shrinkage. The shrinkage of the wax resulted in a slight concavity over the faces of the whole block, which was different to the convexity of the mould bulging slightly under the load of the original plaster cast. Some interaction could be discerned between the layers of wax, but more prominent was the way it slightly seeped into the plaster. refer image 0123 - 0167

Having only a little experience in carving, and that in timber, I began carving the plaster away with a hammer and chisel in a a slow manner intended to teach myself the plaster's inherent tendency. The form of the balloon occupation in the cast was revealed quite easily, however the surface of the wax form was unlike the super-smooth finish translated by the rubber onto the bladder, as the wax had slightly penetrated the plaster to make a roughly textured surface. What became interesting about the carving process was that it was a subtractive generator of form. As I continued to carve, and not find any more hidden form, I experimented with the technique to make other forms in the plaster. These tended to be geometrically linear in opposition to the organic forms contained within the cast, and directed by the shape of the tools themselves. In this manner another precise move became articulated in the re-making process. refer image 0168 - 0196
REFLECTION

Reflecting on ‘Project Folly’, the first observation to make is that it is an incomplete work, one that might not have an ending. The methodology by which the work was made and continued to make the work could continue ad infinitum. What this process demonstrated was that although there is no clear physical object as an outcome, there exists a field of moments of change which have continually remade the work. Stan Allen writes that form exists only as a ‘stable moment in a system’s evolution’¹¹, so perhaps it is the evolutionary condition of making that is critical to representation and the design process.

The reciprocity of the making, amplified by the wanton lack of control on my part, played a major generative role in the work. The productive ambiguity of letting the model do its own thing, operating within imposed limits, suggests the doppelganger of making as being simultaneously specific and vague. This condition also allows for things to go wrong. By departing from its projected path of trajectory other options present themselves that in turn question the validity of the original path of inquiry. ‘Catastrophe theory recognises that every event (or form) enfolds within it a multiplicity of forces and is the result of not one, but many different causes’¹².

The making of this project was physically interactive. The ‘hands on’ methodology of making has a direct effect on the making of an idea as one’s aptitude and technique will play a defining role in the process. This is not to say that the more skilled person will be able to use modelling to a greater degree than those of less skill, it will simply be different. My position is that the making of models as tools for thinking is of greater value than the production of a beautiful object. This of course does leave me open to the criticism that only someone with enough skill required to make a beautiful object could make such a ridiculous statement. This may well be the case and a testament to the journey I have taken with this research. It is also worth noting that through this research my register of precision and way of seeing beauty has shifted.

‘Project Folly’ also made evident the idea that the work was itself a body which required a continual negotiation of interaction, and that the body had the potential to undergo its own metabolic and physical changes.

The step by step description of the ‘Project Folly’s’ making presents a somewhat rhythmic and linear sense of time. This was simply not the case. The process of making occurred over a period of weeks in bursts lasting only as long as a couple of minutes to a sequence of days importantly broken by similar time periods of reflection, osmosis (diffusion and filtering through the membrane of both the maker’s body, and the model’s body) and non-physical engagement.

An interesting observation of the ‘hands on’ making of representation is the general effect that the physical objects made often seem to be of a comfortable size relative to the human body, despite the scale it operates in, or the relative size of the thing it represents - obviously there are interesting tangents to this position. As a physical engagement Charles Waldheim expressed how one moves and engages with the making of representation is as much about the role of one’s footwork.¹³ This notion particularly appealed to me as a registration of a truth, and a nod in the right direction of someone (me) that has trouble sitting still.

The physical interaction of the making also allows one to think through the hands. This establishes a discourse between the idea, the body of the work, the hands (and body) of the maker, the medium and the conscious and unconscious thoughts of the maker. As players they establish an internal generative dialogue. When coupled with the reciprocity of the making this allows for hierarchies to shift and change. The players may complement each other, offer difference, and fill in when others have nothing to give. In this sense the reciprocity acts as a feedback loop. Intuition in this instance might be an attribute of some of these players. I think it important that my understanding of intuition is that it is a quality made up of many parts – including experience and knowledge – engaged by forces of the moment, and that an intuitive decision once made can be critically unravelled to determine its reasoning.

An interesting observation of the ‘hands on’ making of representation is the general effect that the physical
These images depict models of the development of the bladder for 'Project Capsule'.

