PROCEEDINGS OF THE
2ND INTERNATIONAL CONFERENCE
OF THE EUROPEAN ARCHITECTURAL
HISTORY NETWORK

Brussels, 31 May - 2 June 2012

Hilde Heynen & Janina Gosseye (eds.)
THE ARCHITECTURAL MODEL IN THE AGE OF ITS MECHANICAL REPRODUCIBILITY

Davide Deriu

University of Westminster London, U.K.

INTRODUCTION

The architectural model witnessed a spectacular revival in the early part of the twentieth century. The so-called ‘model boom’ followed a period of decline marked by a combination of factors: the rise of the picturesque aesthetic; the development of projective geometry; the advent of low-cost reproduction techniques; and, not least, the Beaux-Arts emphasis on drawing and painting – all of these had contributed to foster the preeminence of graphic over plastic media in the nineteenth century.\(^1\) The subsequent comeback of the model, which intensified after World War I, has often been ascribed to the modernist turn towards a new objectivity: a distinctive trait of the International Style, as Hitchcock and Johnson put it, was to privilege ‘the effect of volume’ over ‘the effect of mass’. More broadly, the practice of model making was given a boost by the introduction of lightweight materials, such as cardboard, which made miniatures more expedient than ever. The ability to examine a project in the round appealed to designers and clients alike, as the model offered not only a versatile design medium but also an effective mode of presentation.\(^2\)

A literature on model making burgeoned over the inter-war years, notably within western architectural discourse.\(^3\) Thus, for instance, in a mid-1930s article appeared in The Architects’ Journal, Kenneth McCutchon asserted that ‘models are still the most accurate medium of foreseeing a projected building’.\(^4\) A series of British-based modernist projects – by the likes of Connell, Ward and Lucas; Mendelsohn and Chermayeff – demonstrated how models allowed one to study miniature buildings from different viewpoints and under varying lightings. In short, the model provided ‘true “manipulation of space”’. Other authors sought to capitalize on the seductive power of miniatures in pragmatic ways. Among them was LeRoy Grumbine, an American designer who championed the architectural model as an antidote to what he called the ‘problem of salesmanship’.\(^5\) A well-made miniature, he suggested, could lure a client away from the financial preoccupations derived from a costly investment:

A model demonstrates the architect’s ability without the client’s cooperation. It creates a desire on the part of the client, who sees a beautiful creation without the exercise of imagination. He wants it. His mind is on the thing itself, not the cost. The psychological effect is positive instead of negative.\(^6\)

The author, who was also an expert renderer, maintained that model making should be treated like perspectival drawing, and a design proposal should not be over-detalled. This echoed the classical pronouncement made five centuries earlier by Leon Battista Alberti, who warned that an overly refined model would endanger the integrity of architecture by detracting the viewer’s attention from a design concept.\(^7\) While ‘photographic exactitude’ was not the goal, Grumbine added that pictures of models were ‘excellent for publication’ nonetheless.\(^8\) This incidental remark touched on a seemingly marginal aspect of model making which, in reality, became so significant as to take a life of its own. It is to the life of this imagery that we shall now turn our attention.

The inter-war revival of the architectural model was inextricably linked with another major development that occurred at the same juncture: the progressive alignment of architecture with the culture of mass media.\(^9\) The encounter between photography and the model unleashed a new class of images that was widely used to examine, present, and exhibit design projects as well as disseminate them in the architectural press. The boom of illustrated magazines led to models circulating widely as images through a myriad of publications. Within this context, model photography played a key role in forging the image-repertoire of modernism. While the sheer circulation of printed photographs contributed to document the exploits of modern architects, new creative possibilities were also afforded by this hybrid medium. Thus, by abstracting the model from its surroundings, it was possible to project an ideal view of architecture free from scalar constraints. Photographs were carefully framed and manipulated to transform ‘ideas into pictures’, as the artist Andreas Feininger once remarked.\(^10\) One of the best examples of this process is the model of the house designed by J.J.P. Oud for Philip Johnson’s mother in Pinehurst, North Carolina. At Johnson’s behest, it was exhibited at the Modern Architecture – International Exhibition at New York’s MoMA in 1932, where architectural models took centre stage. Despite Oud’s efforts to complete this work in time for the show, the model was reportedly shunned by visitors in favour of more elaborate exhibits. The plain cardboard miniature, however, proved to be rather photogenic, and Oud had a number of pictures of it taken in the studio. Three low-angle views, suitably cropped to eliminate all background, were chosen to
illustrate the Johnson House project in the influential Dutch magazine *De 8 en Opbouw*. These images, which emphasized the horizontal lines of the building, depicted a pristine and weightless object devoid of any contextual or scalar reference. This abstract mode of representation became fairly popular in the 1920s, yet was not the only means of visualizing architectural models to emerge at the time. Nor, indeed, was the revival of models a prerogative of the modernist avant-garde. As mentioned above, the appeal of miniatures responded to a widespread quest for new means to communicate ideas in three dimensions, one that transcended styles and movements. That model photographs constituted an extremely diverse class of images is demonstrated by the following example.

