

Possibilia: Possible Worlds and the Limitless in Architecture

Sean Pickersgill

Possible worlds

One of the core tensions in architecture has been the relationship between the conventional practice of design, documentation and construction (whether real or addressed in architecture schools through practice-based training), and the role of impressionistic, incomplete and fictional approaches to architectural design. While the former constitutes the acceptable and coherent relationship between forms of ideation and representation that has, as its goal, the completion of a materially real structure in the world, the purpose and meaning of the latter is less clear and considerably more problematic. In support of the value of speculative work one of the core roles of architecture theory is on occasion to provide a contextual reading of works that, at face value, seem to exist purely to stubbornly demonstrate their incommensurability with the world. Piranesi's *Carceri* drawings, Lequeu's images of a gendered and sexualised practice, Constant's urban vision of *New Babylon* and any number of student projects that depart from the everyday, all purport to describe a process of understanding architecture that has internal consistency within the work but is seemingly incommensurable with professional practice.

Often the justification for this work is that it expands the territory of the discourse on what architecture *might* be, and that the qualia of these projects reveals irruptions in dominant discourses on what might be considered real and rational – a value in itself. But how exactly, does it do this? And

how can something seemingly impossible to realise, actually mean anything non-trivial in our existing material circumstances?

Behind this relationship is a presupposition that has been at the core of recent developments in modal logic and the discussion of possible worlds. If we assume that everyday architectural practice and speculative work exist in the same world, an investigation within the analytic tradition would seek to define the existential conditions in which the real and the imaginative can be in the same epistemological space, be real, and be meaningful. How can Lebbeus Woods's work, for example his cenotaph for Einstein, and that of a conventional practice exist in the same explanatory schema? Within the analytic tradition there are quite powerful tools for examining this relationship, from Frege and Russell's use of the existential quantifier¹ to the work of Saul Kripke² and David Lewis³ on possible worlds in modal logic and Lubomir Doležel⁴ within studies of fiction (applying the work of Lewis, et al.).

This article will set out the philosophical basis for considering speculative architectural projects within an explanatory schema that describes an analytic approach to the consideration of fictionalised possibilities. It will show how the transition from a one world schema of considering the relationship between the real and the fictional, which constrains fictional artefacts to be either semantic representations of actual (diminished) circumstances or, worse, empty signifiers that can be more powerfully described and

understood within a multiple world schema. This is an issue of some importance as it underpins the robustness with which propositions may be made about, potentially, conflicting sets of circumstances. A 'one world' schema assumes that an open set of propositions about the world (including architecture) should be internally consistent (or that their inter-consistency is a matter of proof). If a proposition, or in our case an architectural project, is deemed to be 'merely' semantic, and without a direct referent in the material world, then it is sometimes relegated to the status of epiphenomenon. A 'multiple world' schema, in contrast, requires a more flexible method of thinking because it requires one to, typically, relax the need for a specific overall explanatory scheme tied to our world, without forgoing the imperative, as with Occam's razor, to reduce the number of complexities within any explanation. By doing so, as the argument sets out below, fictional propositions are not 'merely' semantic, but consistently robust 'in their world', and in every world the fiction describes. We may never be able to materially access these worlds, but they are nonetheless logically possible. Moreover, by understanding the clarities that come from employing logical expression in the description of counterfactual circumstances, the article will show that speculative architectural projects occupy a unique ontological space that is real and rational. But to do this we need to first recognise the difference between different types of propositions about architecture.

Ecce architecture

When we think of how architecture is, how it comes to be what we see and experience it as, we can ask two simple and reasonable questions: how has it been undertaken in the past up until the present day, and how might it be undertaken in the future? It is a simple relationship based on ideas of consistency and prediction. We know that the likelihood of there being revolutionary change is generally unlikely since the production of an architectural work entails the efforts of many persons

from conception to completion and beyond and that the complexity of these relations work against spontaneous idiosyncratic examples. Because architecture is, usually, expensive and required to satisfy a complex array of performative functions it becomes the outcome of groups of professional consultants, prospective client and user expectations, regulatory requirements and conventions of construction. This characterisation usually holds for both constructed and proposed work, but not for all types of representations, as this article will show.