The water-filled bladders were transported and arranged in the freezers by forklift for freezing.

A happy accident occurred when one of the bladders capsized during transportation. This capsule came to play an important part of the field of capsules.

Details of the frozen Ice Capsules and the variability in the ice according to how it is frozen and its thickness.
TIME

Through the execution of ‘Project Folly’ I began to understand how I employ time in my practice of making. This is an understanding of time negotiated by me in the making process and is, for the most part, projected onto the model. The model did resonate its own time agenda via its material and technical properties, yet these were of little substance in the overall consideration of time in this particular experiment. ‘Project Capsule’ almost inverts the notion of time demonstrated in ‘Project Folly’, and revealed other aspects of time relevant to a process of making.

‘Project Folly’ was a work exhibited at the Melbourne Museum as part of an exhibition on water use in Australia. Ten capsules of solid ice were located outside the museum building in the bleak expanse of its forecourt. The majority of the physical making process, prior to its installation, was the determination of the bladders through a few quick paper models of the design intention, and the filling of the bladders with water before their nine day interment into the freezer to transform the water from a liquid to a solid state. refer image 197 - 204 This project became more about the affects of the capsules re-making space over time than the making of the capsules themselves.

‘Project Capsule’ was essentially the medium of water frozen. Up until the point of it’s insertion in the landscape, the making of the ice capsules had been fundamentally concerned with the idea of capturing a quantity of water – the average quantity of water used by a Melbourne household each day – by freezing it into a droplet form that may be associated with the formal properties of water, and offered difference to the rectilinear geometry of the architectural context. The emergence of an object from this process, a projected end point, was a clear goal of the making process. I recognised the desire for this resolution when I found myself looking for the heroic image of the object in the landscape when photographing the object of the intervention. refer image 205. What became apparent over the week of the project’s existence were the dynamic qualities of the intervention in the Landscape. The first evidence of this was the engagement with the landscape when determining the positioning of the eight ice capsules. The objects themselves presented such a marked difference in medium and form, that their species – although in minimum numbers and volume when related to the size and elemental repetition of the Museum’s forecourt – dramatically reconfigured the space through the way people interacted with them. refer image 205 - 206. This condition was altered again when the capsules were covered in reflective blankets in order to slow the melting of the ice capsules before the official opening day. When the reflective covering and ice mould covering was removed the transformation of the space shifted once again through the change in medium rather than location. The exposure of the ice itself, and the everyday elements that we had frozen within catalysed a physical interaction of sensation. Children were drawn to the ice capsules, they touched, felt, licked, kicked the object and wondered how they might get to the objects within. Adults also became entranced interacting more conservatively than their children, excepting those that had implements that could burrow into the ice to proudly retrieve treasures for their younger companions. In this way the interaction would, in some cases, accelerate the decay of the ice and reconfigure its transformation. The capsules could be seen then to re-make the space and be themselves re-made by the interaction.

As the ice melted slowly flowing puddles of water emerged. Moving with the slight yet non-apparent gradient the stream would bifurcate, and rejoin in a chaotic manner through its interaction with the paving module of the forecourt. The space of the forecourt became transformed again demanding people to continually re-negotiate the space through the puddles as they continuously changed. A variety of ever changing factors came into play, and became almost tangible: the change of temperature in the day, shadow in the morning contrasting with the direct sun of the afternoon effected evaporation rates and reflected light, the winds speed and flow, the porosity of the different materials that the water moved over and through, continually made and re-made itself. Time was the vehicle for change ‘a destabilising but creative milieu; it was seen to suffuse everything, to bear each thing along, generating it and degenerating it in the process’.14 The ice capsule as object became an interactive recorder of the dynamic medium of the landscape. This was a particularity salient discovery as the making of the work and its resonance in the world made me realise the nature of flux in the landscape - that a space was continually re-making itself through the complex relationships of and between objects in a space – and that this was analogous to the process of designing through the making of models.

