

The understanding and, consequently, the status of the terms architect, drawing and building, alter through context and time. Less recognised are the interdependencies that lie beneath their constituent parts; the drawing and the building, the designer and maker, the material and the immaterial. By reversing typical patterns of exchange, **Jonathan Hill** disrupts the security of the familiar and the certainty of the stable, and considers how drawing and building are both similar and different.

BUILDING THE DRAWING

Charlie De Bono, Urban Council Estate – Sustainable Picturesque Garden, 2004
The tenants' association proposes the evolution of their Victorian council estate to a more sustainable approach, simultaneously transforming their

environment into a picturesque agrarian landscape and functioning garden, providing a model for the reconfiguration of existing urban housing stock.

Idea, No Matter

Architecture is expected to be solid and certain, offering both physical and psychological reassurance. Bound to each other, the architectural and the material are considered inseparable. However, the immaterial is a characteristic of architecture as important and influential as the material, if less recognised. The history of immaterial architecture is tied to the origins of the (Modern) architect in the Italian Renaissance, when drawing first became essential to architectural practice.¹ Dependent on the concept that ideas are superior to matter, the command of drawing underpins the status of architectural design as intellectual and artistic labour.

Associated with manual labour and dispersed authorship, the status of the architect was often low before the 15th century. In the Middle Ages, the three visual arts – painting, sculpture and architecture – were mechanical arts ‘confined to the artisan’s guilds, in which the painters were sometimes associated with the druggists who prepared their paints, the sculptors with the goldsmiths, and the architects with the masons and carpenters’.² First trained in one of the building crafts, the master mason was but one of many craftsmen and worked alongside them as a construction supervisor.

The Italian Renaissance offered the architect a new, much higher status due mainly to the command, not of building, but of drawing, which was previously only a minor part of building production, a means to copy information rather than generate ideas. The Renaissance introduced a fundamental change in perception, establishing the principle that the drawing is the truthful depiction of the three-dimensional world. For the first time, drawing became essential to architectural practice, focusing attention on vision to the detriment of those senses closer to the material, such as touch.

The architect, as we now understand the term, is largely an invention of the Italian Renaissance. The architect and the architectural drawing are twins. Interdependent, they are representative of the same idea – that architecture results not from the accumulated knowledge of a team of anonymous craftspeople working together on a construction site, but is the artistic creation