In addition, modes of discussing architecture, and the complex semantic analyses that follow from the non-analytic tradition, emphasise the metaphorical relationship between patterns of thinking and the conceiving of and thinking about architecture, and in particular the cross-relevance of discursive heuristic domains between architecture and other areas. These types of analysis, from those undertaking discussions on issues of sustainability within the broad spectrum of definitions of that term, to more focused technical discussions on behaviour and desires in contemporary culture, as a representative sample, rely on morphological and linguistic matches to assert the presence of 'architecture' in a variety of intellectual practices. Perhaps it was the emergence of the 'post-critical' discussion in the beginning of the 2000s that recognised that the increasing complexity of these bodies of knowledge made their usefulness (at a completely utilitarian level) questionable.⁵

As an example, Bernard Cache's *Earth Moves* describes a relationship between the topology of thinking in the work of Gilles Deleuze and the non-standard geometries of his 'objectile' projects.⁶ Cache takes specific care to articulate the morphological aspects of objects and their transformations under a series of transitive operations. The formal relationship is complex, as is the fine-grained discussion of the haecceity of both the object and the viewer/maker; however it is not clear what

implicit and intrinsic demands the forms make as public statements, or in the context of a public discourse on their performative value.

So, for the purposes of this article, if we limit the discussion of architectural projects to the degree to which their extensional and intensional qualities form a component of a domain of discourse, there may be another mode of reviving the qualities of resistance and criticality, or at the very least, understanding that architectural work that positions itself outside of everyday expectations of the usefulness of architecture and theory continues to be produced.

Logic

Logic and modal logic are not necessarily the first forms of thinking that one might associate with architecture. The minutiae of logic as a practice emphasises the definition and specificity of propositions about the world, whose viability is contested within the philosophical discussion of logical form. It is not necessary to rehearse the component aspects of logic in this essay, but it is worth recognising that the examples used in logic are never directed specifically at a particular state of affairs in order to investigate its qualities *qua* a subject of study, unless to allow or deny its generality. The discussion of syllogisms in logic that commence from the proposition: 'All men are mortal'; 'Socrates is mortal'; therefore 'Socrates is a man' is not about Socrates *per se*, but about examples of set theory membership involving 'all' and 'at least one'. In this sense a logical proposition about architecture, 'All architecture is discursive' for example, would never be evaluated solely to discover the truth-value of the proposition: 'that all architecture *is* discursive'. Logic instead is a tool for analysing states of affairs from which claims are made regarding the specificity or generality of their application.

Indeed, it seems perversely pedantic to scrutinise every aspect of a complex cultural phenomenon such as architecture in terms of

individual propositions, since complex propositions about existing phenomena entail an almost infinite number of sub-propositions that address the conditions for the head proposition to be true. Because, in general, we wish to avoid creating propositional scenarios in which the truth-claims of the initial statement requires an infinite regress of supporting claims, we look for a method that uncovers the most efficient supporting propositional chain. 'All good architecture is coloured white' for example would require many conditional relations (defining 'good', 'architecture', 'coloured' and 'white') that support the original claim. However, it should be noted that this does not mean that the process is inherently relativised or is dependent on individual perception. Any expanded set of propositions that include the terms above will, on the contrary, work to demonstrate the applicability of the head (sometimes called 'horn') proposition once contextualised. However, this process of creating complex propositional chains supporting an architectural state of affairs can be complex and exacting, though the process is simple, if the knowledge base for making propositions is large – as it is in architecture.

