**Introduction**

# Scaling Up

## The Many Worlds of the Architectural Model

Mark Morris and Mike Aling

The meaning of 'model' can range from the loftiest notions of paragons and ideals through to the practical operations of gluing cardboard into a 3D form, through to the most complex of digital constructions. The spectrum of what might constitute an architectural model continues to stretch and to be redefined. It is increasingly difficult to pigeonhole the architectural model as a singular object or method in the 21st century. With the ubiquity of building information modelling (BIM) in the profession, the processes of modelling and the construction of models are now arguably the dominant mode of production. We are reaching a point where every building is born a digital model, concretised in the phenomenal world over time like the slow setting of a cast. The advancement and availability of 3D-modelling software has also allowed designers to be evermore ambitious with their models, to the point where entire imagined and digitally constructed worlds can thrive. This issue of *AD* does not attempt to clarify what an architectural model might be today; it aims to discuss a new shift that involves how the model sits in a world of its own making – as a 'worldmodel'.

**Recent History**

Writing on the architectural model had its 'boom' moment in the mid-2000s. These works often opened by clarifying their engagement with this most slippery of terms. In both Albert C Smith's *Architectural Model as Machine: A New View of Models from Antiquity to the Present Day* (2004)[1] and Karen Moon's *Modeling Messages: The Architect and the Model* (2005),[2] for example, the discussion is pinned firmly to the architect's physical model. Many of the writings were directly inspired by the preceding 'Idea as Model' exhibition of 1976, however this exhibition took a decidedly different tack. The exhibition was curated by Peter Eisenman and presented physical model works from a large number of the US architectural vanguard of the time at the Institute for Architecture and Urban Studies (IAUS) in New York, with the aim of promoting the architectural model as capable of more than communicating proposals to clients in miniaturised (and often simplified) form. These artefacts were intended to become works in their own right, beyond the representational, as 'conceptual models'. However, in the delayed exhibition publication of 1981, Christian Hubert declared that this intention was always flawed, and that the autonomy of the architectural model was an impossibility at the time due to its intractable relationship with the subject/proposal that it represents.[3] The 'Idea as Model' project was a ready response to Arthur Drexler's 1975/6 'The Architecture of the École des Beaux-Arts' exhibition at the Museum of Modern Art (MoMA) in New York, which, naturally, glorified the drawing. Both shows contributed to postmodern architecture, the scrappier one punching well above its weight.

In the decades that followed, model interest swung towards establishing their provenance and gathering interest in preserving them as objects of study. Dean of the Center for Advanced Study in the Visual Arts (CASVA) of the National Gallery in Washington DC, Henry A Millon's exhibitions and catalogues on Renaissance and Baroque architecture from the mid-1990s included extensive scholarship around the few extant models from those eras. Tellingly, these works were published before the near-ubiquity of the digital model, perhaps to reassert the importance of the physical model in a time when it was evaporating into pixels. There were of course exceptions to the model-as-physical rule when writing on the model in the 2000s. In *The Architecture of the Model* (2006),[4] for example, Patrick Healy opened up the term into its broadest sense, moving from Plato to

Deleuze and back again. Today architects have come to accept 3D-printed and other digitally fabricated models as standard outputs, often forgetting their one-time novelty.

(Fig 1 and fig 2)

**Worldbuilding and Worldmaking**

Worldbuilding is the practice of constructing imaginary worlds. Long associated with fantasy epics and para-literatures, the concept has burgeoned into a field that has also encompassed media studies, film and cinema, video games studies, urbanism, landscape and, of course, architecture. Mark JP Wolf has written extensively on the subject and is joining the debate in this issue. Otherwise known as 'subcreation' or 'conworlding' (constructed worlds), the success of these fabrications relies on their consistent upholding of self-instigated internal rules and logic systems. Architecture has a complex relationship with worldbuilding: architects often imagine a slightly newer version of our current world, while being intrinsically tied to its realities. It is this propensity to imagine new world spaces not necessarily tied to the actual existing world that we increasingly see in the making of architectural models.

There is the danger that worldbuilding becomes a catch-all term for any imagined worldspace. And while there is no discernible difference between 'worldbuilding' and 'world-building', the term 'worldmaking', however, is distinct. Worldmaking is discussed in philosopher Nelson Goodman's *Ways of Worldmaking* (1976)[5] as a form of treatise on how ideas affect the production of the world (in all of its guises, not solely the haptic and tactile). Architects arguably have a close association to Goodman's notion: they are in the business of producing design imaginaries that act as catalysts for change in our actual (but not necessarily phenomenal) world(s).