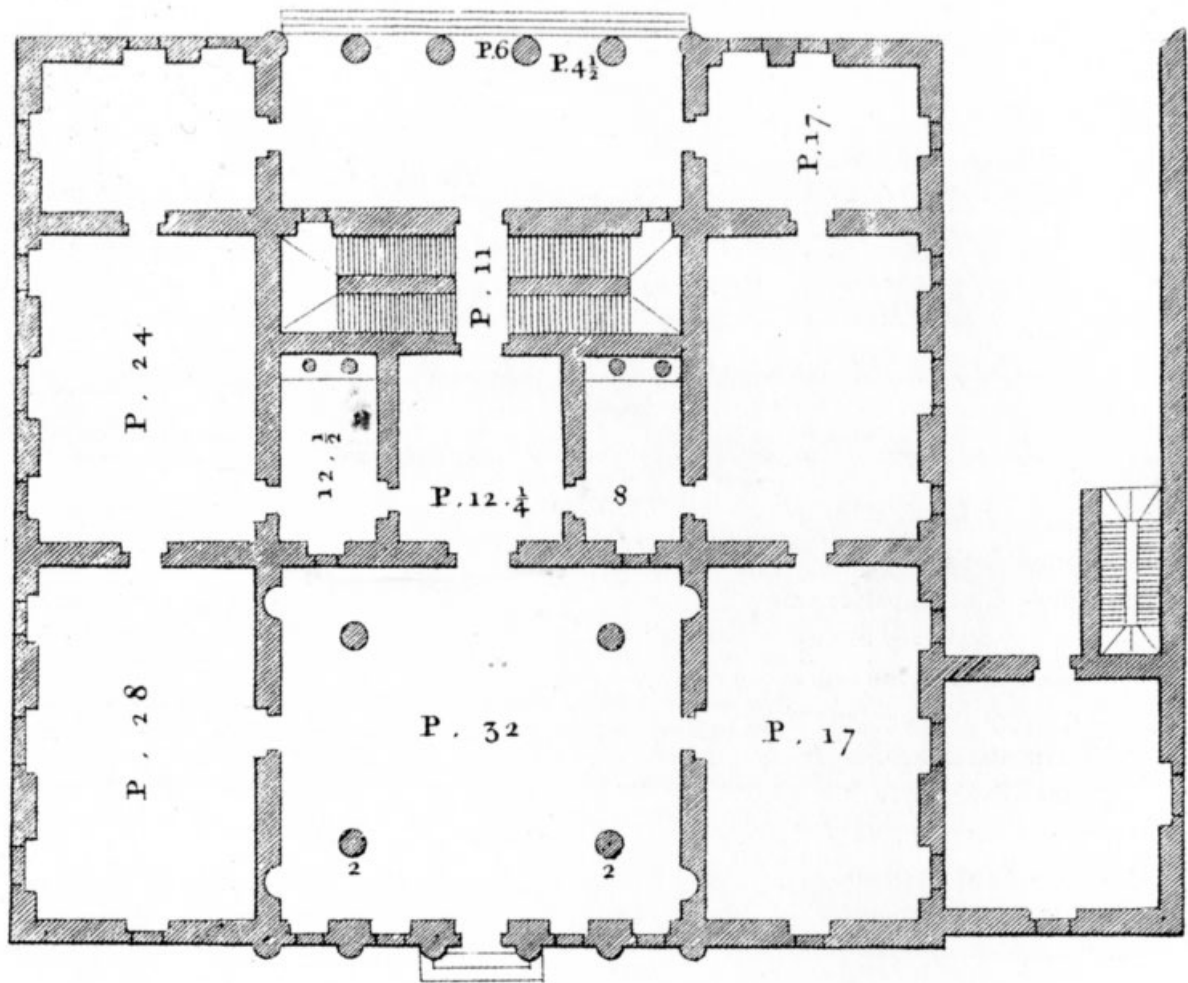
of an individual architect in command of drawing who designs a building as a whole at a remove from construction.³ From the 15th century to the 21st, the architect has made drawings, models and texts – not buildings.

The history and status of the architect and architectural drawing are interwoven with those of architectural design. The term ‘design’ comes from the Italian ‘*disegno*’, meaning drawing, suggesting both the drawing of lines on paper and the drawing forth of an idea from the mind into physical reality. *Disegno* implies a direct link between an idea and a thing. As Vilém Flusser remarks: ‘The word is derived from the Latin *signum*, meaning “sign”, and shares the same ancient root.’⁴ The 16th-century painter and architect Giorgio Vasari was crucial to its promotion: ‘One may conclude that this design is nothing but a visual expression and clarification of that concept which one has in the intellect, and that which one imagines in the mind.’⁵ *Disegno* enabled the three visual arts to be recognised as liberal arts concerned with ideas, a position that previously they had rarely been accorded.

Disegno is dependent on Plato’s assumption that ideas are superior to matter and, thus, that intellectual labour is superior to manual labour.⁶ To justify the intellectual status of art, Italian Renaissance artists accepted the status that Plato ascribed to ideas, yet undermined his argument that the artwork is always inferior to the idea it depicts. Instead, they argued that it is possible to formulate an artistic idea in the mind, produce the direct visual expression of an idea, and that an artwork can depict ‘an otherwise unknowable idea’.⁷ Asserting the pre-eminence of the intellect, *disegno* is concerned with the idea of architecture, not the matter of building. Alberti notably states that: ‘It is quite possible to project whole forms in the mind without recourse to the material.’⁸

Charlie De Bono, Urban Council Estate – Sustainable Picturesque Garden, 2004
Detail of vertical composting sleeves.