In January 1933, *The Architects' Journal* reviewed an exhibition of the latest advances in hospital building held at London's Building Centre. The article featured two projects designed by London-based architects. The first was the King's Fund model undertaken by Henry Percy Adams and completed, after his death in 1930, by his partner Lionel Pearson; the second was the project for a tuberculosis clinic in East Ham prepared by Berthold Lubetkin and Tecton. Images of models illustrated both projects, yet their representations could not have been more different. Tecton's chest clinic was illustrated by a full series of drawings - plans, sections, and perspectives - which included a view of the model encircled by isometric diagrams of the circulation patterns (Fig. 1). Such a rather functional use of model photography emphasized the formal and volumetric qualities of the rational design, which presented architecture as an autonomous object. In the reviewer's words, 'It is a work of three-dimensional design intended to stand by itself as an isolated unit.' Although this comment referred to the overall project, the photograph served to enhance the model's autonomy in the modernist vein discussed above.

An altogether different image illustrated Adams and Pearson's model. An interior view of the children's ward drew the viewer inside a space inhabited by nurses and young patients, complete with details such as painted tiles and miniature toys. Although the edge of the showcase was visible in the picture, it still offered a fairly realistic glimpse into a modern hospital interior. This make-believe effect suited the aim of an exhibit designed to attract donations for a charitable foundation. As the reviewer pointed out:

> The main object of the model is, of course, to raise money. It is therefore not primarily intended for the instruction of architects. Even so, in a model designed by a firm of acknowledged hospital experts, and in which every piece of equipment has been made to scale and in photographs quite completely deceives the eye, we cannot fail to be professionally interested in its visible workings.

The deception produced by the picture is very much the crux of the matter here. This pursuit of realism took advantage of the photographer's capacity to frame a miniature universe of its own, thereby exploiting - and amplifying - the verisimilitude of the model. A distant relative of the *trompe l'oeil* technique, this optical illusion alerts us to a use of photography that emerged in contradistinction to the modernist attitude outlined above. Here the agency of the camera was mobilised not to evoke an abstract design concept, but rather to lure the viewer into an imaginary world where a story might unfold.

A striking precedent of this 'special effect' can be found in the famous doll's house designed by Edwyn ('Ned') Lutyens for Queen Mary a decade earlier. Based on the scale commonly used for architectural models (one inch to one foot), this extraordinary miniature provided a major focal point to the 1924 British Empire Exhibition where it was first exhibited. This was a retrospective model, in that it aimed to recreate a typical aristocratic residence from the exterior decoration to the interior furniture, with perfect replicas of every detail down to the manuscripts in the library, the wine bottles in the cellar, and the

![Figure 1. Project for the East Ham Chest Clinic, London, designed by Lubetkin and Tecton for Dr Philip Ellman: isometric diagrams and a photograph of a model (1932). (source: RIBA Library Drawings Collection)](image)
toys in the nursery. In elevating a doll’s house to the rank of architecture, Lutyens turned a private pastime into a public spectacle – one that proved enormously popular. As Lutyens’s biographer Jane Ridley observed, he plunged headlong into this project at a difficult moment of his career:

With the doll’s house Ned could escape from the disappointments of the real world, creating a world in miniature where he was in complete control. That the make-believe world was shared with a real-life queen made it all the more compelling.17

This comment calls to mind the analysis formulated by Gaston Bachelard in The Poetics of Space, where he revisited the theme of miniature from the perspective of a phenomenology of the imagination. Here Bachelard argued that miniature thinking allows us to free ourselves from the psychic as well as physical constraints of dimension, engendering a distinct form of *topophilia*. Accordingly, the experience of miniature affords us a glimpse of another world; an escape into a fantastic realm where one can temporarily rest and be soothed: ‘it seems that by living in the world of miniature,’ wrote Bachelard, ‘one relaxes in a small place.’18 Hence, it is only in a state of reverie that we can truly enjoy the reassuring comfort of an another dimension, and find in the minuscule ‘one of the refuges of greatness.’19