(Fig 3)

**Scales of Inquiry**

This issue of *AD* was largely written during the pandemic lockdown. Rather than that circumstance being a hindrance, it seemed to focus the minds of contributors and influence some thinking on worldmodelling. Christian Hubert (pp *xx–xx*) explicitly makes this case, finding the timing of the development and thinking around worldmodels aligned to growing awareness around the fragile ecological state of the planet. Climate change, political turmoil and social upheaval prompt a turning towards worldmodelling as a coping mechanism, both as escapism and a speculative space for testing ways to heal the planet. Hubert puts his case in the context of his earlier observations of models asserted in his influential 'Ruins of Representation' essay featured in the 1981 *Ideas as Model* catalogue.[6] In that 40-year gap, Hubert finds a proliferation of worldmodel thinking.

(Fig 4)

Mark JP Wolf is arguably the world's leading scholar on the subject of worldbuilding. In his article (pp *xx–xx*) he returns to his earlier passion for architecture, and discusses the many ways in which the architectural model has, and continues to, operate as a worldbuilding device. The appeal of miniature architectures, both actual and virtual, is discussed in relation to his theories on worldbuilding.

(Fig 5)

Co-founder of Unknown Fields, Kate Davies looks to how world models or slices thereof can be expressed in different media (pp *xx–xx*). Film and video, she claims, are especially adept at

communicating not just the look of alternative worlds, but their reason for being. Atmosphere, datascapes, duration and narrative make such models seem alive.

In his last penned essay (pp xx-xx), the late theorist Mark Cousins points out the telling differences between *a* world and *the* world, and the useful creative friction between the two. His unpacking of the terminology of worldmodelling brings out salient arguments and the conceptual minefields. The endeavour reveals the tenebrous hold we have of any world, and how a world-as-construct is so easily deconstructed.

(Fig 6)

FleaFolly architects (pp *xx–xx*) founded their practice with the agenda to explore the potential, and limits of narrative-driven architectural models. For them, the model is the architecture, not solely a representational vehicle for a yet-to-be-realised proposal. They take us through a number of their more recent projects that increasingly blur the edges between modelling, installation and architecture.

Historian Chad Randl offers a very different approach to worldmodelling through his research on remodelling (pp *xx–xx*). Every remodel, he contends, is another reality, an alternative world to what was before. Scale has little to do with this qualification of our home as a model of the world; a remodelled interior, a rearranged mantelpiece or shelf. He reminds us that all worldmodels are remodels, as they are all built over and include fragments of preceding ones.

Directing the Architectural Association Design Research Lab (AA DRL) in London, Theo Spyropoulos considers a series of model investigations that move, sense, transform and amalgamate into architectures, cities, territories and worlds (pp *xx–xx*). These are smart models of potential and agency, each a world unto themselves, and each capable of spawning a world.

(Fig 7)

Following on from their monograph *The Model as Performance* (2018)[7] , Thea Brejzek and Lawrence Wallen (pp *xx–xx*) turn their attention to built scenography as both a model of a world and as a model for a world. They observe that through deliberately unfinished architectural fragments, the process of worldbuilding has been intentionally interrupted, and these model fragments operate as a self-referential yet autonomous models that provoke discourse between object and viewer. James A Craig and Matt Ozga-Lawn, who co-run the architectural practice Stasus, discuss recent projects that utilise the nature of familiar objects and their deterritorialisation to create complex, performative and imaginative architectures through partial worldbuilding, inferred meaning and mixed-media narratives (pp *xx–xx*).

Walking the line of the prime meridian, Ryan Dillon reveals that the most effective way to model the world is to map it first (pp *xx–xx*). Trudging around Greenwich, London, he finds anomalies and discoveries around what, if anything, should be straightforward. As he reminds us, cartography is creative, and every map a worldmodel. One thinks of the complicated fictive maps of JRR Tolkien or George RR Martin, the latter literally becoming a world model in the famous opening sequence of the television adaptation ‘Game of Thrones’.

Phil Ayres discusses his recent EU-funded research into bio-hybrid architectures and argues for the worldbuilding potential of ‘coupling’ architecture to novel biological systems. Through this research we see new models emerging of architectures inspired by bacteria, mycelium and insect behaviours. Art historian Kathy Battista showcases a number of contemporary artists that produce models. She

focuses on how virtual reality is an ideal speculative space, perhaps *the* medium for worldmodelling, that opens up a number of architectural possibilities. She notes the accessibility, economy and open-endedness of VR works and, as Hubert also suggests, our increasing willingness to linger in the virtual.