The phenomenon of landscape time divulged a variety of time durations relevant to processes of change in the landscape medium. The quantification of time itself would reveal different aspects of change. The quantification of
These images describe how the space of the Museum forecourt is re-made by the placement of the Ice Capsules, and re-made again through its material transformation.
time into the briefest of moments (intervals of seconds) may reveal relatively large change when compared to that of changes that might be revealed over periods of a week, e.g. from second to second the change in physical form through movement of a tree might be relatively dramatic, however the change in tree when quantified from week to week might be relatively insubstantial, whereas the change in the tree governed by tens of years might be qualified as substantial once again. The notion of interfacing with the dynamic medium of the landscape over time became an important consideration in my research. This led to the notion of encouraging time to play a role in the making. How might an intervention in the landscape engage with the complex dynamics of a space and be re-made through that dynamic over time.

'Project Capsule' was not in itself designed as an experiment to explore the notion of time, yet managed to reveal important qualities of time relevant to the process of making and landscape as a medium. These qualities engaged more thoroughly with the aforementioned notion of form as an evolutionary system of moments.

Unlike 'Project Folly', which could continue indefinitely, 'Project Capsule' had a due date for installation that established a window of making. The commonality of the two projects is that they were not made over one continuous block of time, but in a series of bursts without rhythm or defined period. This was an important realisation as part of my making process, for it is the generative reflection and osmosis that occurs, and inspires the next period of physical engagement. Each phase was also noted as having a different kinaesthetic experience. Some phases such as the physical filling of the rubber bladders with water, were slow – as was determined by the medium and the technique – and inherently contemplative. Other phases – the prototyping of the bladder pattern - where fast and intuitive. The range of time types was directly effective on the making process by providing, limiting and concentrating the opportunity to reflect, allow the model to act as a knowledge trigger, or simply limit the time to think and act.

The short and fast time periods of 'panic design' revealed action based on intuition (one's own knowledge and experience of making) and immersion within the medium and the idea being related. This would often lead to a rich field determined by informed, yet quick and impulsive decision making. In 'Project Capsule' I was informed by my own material and technical knowledge and experience of freezing water in various vessels, and discussions with the industry specialist who was to freeze the capsules. Making of this nature often magnified the possibility of discovery and the 'happy accident' through a product of its intensity. When transporting the newly filled bladders into the freezer one accidentally capsized. There was no way to correct this problem, so we let it freeze with the others. refer image 200 In this sense the accident is defined as a 'happy' one via productive discovery. This capsule became important to the field of capsules as it offered difference in its performance, and revealed something more of the 'drop' form lost in some of the others. The physical product themselves might also seem to embrace, or hold on to, the purity of an idea, and its relation thereof, in a similar manner to that of 'condition white'. The making would allow little in the way of accretion, or dross to subvert or disguise the essence of the process.

A window of time inherently describes an 'end time'. As discussed, the end time may be considered as an artificial construct where the making has an extended life of resonance, feedback, and effect on itself and further makings. This may be viewed as more effective in models for design intention, rather than the models of a design. The models themselves then act as containers of knowledge unlimited by time, and sometimes effectual only through their ability to transcend one time. In this sense the intention is not restrained by the model's physicality, but is actuated by its continually re-made effects. This may extend even beyond its physical being. 'Project Capsule' has forever transformed the experience and use of the context in which it was located, by describing the latent dynamic potential of the museum forecourt for myself, and hopefully also for others who experienced it as part of it's ongoing history.
These images depict the melting of the ice over a period of days. The flowing puddles of water changed through the day in response to the conditions of the landscape. In this way the Ice Capsules continually re-made the space of the forecourt and demanded constant re-negotiation of the space.
The heroic image of an Ice Capsule describes the project only in the singularity of it as an object. This series of images shows the interaction inspired by the Ice Capsule through their material and ephemeral qualities.
The "Rubber Band Diagram" model was an investigation of the parametric relationships of objects in space. This model remained somewhat static despite its operative capability.

These images describe "Project String Thing" in its initial set up position as a grid of operative string elements, the flow of people through the space, and how the model recorded the flow through the space over time via dislocation of the string elements.

This set of drawings was a recording of the dislocation of the string elements of "Project String Thing" at hourly intervals. The last drawing is an overlay of six hours of recording.