A strong argument could be made that the general terms employed in architecture, 'design' or 'critique', actually refers to this very process in which competing truth claims/conditions are assumed as a premise for a project and then tested for the validity. In propositional logic this is called forward chaining when we are trying to determine if the true statements that support a desired outcome are supported by the factual basis of the premises. Forward chaining (and backward, for reasons of interrogation rather than proposition) emulates the state of affairs in which we might discuss the proposition 'Good architecture is coloured white' without having to laboriously define the truth claims of the knowledge base that supports (or denies) this.⁷

Hermeneutics

It is at this point that it may appear that there are a

number of naively normative assumptions regarding the process of interpretation in the above example, and potentially within the discussion overall. Further, when discussing something concerned with the ambiguities of 'meaning', it could be argued that this issue is assumed to be clear and flow unproblematically from these statements. There are a few points to make in this regard. The employment of propositional statements regarding a world do not, as statements, need to conform to issues of interpretation and inter-subjectivity within a discursive context of author and reader. I would argue that this is an unnecessary concentration on ambiguities within the qualia of statements and their extensional properties, when a simple recognition of their intensional boundaries will suffice for the point to be made. For example, the proposition above, 'All good architecture is coloured white', while rich in associations (its extensionality) is logically coherent *in at least one* reading (its intensionality). While modal logic does not capture all aspects of propositions, because they do not require this level of fixity, it does make use of the simple assertion that things do mean what they say, true or otherwise. Secondly, the pre-occupation with the practice of employing hermeneutic awareness within the act of reading, the attendance, to a hermeneutic 'circle' that requires the reader to fully disclose the ontological 'entailments' in the act of interpretation, usually asserts that this process is a necessary originary disposition to make aware 'states of understanding'.⁸ While there is clearly value in self-awareness and issues of structural bias, in comparison with studies in modal logic, and in fictionality, this seems an unnecessary level of scholastic caution.

At this point we might just be making an argument for the recognition of logical entailment in architectural discourse, which seems to be unproblematic. However, as we shall see, there are a number of special conditions for architectural projects that make claims on knowledge bases that are only counterfactually true. In part this is to do with the

heuristic function of discussion generally, but it will also involve the role of fiction and narratology in architectural design. To clarify this position, it is worth considering the difference between actual-world projects and possible-world projects.

Actual world – Blur

It is true that in architectural discourse we are keen to test the applicability of propositions about projects and to examine the logical entailments that follow. Publicity material presenting Diller Scofidio and Renfro's Blur Building of 2002 makes the following claims:

Contrary to immersive environments that strive for visual fidelity in high-definition with ever-greater technical virtuosity, Blur is decidedly low-definition. In this exposition building there is nothing to see but our dependence on vision itself. [It] is an experiment in de-emphasis on an environmental scale.⁹

On face value it would be reasonable to examine the truth value of their claims, concentrating on those propositions that intuitively seem to imply the most distinct areas of innovation while ignoring the tedious questioning that might follow simple statements of fact, the knowledge base.

Yet for all the uniqueness of Diller Scofidio and Renfro's approach in this project, its tangible presence as an architectural structure within a complex, semantic discourse is stabilised by the fact of its existence, since its presence acts as an extensional referent for claims about its qualities in the actual world. Extensionality, in this instance means that the knowledge base of propositions can be checked (or backward chained) against what is known and true about the project. However, we can also ask related questions: What if all art pavilions were similarly created? What if it were co-opted as part of a commercial advertising campaign? What if it were the site of an extreme act? These questions, while not explicitly part of the original conditions of

the project or the overt intentions of the architects, seem to have some form of intelligibility since in answering them we will inevitably refer to material and theoretical conditions that are unique to the Blur Building. It is in this context that it is necessary to introduce the discussion that has revolved around the creation of possible worlds within the field of modal logic.

Possible worlds – modal logic

When we look at images of proposed architectural projects, one of the tests of their coherence, in fact the commonplace view, is how well they accord with our expectations of what we have seen before. If the project is a multi-storey tower, it will generally be vertical in orientation, include repetitive floors and be grounded to the earth's surface. These are the constituent elements of the knowledge base that is maximally truthful. And while there are many subtler, and sometimes problematic, means of identifying what we expect architecture to appear to be, this is a commonplace expectation within the actual world since its contradiction would cause us to question whether it is possible the architectural project is, *caeteris paribus*, a building. For this reason, we are also likely to be surprised by the presence of a building floating in the air in defiance of gravity, or a building be made of rice noodles when its overt intention is to be durable and endure, or to require users to act in a fashion that has no grounding in commonplace behaviour.