**Flipping the Coin**

As much as our roles as guest-editors of this *AD* have been bound up to reaching out to others for their views and expertise on the subject of worldmodelling, much of the joy in this project was had in putting forward our own statements on the topic, for example in examining the history of the British model village (pp *xx–xx*). Originally the invention of architect Charles Paget Wade at the turn of the 20th century, model villages have long fed into our cultural psyche, often bound up in the twee and retrograde. An ongoing model village project for Greenwich, London, is discussed in relation to how this seeming innocence might be misplaced though, and how these peculiar enterprises of reactionary architectures, urbanisms and politics might signpost opportunities for how architectural models might function as worldbuilding exercises.

(Fig 8)

'A Paracosmic Project' (pp *xx–xx*) suggests how paracosms seem to answer some basic worldmodelling questions. Who is predisposed to think this way? Why is it useful to nurse a world in the mind's eye over a span of years, a lifetime? How is worldmodelling a genre of imaginative play and a basis for literary, artistic and scientific discovery? The paracosm tips in the psychoanalytic, the blurring of childhood and adult preoccupations, and questions whether such immersive and detailed thinking is not also obsessional and bound to some traumatic experience. The real pleasure found in paracosms is the interplay between fiction writing and crafting fictive worlds, between writing and designing, the storytelling through design as Kate Davies champions. Rather than being framed as a coping mechanism, could paracosmic thinking be considered a workspace in one's mind palace, a synthesis of observations marshalled to interrogate problems and suggest solutions?

**Worldmodelling**

The illustrations in this issue point to the diversity of worldmodels – spanning practice, academia and fine art – as well as the permissiveness of the term. They offer a parallel analysis and suggest how scale is still an important aspect of modelling as an economy of making, but also as a conceptual aid. Even in the paradigm of digital modelling where the subject is assumed to be 1:1, thinking through scaling is still an important, and perhaps necessary, process. If small-scale models in general lend us apprehension more readily and intuitively than, say, plans or sections, the scale of models representing worlds only intensifies this sensibility. We combine two forms of scalar benefits: one suggested by Claude Lévi-Strauss, that 'By being quantitatively diminished, it seems to us qualitatively simplified. More exactly, the quantitative transposition extends and diversifies our power over a homologue of the thing, and by means of it the latter can be grasped, assessed and apprehended at a glance;'[8] the other, more squarely, about things like world models, promised by Gaston Bachelard:

> Such formulas as: being-in-the-world and world-being are too majestic for me and I do not succeed in experiencing them. In fact, I feel more at home in miniature worlds … The cleverer I am at miniaturising the world, the better I possess it. But in doing this, it must be understood that the values become condensed and enriched in miniature. Platonic dialectics of large and small do not suffice for us to become cognizant of the dynamic virtues of

> miniature thinking. One must go beyond logic in order to experience what is large in what is small.[9]

Yet there is a firm logic to using worldmodelling to cope and tinker with the world, to expand the scope of architectural endeavour, to escape a world in trouble and hopefully return with some ways to rescue it. As Mark Cousins suggests in 'Worlds Without End' (pp *xx–xx*), to work with *the* world, one must fashion for themselves *a* world away. For architecture, arguably models are increasingly proposing less about the object, and more about the objective.

(Fig 9)



**Notes**

1. Albert C Smith, *Architectural Model as Machine: A New View of Models from Antiquity to the Present Day*, Architectural Press (Oxford), 2004.
2. Karen Moon, *Modeling Messages: The Architect and the Model,* Monacelli Press (New York), 2005.
3. Christian Hubert, 'The Ruins of Representation', in Kenneth Frampton and Silvia Kolbowski (eds), *Idea As Model: 22 Architects 1976/1980,* Rizzoli (New York), 1981, pp 17–27.
4. Patrick Healy, *The Model and its Architecture* 010 Publishers (Rotterdam), 2008.
5. Nelson Goodman, *Ways of Worldmaking*, Hackett Publishing Company (Indianapolis, IN), 1978.
6. Hubert, *op cit*.
7. Thea Brejzek and Lawrence Wallen, *The Model as Performance: Staging Space in Theatre and Architecture*. Bloomsbury (London and New York), 2018.
8. Claude Lévi-Strauss, *The Savage Mind*, Weidenfeld & Nicolson (London), 1966, p 23.
9. Gaston Bachelard, *The Poetics of Space* [*La poetique de l'espace*, 1958], trans Maria Jolas, Beacon Press (Boston, MA), 1994, pp 150, 161.