The recordings of the space continually re-making itself as identified through "Project String Thing" were re-made in a virtual model in order to compress time and register difference.
In an attempt to understand the dynamic nature of space defined not only by objects, but the relationship between the objects I made the esquisse ‘Rubber Band Diagram’ model. In making this model I described back to myself the abstract condition of connectivity between parts that make up the whole through the use of rubber bands. This model was operational only in a sense that if the location of one element was physically altered by pulling it other elements would be displaced throughout the body via the connecting rubber bands. This however remained as a model of the parametric idea of space and became limited to the singular function of demonstrating this theory. refer image 211

‘Project String Thing’ consciously engaged more thoroughly with the dynamics of space than esquisse ‘Rubber Band Diagram’ by engaging with the landscape medium and its potential to re-make over time revealed in ‘Project Capsule’. The work was framed so that I would physically make the work up to a point, and let the space in which it existed continue to make the work. Within the contained volume of a gallery/corridor space I constructed a field of strings suspended vertically in a grid pattern that filled the entire volume. Each string element was fixed to a track along which it could slide and therefore change its location. The 3mm braided nylon string was thick enough to see, yet thin enough to mentally register that it would not impede a journey through the space. Interestingly the super-artificial colouring of fluorescent pink and yellow string enabled it to be psychologically read as part of the space and apart from the space. By existing in this state of in-between people were able to interact with it quite freely. refer image 212 - 213

The intervention became a recording of the forces that make the space. The result of it’s first day of being were positive with respect to how the flow of people through the space continually displaced the field of strings over time, however the result of one day’s traffic was just that, the accumulative effects of one day as judged by its end result. From my observations of the projects performance over the day I was clearly missing the fluctuations of its continual re-making over time. The extra length given to each string – the string was long enough to loop onto the floor so that it might be more easily situated on the floor grid, and offer a slight tactile connection to the carpeted surface through friction – was observed to capture something of the force and direction transferred to it by the flow of people through the space. An observer of the space (one engaging with the space) would not only be an active force in the space, but would also be able to read how such forces played out through the dislocation and memory of the string elements. refer image 214

The physical movements of the string were mapped hourly according to the two factors of displacement and force as governed by its trailing length. These two dimensional models where then virtually modelled and animated to compress time and change in and onto itself in order to register relative degrees of change in and of the space. In this way I altered time to demonstrate how the space operated as recorded by the physical model. refer image 215 - 216

The window of time in which these moments operate in my own practice is often used in its entirety, and is sometimes stretched. This condition does not necessarily point to an inability to adhere to a deadline, but rather the desire to delay an outcome in order to maximise the avenues of potentials generated by the process of making.

A conversation of the time invested in the act of making brings to bear the notion and concurrent effect of a ‘start time’. In his ‘Incomplete Manifesto for Growth’, Bruce Mau speaks of John Cage’s notion of beginning that ‘tells us that not knowing where to begin is a common form of paralysis. His advice: begin anywhere’.15 The resonating truth of this is that there is no defined logic that will point to an absolute start point, however one must understand that the start point has the potential to greatly effect the journey. I often find myself thinking ‘I wish I would have started there instead of where I did’. This realisation itself could not have come about without simply beginning where I did, and will have a great effect on the otherwise desired start point. What I find is interesting about this realisation is when and why it occurs in the making process, and what effect it has on the journey of making that I am on, or the decision to start again and re-make.
Terra Fluxus captured in a seemingly inactive moment, yet simultaneously describing a record of its human interaction in the form of its frayed ends.

Details of Terra Fluxus capturing its re-making at 30 second intervals.
INTERPRETATION + ABSTRACTION

Inherent to the making process is the way we see, read and interpret the productions and the methodologies of the making. This notion can be evidenced throughout the range of model types - making models for design intention, through to models of the design - however it plays a critically effectual role in the former, and is fundamental to the re-making methodology.

At its core is the simple, and yet potent, understanding that physical modelling embodies qualities of space, form, and material engaging the body of the maker and the model over time that are inherent to the disciplines of Landscape Architecture and Architecture. The sophistication of this simple coherence lies in the fact that the product of the making is not read as an object, but as a re-presentation of these attributes in a body other than itself - the Landscape or Architectural project that will emerge in the world as a result of this process.

Reading is then an act of judgement. It is a critical testing of the space, form and material qualities of a model relative to the idea of its inception to what it has become, and yet may become. Fundamental to this routine is the recognition of instances and effects of these attributes that emerge from the making. One of the first instances of this occurring in my own work was the discovery of a dimension to the project that was otherwise unconsidered its development. In a project for the design of a Library this occurred through the simple action of inverting the model and seeing the potential of its underbelly. Judging this condition led to an understanding of the potency of the occupation of this space. It also informed how I might proceed to develop it’s design through what the model was offering with respect to the spaces created by the constructed elements relative to the idea being transformed through the model.