Yet there is a considerable body of work designed to be as transgressive of conventions as possible. The relationship between architectural practice and transgressive ideas has a considerable and well-articulated history that recognises the role of an avant-garde, even as a minor practice, that proposes works in opposition to the domain of the real.¹⁰ These projects, implicitly unrealised because of their speculative status, suffer the prejudice that their propositions about how architecture might 'be' is vitiated by the imperfect assumptions they

make about what is possible. But while this objection assumes that the final state of all speculative projects is a material reality within the actual world, clearly many are never intended to be pursued to that end. More importantly, value is attached to the propositional 'world' that the projects seem to inhabit and imply through their existence *qua* propositions. In modal logic, these alternative states of affairs are termed 'possible worlds' since they require there to be a 'world' that differs from the actual world, yet sustains necessary and sufficient conditions for this transgressive proposition to exist and be recognisable as 'a' world. So that they are not completely meaningless, if this were possible, they share some measure of truth conditions in their knowledge base that is consistent with the actual world. Modal logic itself, as we will see, engages directly with expressive contexts in which fictionality is a core component of the propositions – whether directly in the 'worlds' created by fiction (including architecture), or in cases of historical revisionism in which alternative historical circumstances (might) have recognisably changed the present. These conditions are part of a spectrum of fictionality and counterfactual speculation that both tests the legitimacy of the present and the possibility of alternative views of the future.

A high castle

A common example within modal logic is the proposition that Germany won the Second World War, and that a number of re-appraisals of geo-political circumstances would follow. *The Man in the High Castle*, a novel by Philip K. Dick, pursues this very premise, speculating on the possible behaviours and actions of American citizens in the context of occupation by German and Japanese forces.¹¹ While Dick's novel is complete in the world it presumes and proposes, irrespective of actual world conditions, the tension in the narrative comes in part from the possibility that there may have been a circumstance that made real the conditional chain of events assumed and proposed.

Modal logic, then, is interested in the intellectual behaviour we engage in when we make propositions that have no extensional legitimacy (truth claims) because, in our example, there are no actual world referents that can be pointed to in which Germany won the Second World War. It does so because the exercise makes sense as a demonstration of transposition in logic. If/then statements describe a causation of events even if there is no empirical evidence of their possibility. Indeed, the entire narrative of works such as Dick's, and arguably of all fictions, is based on this premise.

The purpose of transposing the complexities of a narrative into propositions that can be examined for their extensional properties is that it allows for scrutiny of how expectations of causation are maintained. So, for higher order (more complex) propositions the location of invalid components of the proposition are clearer. For the proposition: Germany won the war and occupied the United States, it can be expressed as:

$$\exists x, (x,W) \vee (x,O)$$

There exists (at least one) world in which Germany won the War (W) and was the occupier of the United States (O).

The first component of this, existence, can be looked at through a specific term: the existential quantifier (\exists). In symbolic logic it is used to set out the initial proposition, 'There exists...', such that ' $\exists x$ ' means 'There exists x' or 'there is at least one x'. The existential quantifier allows us to temporarily investigate a possible world in which this logical sentence is extensionally true. Usually the description of the premise allows users to isolate and identify components of the proposition that have no actual world referent, distinguishing between the robust and the flawed components of a proposition. For example, a set of propositions about economic behaviour may suggest that past behaviour of consumers will entail

future patterns, meaning there can be confidence in modelling practice that is based on as few conditional propositions as possible. Tacit knowledge of behaviour is then interrogated by a network of conditionals that form a behaviour tree and which allow for counterfactual speculation on alternate behaviour. Further, when discussing the assumptions and transpositions within fictional narratives, the degree to which suspension of disbelief of existential referents is assumed or modified is crucial to the quality of the narrative and in particular its (the narrative's) ability to withstand claims of cognitive dissonance.

The existential quantifier and domain of discourse

So, if it is unfortunately tedious to try and define what architecture 'is', the process of ruling what may be relevant or not in a definition can at least lead us to some interesting questions on the methodology of how architecture exists, or how we make propositions about architecture that are true. We may also ask how we make propositions through architectural projects which remain meaningful when they are presented in a context in which they imply a non-actual possible world. This can be done by employing some basic structural characteristics of philosophical logic commencing with questions of existence, sense and reference.