This argument was subsequently discussed by Susan Stewart who pointed out how our perception is invariably conditioned by external factors. In On Longing, Stewart cogently argued that miniatures are always the product of social and cultural operations that help to domesticate the experience of a full-size reality: ‘There are no miniatures in nature; the miniature is a cultural product, the product of an eye performing certain operations, manipulating, and attending in certain ways to, the physical world’.20 More specifically, she observed that the miniature has a unique ability to produce a sense of spatial closure by inhabiting a microcosm with its own ‘absolute sense of scale’. Against this background, the doll’s house defines a particular type of miniature that is historically related to the emergence of the modern interior as the habitat of the bourgeois subject.21 Its defining elements of wealth and nostalgia made it a favourite entertainment for adults. It was only in the nineteenth century that it became a popular pastime for children amidst a craze for train sets and other miniature toys that were originally meant to simulate – and, thereby, exorcise - the effects of industrial progress. In this respect, Stewart observed that the Queen’s Doll’s House was designed to encapsulate the upper-class ways of life as a complete and self-sufficient microcosm unto itself.22 Not surprisingly, such considerations were totally absent from the official rhetoric surrounding this artwork. The two-volume publication issued on the occasion of its original display described it as ‘an allegory of the minuteness and intricacy of life’ that retained ‘a touch of childlike fancy’.23 The author praised the architects and craftsmen’s ability to reproduce, down to the smallest detail, a typical domestic interior that was supposed to bespeak comfort rather than luxury: a house more suitable for a ‘quiet family life’ than for ‘profuse or sumptuous entertainments’.

The visual apparatus of The Book of the Queen’s Doll’s House was part and parcel of this ‘pleasant spectacle for contemporary eyes’. A series of lifelike photographs of the miniature’s interior, part in colour, afforded a glimpse into the Queen’s and King’s mock apartments (Fig. 2).24 Here the *topophilia* elicited by the miniature verged on *scopophilia*, the visual pleasure associated with peeping into someone else’s life. While the Queen’s Doll’s House marked the climax of narrative realism in model making, its pictures invited a suspension of disbelief of a higher order: these model photographs could hardly be told from views of full-size interiors illustrated in architectural magazines at the time.25

![Figure 2. Interior view of Queen's Mary's Doll's House, designed by Edwin Lutyens (ca 1924). (source: The Book of the Queen's Doll's House, Plate XXXVII)](image-url)
In the quest for a perfect simulacrum, a key role was played by the technique of composite photography, which consisted in grafting a picture of model onto a view of the intended site so as to obtain a seamless montage. This method, also called ‘double photography’, was developed by Harvey W. Corbett during his stint as a studio tutor at Columbia University in the early 1920s. Working mainly with cardboard models, Corbett perfected what might be called the hyper-realism approach to model photography; besides adopting it in his own practice, he expounded its virtues in a series of articles for the magazine Pencil Points. Composite photography aroused interest on the other side of the Atlantic, too, where it featured in model-making handbooks such as, for instance, Models of Buildings: How to Make and Use Them, by the British architect and journalist William Harvey. Under the eloquent heading, ‘Seeing is believing’, this manual extolled the virtues of the solid in expressing those volumetric aspects of a project that could be lost in orthographic projections. ‘To those who are not experienced in this art of interpreting architectural drawings’, Harvey recommended, ‘the model is indispensable.’ Similarly to Corbett, he asserted that model photography of the composite variety was the best means of visualizing a building. To prove his point, Harvey used an artist’s impressions of the Bank of England remodelled by Herbert Baker on the site of John Soane’s original building. Not only did the photo-composition offer a more accurate representation of the project in its site, it also allowed the viewer to appreciate the architectural qualities of the building better than perspectival drawing - for, in the latter, ‘critical attention is liable to be directed towards admiration of the drawing as a picture, instead of to the improvement of the synthesis of solids and voids in the building.’ Here was the Albertian principle again, lurking in a different guise.

This literature on models sanctioned the primacy of photography in visualising the shape of things to come. While perspectival drawing was inevitably bound to reveal the traces of a subjective and pictorial depiction, the camera was seen as a superior guarantor of objectivity. Behind this assumption was a longing for a perfect architectural simulacrum which led architects to harness the three-dimensional properties of the model towards ever more sophisticated visual effects.