Andrea Palladio, Palazzo Antonini, Udine, Italy, 1556
Plan indicating a matrix of geometrically proportioned rooms.

The concept of design established with the promotion of *disegno* during the Italian Renaissance, and dominant since, states that first an idea is conceived in the mind, second it is drawn on paper, and third it is built. To design is, therefore, to draw. From mind to matter.

In 1563, Vasari founded the first art academy, the Accademia del Disegno in Florence. A model for later institutions in Italy and elsewhere, it enabled painters, sculptors and architects to converse independently of the craft guilds. As the academy replaced workshop instruction with education in drawing, and the architect nearly always first experiences a noted building as a representation, the architect standing before a building often sees not mass and matter, but form and proportion.

Design Through Making

The conception of design established with the promotion of *disegno* during the Italian Renaissance, and dominant since, states that first an idea is conceived in the mind, second it is drawn on paper, and third it is built. To design is, therefore, to draw. From mind to matter. Design is in actuality far more complicated, and most architects are known for their buildings not their drawings. But design through making fundamentally questions the basis of

the architect's status and practice because it includes manual as well as intellectual labour, and pulls the architect closer to construction. To consider the consequences of design through making, rather than discard drawing I will focus here on the further interdependence of drawing and immaterial architecture.

Redrawing Drawing

The architectural drawing depends on related but contradictory ideas. One indicates that design is an intellectual, artistic process distant from the grubby materiality of building. Another claims that the drawing is the truthful representation of the building, indicating the mastery of architects over building production and the seamless translation of idea into form. The architectural drawing is a projection in that invisible lines link a point on the drawing to one on the building. But the journey from one to the other is not direct. All representations omit as much as they include. The drawing, model, photograph and text provide ambiguous and elusive information – an uncomfortable thought for any architect. Rarely do marks on paper equate to marks on site. To transform the drawing into the building requires an act of translation and an intimate knowledge of the techniques and materials of drawing and building.

It is nearly impossible for an architect to build without drawing. Even if the architect begins to design without drawing, the drawing is the main means of communication in all phases of building. But the architect's focus on drawing is only a problem if it is unrecognised and the sole means of design. 'Transitional object' is a term used in psychoanalysis. For example, in the case of a child this may be a teddy bear. Its role is positive and 'a defence against separation from the mother', to be discarded when no longer needed. However, Elizabeth Wright adds that if a child is unable to make this transition, the result can be 'the fixed delusion which may turn the transitional object into that permanent security prop, the fetish, both in the Freudian sense (it disguises the actuality of lack) and in the Marxian sense (it functions as a commodity that supplies human want)'.⁹ Like a child who cannot discard a teddy bear, the architect who chooses not to recognise the differences between the building and its representations also fails to notice how they can be similar and is unable to reach a level of mature self-awareness.