As we have seen, when we consider the question of how we recognise characteristics of a building or proposal, we can begin to set out a series of truth claims that determine the 'set' of properties that we recognise to be relevant. For the multi-storey building described above, we can imagine a Venn diagram in which 'vertical orientation', 'repetitive floors' and 'attached to the ground' are some of the intersecting sets that we could determine. Clearly the greater the number of these sets and the more specific they are, the more finely tuned and less ambiguous is our characterisation.

Why is it necessary to think of worlds being ‘actually’ possible rather than simply understanding that they are definitely not-actual, they are principally fictional and not to be believed in any meaningful way, and need not be considered a possible world? The answer is in the insistence that there are maximally consistent logical consequences in the possible world that may be inspected for their congruency with the actual world. The greater the inspection and the more legitimate, or in the terminology of Doležel ‘textured’, is their claim on actuality the more the possible world must be examined to determine the texture of its fictionality.¹² For example, imagine a project focused on a condition or state of affairs such as the resurrection of Sarajevo following the warfare of the 1990s, a project that is not known to be possible but becomes so. The original circumstances of Lebbeus Woods’s proposals, published in *Radical Reconstructions*, was the ongoing siege of the city that he witnessed in 1993. His architectural proposals were the outcome of ideas on reconstruction that might have been, but were not necessarily, possible.¹³ The fact that they did not eventuate is irrelevant to the purpose of the project, which is to show states of affairs, a possible world, in which alternate outcomes are possible, and which contains a network of implications for what ‘reconstruction’ could look like.

Speculative architecture – fictionality

Generalising on Woods’s project (and those like it) the question then emerges, how is this relevant to architectural practice and to the thematic discussions that accompany speculative architectural projects? What sort of approach can or should we adopt in identifying those qualities in the project that are most notable and potentially relevant to actual world properties? Or alternatively, how do speculative projects maintain a distance, a fictionality, from the actual world knowledge base?

So, for speculative projects that implicitly propose a series of counterfactual states of affairs that

legitimate their premises, there are five questions that can be asked:

1. How real are they?
2. How do we discuss them?
3. What proof of existence is necessary for them to have extensional legitimacy?
4. What propositional chains do they entail?
5. What are their claims on ontological commitment?

Addressing these questions requires a clear understanding of the relationship between the logical status of possible worlds and the rhetorical aspects of fictionality they employ. Fictionality itself is a subject of study within narratology and one of the principal contexts in which the interests of modal logic and narrative studies connect. But it is also concerned primarily with the exploration of texts as opposed to propositions. There is considerable debate on the methodological differences between fictionality and possible world analysis, and one of the more trenchant criticisms by Paul Dawson points out that while texts may contain propositions within them, they are not undertaking the same kind of testing of referentiality that logical propositions do.¹⁴ It is in this context that architectural projects occupy a special space between literary fiction and logical propositions since they clearly illustrate possible worlds that entail specific propositions with extensional referents concerned with alternative architectural realities.

How real are they – extensional and intensional referents

In a complex propositional world such as that of narrative fiction or of fictional worlds (states of affairs), there is a question regarding the extensional expectations of that world. It is important to ‘believe’ that the apparent qualities of all entities are real in their world, and that that world, in the absence of information otherwise, adheres to the qualities of the actual world. In their ‘Ten Theses about Fictionality’ Nielsen, Phelan and Walsh propose that

a core aspect of fictionality, thesis number eight, is that there is a double exposure of the real and the imagined.¹⁵ This means that there is an instrumental function present in some textual fictions in which the imagined state of affairs has an actual world relevance as a non-actualised possibility. Whether this is clearly an extensional (i.e. metaphorical and semantically communicated) proposition for the actual world, or an intensional proposition for a world in which the proposition is true (i.e. has real referents) is not clear in their account. Their example is Martin Luther King's 'I Have a Dream' speech in which he famously speculates on a vision of American society that may come. In this context it is possible to suggest that King is referring metaphorically to the actual world and is not seeking a clear extensional referent, a criticism that Dawson makes.¹⁶