As already demonstrated in ‘Project Folly’ the act of reading was critical to understanding the next iteration of the making. The reading of this making was not only an evaluation of the formal qualities of the model in a moment in time, but an interpretation of the act of making that lead to that specific moment. This took into consideration the interaction between the medium and the technique of application.

The consideration of how a model is to be read will also have an effect on the decisions made as part of its making, and its next phase of being. The intention of making in esquisce ‘Blue’ was to enable a reading of specific information by the exclusion of all other information. A ten kilometre stretch of a Dutch Landscape was constructed from 25mm thick blue foam. The foam was dissected to describe the division of land by occupation and ownership. The flatness of the landscape represented was amplified by the singular thickness of the material. The division of land is described in the model by its extrusion by slicing and separation of the parts. By excluding all other information relative to the landscape one could read and speculate on the relationships determined by division and programmatic occupation through the abstraction of the model. What also became apparent through the reading of this model is how one could read into the model qualities of the landscape that had been excluded, as the abstraction of information more clearly determined, and informed, how and why other layers of occupancy plugged in. In this manner the model is an ‘abstract machine, connected to an outside, exposing things unthought in our ways of being, seeing, and doing’.

Taking the abstract condition of making further, or the notion of making that embraces abstraction, making that embraces the abstract determines that the making of a model is foremost as a thinking machine where “the abstract does not explain, but must itself be explained”. Making of this nature challenges ideas through fabrication, is stoked by its own reciprocity, and is enabled and tested through iteration. In this hyper state of being and engagement “information is independent of the material medium through which it is transmitted”.

Models built in the nature of Condition White potentially subscribe to this material abstraction.

‘Project Terra Fluxus’ was in many ways a re-making of ‘Project String Thing’ in the landscape. Critical to its making was the notion that the model be allowed the possibility to re-make itself, thus keeping the possibilities of occupation open. This was to be empowered through the hands of the maker and that of the landscape. This condition inferred a number of potentials on what the model became and could have become. The intention of ‘Project Terra Fluxus’ was to be a recorder of the landscape in which it became simultaneously a part of, and separate to. Once again the super artificial fluorescent colouring of the string (now 6mm in thickness due to the scale of the work) enabled the work to read as an artificial construct in the context of a botanic garden. The work comprised of 420 strings in a 5m x 5m grid, each string is 15m long at intervals of 250mm, suspended in the air by a high tensile suspension cable network affixed to three trees at an approximate height of 12m. The structure employed approximately 7000m of braided nylon string, 600m of 4mm wire rope, 150m of 6mm wire rope, and 800 various fixings.

The otherness of the work contrasted the response of the work to the natural elements of the landscape medium, and in so doing amplified its condition of being a part of the space. A slight breeze directly impacting the suspended strings, or transferred through the resistance of the trees to which it is connected, continually remake the relationships between the individual strands and the whole body.

The work from variable distances once again effects ones’ reading of the work; at distance it may appear as a single body gradually moving, moving physically closer the independent elements detach themselves from the body momentarily revealing the
Terra Fluxus bundled in a failed attempt of suspension offers another possibility of becoming.
complexity of the forces it is interfacing, up close the 420 individual strands create a seemingly random dance of individualism. Engaged in a continual process of re-making physically and visually the work is less an object in the landscape, but instead an interactive recorder of the landscape itself by being a ‘medium of perpetual metastable events accommodating continual registration of difference over time’. refer images 268 - 270

A necessary requirement of this project was that I work collaboratively with others, namely an engineer, a tensile cable specialist, a surveyor, a team of high access installation experts, another designer, and a team of helpers. The incorporation of a number of minds bent on the making process facilitated generative difference through interpretation based on their own speciality, experience and projection of the process. Through this process the structural suspension network was developed from a visibly insignificant element into a dynamic system. This structure could continuously change, spreading the variable loads created by the movement of the trees to which it was fixed, and the live load of the string body. Reflecting on this project, it became obvious that the structure is in fact performing in exactly the same way as the vertically suspended string body, but doing so through different forces with discernibly different outcomes. The re-making of this idea would attempt to negotiate these two parts that remain somewhat separated in the project. refer image 264