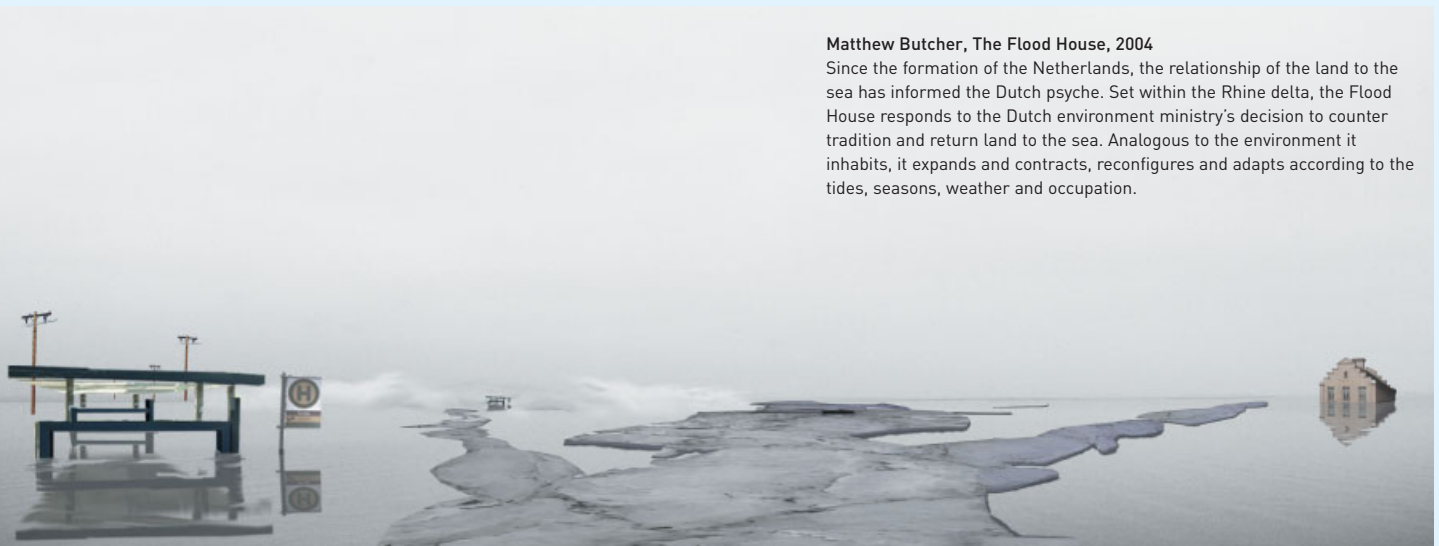
The architectural drawing has a positive role if these differences and similarities are acknowledged and used knowingly. All practices need an articulate language to develop complex ideas and propositions before or without their physical application. A sixfold investigation of the architectural drawing is necessary: first to consider how the architectural drawing and building are similar and different; second to look at drawings elsewhere, studying other disciplines that have developed articulate means to draw qualities relevant to architecture; third, to develop new ways to draw architectural qualities excluded from the architectural



Andrea Palladio, San Petronio, Bologna, Italy, 1572–9
Facade emphasising line and proportion, not matter.

Matthew Butcher, The Flood House, 2004

Since the formation of the Netherlands, the relationship of the land to the sea has informed the Dutch psyche. Set within the Rhine delta, the Flood House responds to the Dutch environment ministry's decision to counter tradition and return land to the sea. Analogous to the environment it inhabits, it expands and contracts, reconfigures and adapts according to the tides, seasons, weather and occupation.



drawing; fourth, if these qualities cannot be drawn, to find other ways to describe and discuss them; fifth, to focus on the architectural potential of the drawing; and, sixth, to bring drawing and building closer to each other.

The Drawing As Analogue

On the one hand, design through making suggests building without drawing, or at least that the importance of drawing is diminished. On the other – if to design is to draw – it means drawing through making. Traditionally, the architectural drawing is a representation, but it can also be an analogue, sharing some of the building's characteristics. When architects assume that the drawing is similar to the building, they often mean that the building looks like the drawing. But the drawing as analogue allows more subtle relations – of technique, material and process – to develop between drawing and building. A dialogue can exist between what is designed and how it is designed, between design intention and working medium, between thought, action and object – building the drawing rather than drawing the building. As a representation, the drawing can consider all the senses, but vision is usually its primary concern. As an analogue, a more direct engagement with the various senses is possible. As an analogue to building, the drawing can be cut, built, erased and demolished. If the building is to be made of artificial light, it can first be modelled in artificial light and drawn in photograms so that the techniques and materials of drawing are also those of building. In building the drawing, any instrument is a potential drawing tool that can question the techniques of familiar building construction and the assumed linearity of design, so that building and drawing may occur in conjunction rather than sequence.