**Captions**

Fig 1
**Greg Lynn, *Satellite Worlds*, 'Other Space Odysseys: Greg Lynn, Michael Maltzan, Alessandro Poli', Canadian Centre for Architecture (CCA), Montreal, Quebec, 2010**
Partly a recollection of the moon landing, partly a sci-fi design brief, Lynn's elliptical satellite worlds exhibited at the CCA are microcosms freed of earthly constraints, but also in dialogue with Earth.

Fig 2
**Greg Lynn, *New City*, 'Other Space Odysseys: Greg Lynn, Michael Maltzan, Alessandro Poli', Canadian Centre for Architecture (CCA), Montreal, Quebec, 2010**
Model of one of a series of postulate megacities or small worlds that loop and coil around themselves. This particular world, a single continuous city, is populated through and mediated by social media. The model hovers above a mirror installed in the plinth below.

Fig 3
**Denis Maher, *City Wall-scape*, Fargo House, Buffalo, New York, 2014.**
An interior of Dennis Maher's magnum opus, Fargo House. Maher purchased the abandoned house for $10,000 in 2009. Rather than renovate, he interrogated what was left, reconfigured and exposed

the structure, and in-filled certain gaps with his packrat collection of architectural fragments and architectural toys. This room includes *City Wall-scape*, a melange of donated dolls' houses and scale models, something reminiscent of certain moments in Sir John Soane's house in London.

Fig 4

**James Lawton, The Gamification of Alt-Erlaa, Vienna, MArch Architecture, Unit 14, University of Greenwich School of Design, London, 2018**

Student projects may signpost the way for the architectural model as a methodology for imagined new versions of the world, with physical models often increasing in size and scope, perhaps partly due to streamlined digital fabrication workflow. In this project, Vienna's social housing megalith Alt-Erlaa is reimagined in a world of ubiquitous social credit, becoming a playground where all mundane activities are gamified in order to increase the wellbeing of the inhabitants.

Fig 5

**Isobel Eaton, Hotel Hypnagogia, MArch Architecture, Unit 14, University of Greenwich School of Design, London, 2019**

Through the simple act of inviting us into the large immersive interior of the model (we enter by lying on our back and sliding in on a wheeled bed-board), the viewer inhabits an alternative world where we live in a state of hypnagogia, the space between wake and sleep. The hotel encourages occupants to delight in the experience of drifting off. With no assigned rooms, beds or set accommodation, guests are induced to sleep where they settle in a series of controlled communal environments – as is the viewer, who is invited to sleep in the comfort of the model.

Fig 6

**Rebecca Tudehope, The Tsinghua Initiative, MArch Architecture, Unit 14, University of Greenwich School of Design, London, 2019**

The project reimagines Beijing's Tsinghua University as a world-leading institution in the development of BCIs (Brain Computer Interfaces), BMIs (Brain Machine Interfaces) and artificial intelligence (AI). The model suggests how the campus might become a large scale hybrid human-machine computer for innovation. This is a bottom-up design, with students at the campus actively testing and optimising the spatial design of the accommodation areas and communal hubs to become more efficient and/or more delightful. Produced in MArch Unit 14 at the University of Greenwich.

Fig 7

**Minimaforms (Theodore and Stephen Spyropoulos), Emotive City, 2016**

The project imagined a collective and adaptive intelligent system capable of constructing communities based on personal interactions and behaviours. A self-organising system or framework of smart spherical units, each merging infrastructure with inhabitation, could produce whole cities and worlds, but never as fixed assemblies. The extraordinary model reveals both the single architectural cell and one possible amalgamation of many.

Fig 8

**Mike Aling, Groenwych for DLR Model Village, Greenwich, London, 2020**

In the penultimate article in this issue, Mike Aling discusses his own model village project and suggests how eccentric British model villages have perhaps long held many of the clues as to how architectural models might be thought of as worldbuilding exercises.

Fig 9

**Wutopia Lab, *Models in Model*, Shanghai, China, 2019.**

Architecture office Wutopia Lab have recently completed the interior for China's first architectural model museum. As well as being a comprehensive collection of recent Chinese projects in physical model form, the collection is designed as a world of model proposals that together culminate into a vision of a future city named The Last Redoubt.