A model was made in the early stages of this development to evaluate the aesthetic qualities of the cable network, and consider how it might be built on site as it was simply too big to build off site, let alone transport it. Unknowingly, the tensile cable specialist had also made a model in which he both discovered and tested a greater flexibility in the structure. The combination of these two models lead to the making of a third in which the operation of making modelled the way in which it could be physically made on site at scale 1:1, and embraced the new structural elements. These models where intended as models of the design intention yet also became models of how we thought about engineering the structure. In this manner they have qualities of both models of and for design intentions. During the process of making on site, there was a point of failure when we were unable to negotiate around an obstacle on site. Empowered with the knowledge of making the structure in an operative model, and on site the structure was re-made embracing the methodology of the previous three models.

Reading 'Terra Fluxus' through its process of making, a number of significant moments presented themselves that both changed what has become, and informed what it (or another iteration of itself) might become. These moments engaged with the attributes spatially, materially, and technically over time; some of these have already been demonstrated. Other moments included how it performed during its first failed suspension. At this time the body was suspended in a slumped position at about half of its intended full height. The strings – individually tied into neat bundles – became knotted around one another to create a dense body of fluorescent string with some unwinding to partially escape and deconstruct the mass. The individual strings that broke free made it possible to read the construct of the mass, and its inherent complexity that read from afar as a single blob. In this moment the structural tensile members had not been fully engaged and flew through and past the mass in a more inclusive manner, and provided the whole body with a slow laboured movement. This movement could be interpreted as being transferred through the forces of the landscape, but were somehow tainted and deformed by the nature of the body in its bunched form. This is a very different interface and recorder of the landscape than what it became, but did inform how these forces might be engaged and changed. refer images 250 - 258

Once the structure was re-made to accommodate the obstacle, the strings were dropped vertically to make contact with the earth. Each string had been given an extra dimension to its length so that their trimming could be done more accurately once the work was in place. Because of this unforeseen connection to the earth this inferred a greater connection to the landscape that it was intended to interface. Now that the individual strings were free from the bundles, and each other, they moved more freely and perhaps more true to the forces of the landscape specific to its site. This flexibility was reduced yet never fully erased the closer it came to the earth, implying the variable speeds within the complex dynamic of the landscape. refer images 263

The strings were originally intended to be precisely cut to a height of 2200mm above the earth, just slightly out of the reach of an adult. However based on our the earlier discovery it was deemed that we increase the tension between the air born body and the earth by making the separation only 1200mm. The strings at this point became very reactive to the slightest breeze. The loss of contact with the earth did change the performance of the body by cutting off its tactile embrace, however it now enabled a physical contact with even the smallest child, thus enabling it with another force. The technique of cutting the strings by setting up a laser level after dark gave another dimension to the work. The fixed light could be seen to travel effortlessly with the moving strings, yet not itself be affected. This in turn accentuated the dynamic movement inspired a range of possibilities that might employ this technique. refer image 217, 265 - 267
263 The connection of the string elements draping onto the earth made for a moment of greater connection to the medium of the landscape.

264 The suspension structure reads as a separate element to the suspended body of the strings even though they have a sembiotic relationship based on similar behaviours.

265 Employing a laser level to cut the strings at a level 1200m above the ground plane transformed the suspended body, and offered another interesting potential.
At a distance Terra Fluxus is read as one body. Viewed at close range the body is understood as a multitude of elements continuously redefining their relationships to each other, and consequently re-making the whole body.
Reflecting on my own practice of making, the impetus of this research was to explore the potentials of making as a design process where ideas are challenged through the fabrication and laws of reality that are part of becoming. Fundamental to this passion is a belief in making models because of their physical and spatial qualities, materiality and unfolding over time that are essential qualities of the disciplines of Landscape Architecture and Architecture. Critical to this position is the act of making which engages every cell of the body and thus contributes to the intelligence of the act itself.