Chee Kit Lai, A House for A House, 2004

'The occupant of the house is another house. The outer-public house is a house for my parents. The inner-private house is a house as a reflection of myself. I exist as the inner house in my parents' house, as every traditional Chinese boy is expected to live with his parents into their old age. The house is situated in the woods very far away, too far for any visitors.' (Chee Kit Lai, 'A House for A House', diploma, Bartlett School of Architecture, UCL, London, 2004)



Today, most architectural drawings are produced on the computer, for which significant claims are made. But often architects draw on the computer much as they draw on paper, as a means to visualise form. The conjunction of computer-aided design (CAD) and computer-aided manufacture (CAM) is quite different. CAD/CAM aligns thinking, drawing and making so that the architect can more accurately claim that to be in command of drawing is to be in command of building. In that it depicts actions in four dimensions rather than elevations in two, CAD/CAM investigates building as process, as well as the building as object. Bringing building closer to drawing and designing, it questions the 600-year history of the architect in a manner that recalls the 13th century as well as the 21st.

The construction of physical prototypes, building drawings with tangible architectural qualities and CAD/CAM are allies not alternatives, each valuable to the architect interested in the analogue as well as the representation. Particular pleasure and creative tension exist where representation and analogue overlap – drawing the building and building the drawing – one feeding the other.

Drawing the Immaterial

Building the drawing means the drawing that is a physical construction with tangible architectural qualities, and the building that is analogous to the drawing in terms of its production and perception. Conceiving the drawing as an analogue means that it can become more like the building, but it also enables the building to be more like the drawing. For example, a line drawing suggests an architecture of line not mass. Some of the most innovative architectural developments have arisen not from speculation in building, but through the translation of particular qualities of the drawing to the building. One important characteristic of the drawing – that it is associated with mind rather than matter, and is literally less material than the building – encourages architects to build with an equal lack of material, to try to make architecture immaterial. That the products of architects' daily endeavours – words and drawings – have limited physical presence, undoubtedly affects what they do and think, whether conscious or not.

In *The Ten Books on Architecture*, Vitruvius writes that knowledge of geometry, philosophy, music, medicine, law and astronomy are as important as expertise in building construction.¹⁰ He adds, however, that 'architects who have aimed at acquiring manual skill without scholarship have never been able to reach a position of authority to correspond to their pains, while those who relied upon theories and scholarship were obviously hunting the shadow, not the substance'.¹¹ Vitruvius is correct in his assumption that some architects are hunting the shadow, but not one limited to, or by, theory. Hunting the shadow, hunting immaterial architecture, is an important and creative architectural tradition invigorated by theory. The highly influential concept that ideas are superior to materials is nothing but a prejudice. One option is to dismiss it, concluding that its effect on architecture is purely negative because it denies the solid materiality of architecture and encourages architects to chase after artistic status that they will never fully attain, may not need and should question. But the desire to make architecture immaterial should not be automatically denied, and has alternative motives and positive consequences.



Juliet Quintero, *Alice's House*, 2004 Detail of curtain wall of crystallised sugar and nylon.



Juliet Quintero, *Alice's House*, 2004

The house explores the relations between the private Alice Liddell and her public but fictional other, Alice of Wonderland. Fusing electromagnetic technologies, crystallised sugar and Victorian furnishings, the gradual building of the house mirrors the identity of Alice as she frees herself from the confines of the narrative world, and returns to a reality where the architecture of the home breaks the grip of eternal childhood.

Immaterial Architecture

There are many ways to understand immaterial architecture: as an idea, a formless phenomenon, a technological development towards lightness, a representation of the sublime, a tabula rasa of a capitalist economy, a gradual loss of architecture's moral weight and certitude, or a programmatic focus on actions rather than forms. I recognise each of these models but emphasise another: the perception of architecture as immaterial, which can be achieved by either the absence of physical material, or physical material understood as immaterial. My main concern is less the absence of matter than the perceived absence of matter. Whether architecture is immaterial is dependent on the perception of the user, which relies on fiction rather than fact. Richard Gregory writes that 'visual and other perception is intelligent decision-taking from limited sensory evidence. The essential point is that sensory signals are not adequate for direct or certain

perceptions, so intelligent guesswork is needed for seeing objects.'¹² Consequently, 'perceptions are hypotheses'.¹³