A better example, arguably, can be derived from examining the complex propositional structures within speculative architectural projects, since the nature of their visual textuality presents a world composed of extensional referents. Projects of this form create a reality that inherently presents, within the limits of the media, a maximally consistent possible world. Indeed, when studying projects such as Pamela Tan's *The Soil City*, it is clear that the imaginary landscape/cityscape exists within a world in which its context, Greenwich specifically and London generally, is recognisable. [Fig. 1]

In the alternative, it might be suggested that projects such as these are complex metaphors for an existing, or possible, state of affairs in the actual-world Greenwich. In fact, to present the work as being inherently metaphorical creates an unnecessary level of interpretive complexity and inherently devalues the texture of spatial and material reality, the extensional referents, that the work presents. And although it seems something of a suspension of disbelief to argue for the presence of a possible world in which these images are true propositions,

it is no more of an effort to treat them as accurate within the maximally consistent fiction of *Soil City's* London in the same sense that Dickens's London is the location where the events of *Little Dorrit* take place. To dismiss the images as extensional (semantic) referents to an 'other', real version of London is unnecessarily complex since there is a clear intention for the project, as with the book, to be read as indivisible and coeval from the existing city.

It is in this context that we must be completely clear about what possible worlds are. Possible worlds are not present in some other part of our universe since they are causally independent of our own, you cannot travel to them. Further, possible worlds are the consequence of the existence of modal statements about the possibility of other states of affairs in which these propositions are true for that world. They are not the same as semantic fictions as discussed above when considering their intensional relation to the actual world, but it can be the case that fictions can be composed of complex modal statements that have extensional referents in relation to the possible world they adhere to. Simply, this means that architectural projects are maximally real in their world (their intensional properties) whilst also displaying extensional referents that make them appear to have family resemblances to other worlds, including our own. It is the argument of this article that speculative architectural projects, and their ilk, are specifically designed to employ the facility of possible-world modality, since their *raison d'être* is the modal propositional statements they infer.

Further, another aspect of narratology's definition of fictionality, when considered within the possible-world model of analysis, is one of reality, consistency and logical entailment. Clearly fictional narratives employ forms of logic to ensure that the actions, behaviour and events of a narrative are semantically coherent and that predictive propositions are non-trivial. But how is this expressed in a

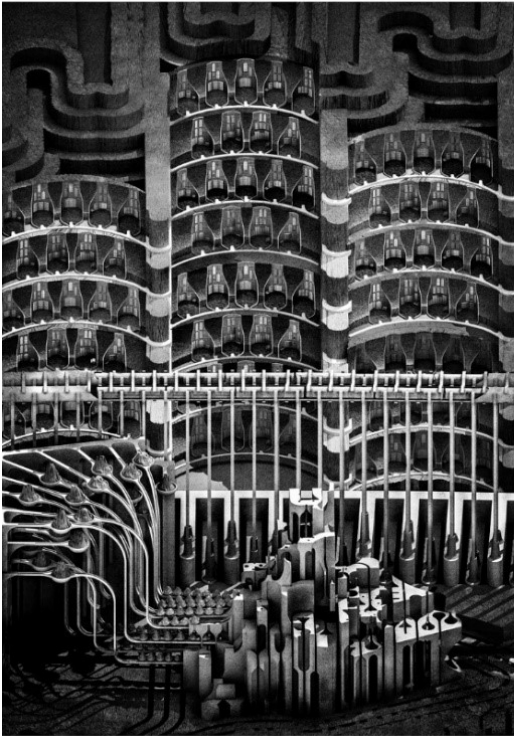


Fig 1: *The Soil City*, Pamela Tan, 2015. <http://superarchitects.world>.

logical form that captures the consistency and non-triviality of fictional (non-real) states of affair? Within modal logic, this is through the use of 'possibility' and 'necessity'. This is an important consideration when examining architectural projects, because of the tradition of assuming causation (that things are designed to happen) within projects. Moreover, the quality of the texture of their fictionality, as above, can be examined to judge if the causal world they imply is non-trivial.