Through this exploration of making I came to realize, and embrace, a shift in my work away from a making of the singular and therefore somewhat reductive models of a design intention, toward the more abstract and ambiguous making of models for design intention. This has enabled me to develop additional tools and ways of thinking about making that moves away from the production of an object as a final outcome, and embrace the critical role of the making as a complex and generative design process. If the act of looking, and perhaps representing, something in the world is considered as an act of violence that essentially rips the subject from its environment, the model for intention necessarily does this, yet at the same time has a greater ability to remain plugged into the context of its existence, and subsequently the resonance of its being concurrently inform that environment. In this manner the model becomes "less a finished "work of art," and even less a tool for communicating instrumental ideas, than it is itself a catalytic locale of inventive subterfuges."20

The models of design intention made in the early stages of my practice were generally beautiful because of their technical precision. This research has revealed to me that precision does not only reside in the perfection of a seamless joining of planes. It can also exist to describe the exact forces that led to the imperfect surface of the plaster as in 'Project Folly' refer image 146, and that there is an inherent precision to the process itself. There is also the imperfect and the flawed which in themselves offer a precise beauty. Effectively this has also enabled me to be less precious and more flexible about making which has expanded the field of potential and embraced making more truly.

Essential to this path of making are the qualities of iteration, reciprocity, abstraction, interpretation and operation. They also engage the qualities of space, material, and time. Iteration can be seen to operate at variable conditions of time - from one instant to the next in a series of moments, through to the accumulation of a series of moments over the lifetime of a body – and, importantly resonate between these conditions. "The iteration is a self-similar but non-identical repetition betraying a drift in form which bears a certain similarity to its original but which, nevertheless, avoids identity".21 The iteration builds on the potentials of its former, and creates new effects through difference. This was demonstrated throughout 'Project Folly'.

The time relevant to the making of any project is its limit, i.e. the lifespan of a project delineated by a due date for the project's completion - theoretically the moment in time that a designer's engagement in the project's making is severed – and, the projected length of time that the made work will exist in the world. These limits are immediately questionable to the designer as a project may be interpreted as a moment in a designer's on going work, or that the work, or parts thereof, are understood to be re-made in future projects. This implies that my present work is a re-making of a previous makings, and describes design as an iterative process, one of continuum.
The reciprocity of making embraces the intelligence of the body of the maker (my body), and that of the body of the model. This establishes a framework of spontaneity that allows the model to have an unfolding life of its own. This condition then embraces mistakes, and failures as necessary events. In this sense the model is both a thinking tool, and a container of knowledge. This is clearly demonstrated in the process of making ‘Project Folly’, the happy accident of ‘Project Capsule’, and also in the way people know how to play with, and therefore re-make ‘Terra Fluxus’.

Interpretation, or the act of seeing and reading, is critical as both a catalyst to, and the enabler of, the making process. The act of seeing recognises critical moments in the making process that may define, or redefine the trajectory of exploration; recognised moments which may prove or dispel, connect or disconnect, reveal other qualities, and may infer other potentials. As John Rajchman writes that ‘finding within things the delicate, complicated abstract virtualities of other things’ simply exercising the re-reading of an event in time may further these attributes. When reading the model of esquisse ‘Multiply’ the initial reading was that it engaged with the transformation of different spaces in one single moment in time. The re-reading of this model was that it may engage the transformation of a singular space over time.

Understanding making as a continual re-making process was discovered and exemplified in the landscape. The complex dynamic medium of landscape demonstrated through its own machinations how making itself is a dynamic generative act. This sense of a continual re-making embraces both the physicality and psychology of ideas transformed through space. The landscape also provided the vehicle for exploration where ‘Terra Fluxus’ may be read as not itself a landscape, nor an object in the landscape, but an exploration of making as a transformative process.

I feel that this research has enabled me to better position my practice of making, however in doing this I have also defined a much larger field of making than I originally understood. This then throws up more questions about making than I have answered. How, for instance, does the making of physical models engage with the making of drawing, and making in the virtual world of the digital and digital fabrication? What potentials might arise in the convergence of these mediums that develop and challenge my understanding of making? How does the role of the observer who is actively engaged in the making differ from the observer viewing the making from a distance? What implications will these other mediums have on observing, reading, and interpretation in the making process?

Fundamental to my developing understanding and position on making has been the engagement with the landscape. The dynamic quality of the landscape in flux, continually transforming over time, were the catalyst for understanding making as a continual re-making of space. The landscape’s phenomenological attributes of material, space and time are then also the qualities of making as an iterative act of unfolding and the wilful search for the unexpected.
Endnotes

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3 ibid. p.145
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