The appreciation of immaterial architecture is complex and a challenge to the familiar, habitual experience of architecture. The richness of the user's experience of any building depends on an awareness of all the senses, but immaterial architecture may trigger a sense more often associated with the immaterial, such as smell, and question one more often associated with the material, such as touch. The experience of immaterial architecture is based on the juxtaposition of contradictory sensations, and is appropriate to an active and creative engagement with architecture. The complexity of the whole experience depends on the user's awareness of the sensations both present and absent. To experience the full character of the juxtaposition therefore requires an understanding of the conflict, whether pleasurable or not, an attempted reconstruction of each of the absent elements, and the formation in the imagination of a new hybrid object formed from the sensations present. An example is Yves Klein's *Fire Wall*, a grid of flames, each flower-shaped, its six 'petals' whipped by the wind.¹⁴

Immaterial Home

A recurring theme in architectural discourse states that the house is the origin and archetype of architecture, the manifestation of its most important attributes. Home is supposedly the most secure and stable of environments, a vessel for the personal identity of its

occupant(s), a container for, and mirror of, the self. However, the concept of home is also a response to the excluded, unknown, unclassified and inconsistent. Home must appear solid and stable because social norms and personal identity are shifting and slippery. Home is a metaphor for a threatened society and a threatened individual. The safety of the home is also the sign of its opposite, a certain nervousness, a fear of the tangible or intangible dangers outside and inside.

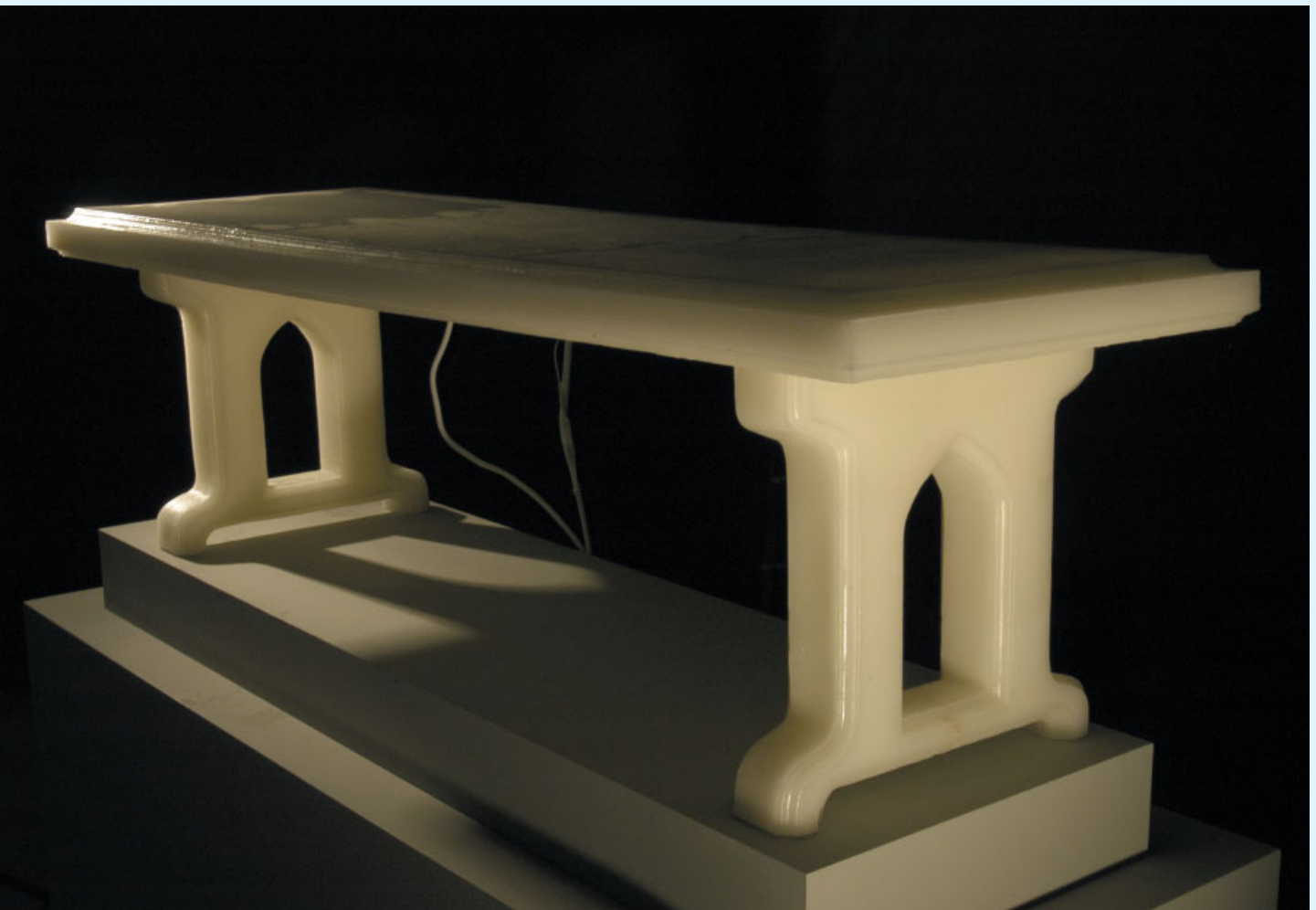
David Sibley argues that while the apparent stability of the home may provide gratification it can also, simultaneously, create anxiety because the security and spatial purification the home offers can never be fully achieved. Often the consequence is an increasingly intense need for stability, not an awareness of its limits: 'Generally, anxieties are expressed in the desire to erect and maintain spatial and temporal boundaries. Strong boundary consciousness can be interpreted as a desire to be in control and to exclude the unfamiliar because the unfamiliar is a source of unease rather than something to be celebrated.'¹⁵ Referring to Sigmund Freud's 1919 essay on the uncanny, he