Possibility and necessity

Possibility and necessity, when first viewed through the methodology of modal logic, document the presence of extensional referents that are implied in possible-world states of affairs, but without carrying with them the weaker claim that they are only 'fictionally' true in that (and only that) possible world. In modal logic, these conditions are expressed thus:

- W – necessarily true in every possible world
- ◇W – possibly true in some possible world

In essence, these quantifiers respectively capture the necessary conditions for modal statements, including that of non-contradiction for example – that something can be both 'x' and 'not x', as well as helping define the characteristics of a possible-world proposition that we may be interested in. If it is necessary that 'x' is possible in some possible world then we are closer to recognising the difference between required and contingent aspects of a world. Often these required aspects are those that are relied upon to be true for both the actual world and the possible world of the architectural project.

So if many speculative architectural projects exist in some intersection of the real, actual world and the world(s) of their making it is clear that there are propositional claims inherent in the possible worlds they describe that are not indifferent to the actual world. For example, in similar fashion to *The Soil City*, Samee Sultani's *Mute Peregrinations Through*

a Narrow Conduit, locates itself in proximity to Shark Island in Sydney Harbour, utilising the relative isolation of the island within a major city as a starting point for its narrative on a museum of ambiguity.

In this scenario, there are overt requirements in the project that it is the task of the analyst/critic to discern and state. What is generally and inexactly called 'context' in architectural projects in fact comprises the necessary non-modal and modal propositions that ground the discussion, most of which are tacit but a number of which are strategically shown. [Fig.2]

Possible and likely

For complex possible worlds, the task of describing both modal and actual qualities within the states of affairs can constitute a dependency chain of propositions about that world. As a proposition is a claim for existence, it is important that the chain of propositions avoid unnecessary circular statements of the type: 'It is true, because it is in this world'. Fine-graining the analysis of propositions helps identify the necessary and desirable fictional and non-actual properties of a proposition chain. The transformation of modal propositions regarding a possible world gain plausible actuality as a consequence of the re-expression of propositions about the fictional world that are non-modal. This is also, as above, a key point of difference between this approach and that of hermeneutics.

The London of *Little Dorrit* is described within the fiction of the text, just as Tan's Greenwich and Sultani's Sydney Harbour are situated in a greater context of necessary properties. Yet it is the actual London of the nineteenth century that Dickens refers to and which may be described in non-modal terms without injuring the consistency of the text's fictionality. This is an important aspect of modality within architectural projects as well as within fiction. For in both there is the expectation that further conditional propositions, how a character will act in



Fig 2: *Mute Peregrinations Through a Narrow Conduit*, Samee Sultani, private collection, 2014.

the next chapter or what the consequences of this design for its host city might be, are of relevance for the coherence of their propositional chains.

Summary

In summary, the familial resemblance between fictional and modal analyses of the coherence of possible world projects means that there are considerable gains to be made in understanding how they function. Moreover, we can understand that the prejudicial claim that the fictional, or worse fantastical, aspects of their worlds necessarily mean they can be ignored is untrue. In fact, the intuitive argument that projects such as these exist and are eloquent inventions provides a compelling demonstration of the importance of imagination in the design process. Furthermore, whatever transgression of the real they provide, the more attentive we are to the chain of well-formed propositions they infer, the more we can understand the process of their coming to being. The process of determining their deep logical coherence, as a description of a world validates their coherence in our world.

Postscript – ontological commitment

Although outside of the parameters of this paper given the complexity of the subject matter, the question of how ontological commitment occurs for both a reader of fiction and for a 'viewer' of an architectural project can be productively analysed through the lens of modal statements about possible worlds. Further, in architectural projects it is quite possible to determine a narrative of actions and behaviour that the work states and implies. The presence of the viewing subject, properly managed, can entail an ontological commitment of the viewer into the narrative of the possible world.

Speculation on the required or desirable behaviour of the reader/actor can be supplied by both meta-textual instructions and by the apparent performance requirements of the environment, both of which are assumed modes of engaging with the

work. Modal and non-modal propositions about the ontologically committed reader/actor can follow the same form of analysis as propositional chains regarding the states of affairs of the possible world.