This brief historical overview has shown different approaches to the photography of models that emerged in the inter-war period. Diagrammatic abstraction and narrative realism stand at the extreme ends of a broad field of representation that arose from the encounter between the camera and the model. However, it would be misleading to posit a clear-cut division between two opposite camps: on the one hand, a modernist avant-garde in thrall to a conceptual imagery; on the other, a professional rear-guard with a penchant for baroque illusions. The story is more nuanced – and, arguably, more interesting. In point of fact, the aesthetic of hyper-realism appealed to a number of progressive, modernist architects as well, especially after the Second World War. The realm of visual effects expanded significantly when both model making and model photography reached new peaks of technical precision. Composite imagery was used systematically by prominent figures like Mies van der Rohe and Oscar Niemeyer, whose work was often presented through model photographs. The seamless montages realised by the Chicago-based firm Hedrich-Blessing for Mies epitomise the degree of perfection attained by professional image-makers in the 1950s. While the German architect had experimented with photo-montage since his early years, the hyper-realistic works of his American period demonstrate not only the adherence to the scale model as his preferred medium, but also the calculated use of photography as a powerful means of communication and self-promotion.

Less known, perhaps, are the composite images realised by the photographer Rafael Landau for Oscar Niemeyer around the same period. Many of Niemeyer’s 1950s projects for large building complexes, such as the Copan Building in São Paulo and the Quitandinha Hotel and Apartment Block at Petrópolis, Rio de Janeiro, were disseminated through such images. If Landau’s montages lacked the cool precision of Hedrich-Blessing’s, they made up for it with a distinct sense of narrative and sometimes even irony. These compositions set up a dialogue between the building and the surrounding landscape, an intent that was pursued also by other modernist architects in the post-war period, including Carlo Mollino and Eero Saarinen.

The realist approach to model making reached a crisis point in the 1960s, when it became associated more with technical and commercial practices than with the architect’s creative endeavour. The 1976 Idea as Model exhibition in New York marked a significant attempt to reclaim the model from its ancillary role as a surrogate building and to reinstate its vocation as a conceptual medium. But the power of the simulacrum could not be easily reined in, and a platoon of new technologies took over and expanded the realm of architectural simulation in the computer age. Today, as the architectural imagination feeds increasingly on digital media and hybrid models, the brief history charted in this paper reminds us that intermediality is not a new phenomenon, and the pretense of autonomy attached to the architectural model has long been mediated by visual media.

Endnotes

2. In parallel, the model was also adopted as a pedagogic tool by avant-garde schools such as the Vkhutemas and Bauhaus where experiments with forms, volumes, and materials became central to design education.

3. The present essay focuses on developments registered in twentieth-century western architecture, hence the emphasis on cases from Europe and the United States.


5. Grumbine had served in the US army during World War I and may have come in contact with military model-makers during a duty tour he made to France and Germany.


7. Leon Battista Alberti recommended that models should be ‘plain and simple, so that they demonstrate the ingenuity of him who conceived the idea, and not the skills of the one who fabricated the model.’ Quoted in Albert C. Smith, Architectural Model as Machine: A New View of Models from Antiquity to the Present Day (Boston: Elsevier, 2004), 28.


11. De 8 en Ophoos 23 (1932), 229. These three pictures were featured also on the cover of the same issue.

12. The two architects were partners in the firm Adams, Holden, and Pearson, which specialised in hospital design.


14. Ibid.

15. On the difference between ‘projective’ and ‘retrospective’ models, see Mark Morris, Models: Architecture and the Miniature (Chichester: Wiley Academy, 2006).

16. The latter included several miniatures of miniatures, such as a train set and even the section of a doll’s house.


19. Ibid., 155.


21. Ibid., 61-3.


24. A set of similar photographs illustrated a feature on the Queen’s Doll’s House that was published in the March 1924 issue of The Architectural Review.


28. Harvey trained as an architectural assistant with Baker; then managed his main office in Westminster in the early 1920s.

29. Ibid.

30. Stamou Papadaki’s account of the Brazilian architect’s ‘maturity and middle work’, for instance, opens with these two projects, each of which is introduced with a composite model photograph. Stamou Papadaki, Oscar Niemeyer: Works in Progress (New York: Reinhold, 1958).

31. See Moon, Modeling Messages, 113-6.