concludes that 'this striving for the safe, the familiar or *heimlich* fails to remove a sense of unease. I would argue that it makes it worse.'¹⁶

Whether insidious disorder inside or lurking danger outside, the immaterial is often associated with all that is perceived to be threatening to the home, architecture and society. But the threat of the immaterial is imagined as much as it is real. The desire for a stable architecture can never be fulfilled, increasing anxiety and furthering desire for a more stable architecture. Replacing a static and material architecture with one that is fluid and immaterial is no solution, however. Instead, compatibility between the spaces of a home and the habits of its occupants is desirable. A tightly structured group of people occupying a loose spatial configuration will create tension and anxiety, as will the opposite. However, matching users to spatial configurations is no answer because it fails to take account of changing users and changing needs. Instead, a home must have the potential to be both spatially tight and loose. To accommodate evolving conceptions of the individual and society, architecture must engage the material and the immaterial, the static and the fluid, the solid and the porous. An architecture that is immaterial and spatially porous, as well as solid and stable where necessary, will not change established habits. Rather it may offer those habits greater flexibility.

Max Dewdney, *The Enigma of a House and its Furniture*, London, 2004

Sited between 33 Surrey Street and 5 Strand Lane, the house can only be rented by two couples. Furniture such as the wax refrigeration table and steam dresser transform environmental conditions like moisture content and air temperature in response to the location of each individual and each piece of furniture.





Rupert Scott, *Linnaeus' Cabinet: the Conjoined House*, 2004
The 18th-century Enlightenment scientist Carl Linnaeus initiated taxonomy, the classification of the natural world, which entered the home in the fashion

for cabinets of curiosities. A cabinet made from objects rather than containing them, areas within the Conjoined House mutate and change according to particular taxonomies: the domestic, the architectonic and the botanic.