Within possible worlds, the presence of characters/agents implies functionality and causality of their actions and beliefs. In fiction there are three world forms, or possible world ontologies, that can be speculated:

1. the epistemic world (the world of propositional chains developed from non-modal and modal propositions)
2. the desire world (propositional chains regarding the desire landscape of the actor/reader)
3. the obligation world (propositional chains regarding the performative obligations of the actor/reader).

So the next step for this form of analysis, implicit in some architectural projects, is the choreography of desires and obligations by agents within that world. Assuming that a maximal non-modal series of propositions exists for that possible world, the performance of actions can evolve from a static to a performative engagement.

Notes

1. Gottlob Frege, *Conceptual Notation and Related Articles*, trans. Terrell Ward Bynum (Oxford: Oxford University Press, 1972); Bertrand Russell, *Principia Mathematica* (Cambridge: Cambridge University Press, 1903).
2. Saul Kripke, *Naming and Necessity* (Cambridge, MA: Cambridge University Press, 1972).
3. David Lewis, *Counterfactuals* (Cambridge, MA: Harvard University Press, 1973).
4. Lubomir Doležel, *Heterocosmica: Fiction and Possible Worlds* (Baltimore: Johns Hopkins University Press, 2000).
5. See particularly, Robert Cowherd, 'Notes on Post-Criticality, Towards an Architecture of Reflexive Modernism', *Footprint* 4 (Spring, 2009), 65–76.

6. Bernard Cache, *Earth Moves: the Furnishing of Territories* (Cambridge, MA: The MIT Press, 1995).
7. 'Forward chaining', a term used often in business systems, derives from the principle of *modus ponens* in propositional logic. The classic demonstration of this is in Alfred Tarski, *Introduction to Logic and to the Methodology of the Deductive Sciences* (Mineolo, NY: Dover Publications, 1946).
8. L. Garagalza, 'In the Footsteps of Hermes: The Meaning of Hermeneutics and Symbolism', *Parrhesia* no.16 (2013), 1–13. Garagalza gives a succinct description of the hermeneutic process. The most influential argument for hermeneutics is Hans-Georg Gadamer, *Truth and Method*, trans. W. Glen-Doepel, trans. revised by Joel Weinsheimer and Donald G. Marshall (New York: Continuum, 2004 [1960]).
9. Diller Scofidio and Renfro, Blur Building, Exposition Pavilion: Swiss Expo, Yverdon-les-bains, 2002, <http://www.dsrm.com>, accessed 10 May 2016.
10. The 'domain of the real' here refers to and acknowledges both the well-formed propositions about how well proposals accord with actual world references, and also analogously, the idea that the 'real' is a contested space of appearance in discussions that flow from Marx, Althusser, Derrida, and, to an extent, Freud and Lacan.
11. Phillip K. Dick, *The Man in the High Castle* (Boston, MA: Mariner Books, 2012).
12. Lubomir Doležel, 'Possible Worlds of Fiction and History', *New Literary History*, 29, no. 4 (1998), 785–809.
13. Lebbeus Woods, *Radical Reconstructions* (Princeton: Princeton Architectural Press, 2001); Lebbeus Woods, 'War and Architecture: The Sarajevo Window', <https://lebbeuswoods.wordpress.com>, accessed 22 May, 2016.
14. Henrik Skov Nielsen and James Phelan and Richard Walsh, 'Ten Theses about Fictionality', *Narrative* 23, no. 1 (2015): 61–73, and Paul Dawson 'Ten Theses against Fictionality,'" *Narrative* 23, no. 1 (2015): 74–100.
15. Nielsen, Phelan and Walsh, 'Ten Theses', 68.
16. Dawson, 'Ten Theses', 90.

Biography

Sean Pickersgill teaches and conducts research at the University of South Australia. He has published extensively on the intersection between digital culture and contemporary developments in architectural design. Currently he is undertaking research projects both on enhanced Virtual Reality experiences, and a book on the philosophy of digital architecture.