Immaterial Practice

The practice of architects is expected to be as solid as the buildings they design. With regard to immaterial architecture, therefore, architects are understandably cautious. An architect who persuades a client of the merits of an architecture that is insubstantial and unpredictable still faces numerous difficulties to see it built, such as building regulations and contractual liability. On a more fundamental note, immaterial architecture revels in qualities – the subjective, unpredictable and ephemeral – that are contrary to the solid, objective and respectable practice expected of a professional. However, the stability of architecture and architects' practice is already uncertain and illusory.

Mark Cousins suggests that the discipline of architecture is weak because it involves not just objects but relations between subjects and objects.¹⁷ And if the discipline of architecture is weak, then so, too, is the practice of architects. But weak is not pejorative here. Rather it is the strength to be fluid, flexible and open to conflicting perceptions and opinions. The practice of architects needs to confidently reflect the nature of the architectural discipline. Architecture must be immaterial and spatially porous, as well as solid and stable where necessary, and so should be the practice of architects. Immaterial architecture is an especially poignant and rewarding challenge for architects as it forcefully confronts what they are expected to practise and produce.¹⁸ ▢

Notes

- 1 Manfredo Tafuri contends that the project of modernity began in the 15th century, not the 20th. M Tafuri, *Theories and History of Architecture*, trans G Verrecchia, Granada (London), 1980, p 16.
- 2 PO Kristeller, *Renaissance Thought and the Arts: Collected Essays*, Princeton University Press, 1990, p 176.
- 3 Architectural design is far more collaborative than this idea suggests.
- 4 V Flusser, *The Shape of Things: A Philosophy of Design*, Reaktion (London), 1999, p 17.
- 5 G Vasari, *Vasari On Technique*, trans LS Maclehorse, Dover (New York), 1960, p 205. First published in *Le vite de' più eccellenti pittori, scultori e architettori* (The Lives of the Most Eminent Painters, Sculptors and Architects), 2nd edn, 1568.
- 6 Plato, *Timaeus*, trans F Cornford, The Liberal Arts Press (New York), 1959, p 54.
- 7 A Forty, *Words and Buildings: A Vocabulary of Modern Architecture*, Thames and Hudson (London), 2000, p 31.
- 8 LB Alberti, *On the Art of Building in Ten Books*, trans J Rykwert, N Leach and R Tavernor, MIT Press (Cambridge, MA, and London), 1988, p 7. First published as *De Re Aedificatoria*, c 1450, trans J Leoni, as *The Architecture of Leon Battista Alberti in Ten Books*, 1726.
- 9 E Wright, *Psychoanalytic Criticism: Theory in Practice*, Routledge (London) 1984, p 93.
- 10 Vitruvius, *The Ten Books on Architecture*, trans MH Morgan, Dover (New York), 1960, pp 5–6. First published as *De Architectura* in the 1st century BC, it is a description of what Vitruvius thinks the architect should be and do, as much as a reflection of the actual practice and, in ancient Rome, low status of the architect.
- 11 Ibid, p 5.
- 12 R Gregory, *Eye and Brain: The Psychology of Seeing*, OUP, 1998, p 5.
- 13 Ibid, p 10.
- 14 Constructed for Klein's exhibition at the Museum Haus Lange, Krefeld, 1961.
- 15 D Sibley, 'Comfort, Anxiety and Space', in J Hill (ed), *Architecture – The Subject is Matter*, Routledge (London and New York), 2001, p 108.
- 16 Ibid, p 115; S Freud, 'The "Uncanny"', *The Standard Edition of the Complete Psychological Works of Sigmund Freud*, Vol 17, ed J Strachey, trans A. Strachey, Clarke Irwin (Toronto), 1955, pp 217–52. First published in 1919.
- 17 M Cousins, 'Building an Architect', in J Hill (ed), *Occupying Architecture: Between the Architect and the User*, Routledge (London and New York), 1998, pp 13–22.
- 18 All the projects accompanying this text, for a Public Private House, were produced in Unit 12 at the Bartlett School of Architecture, University College London, and tutored by Jonathan Hill and Elizabeth Dow.