



SCROOPE

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Architecture Journal,
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practitioners and theorists.

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architectural practice, the profession and
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REFLECTIONS ON PRACTICE-BASED RESEARCH

SARAH WIGGLESWORTH

Design research is not a new phenomenon but interest in it has gained some momentum in recent years. Evidence to support this includes the rise in the number of PhDs by Design offered by architecture departments around the UK, the RIBA's Research Awards which has a practice-based research category and the academic research assessment exercises which help determine the funding budgets for higher education institutions: for the first time in the 2007 assessment, designs and artefacts were recognised as research. It is significant that this is being promoted by those that have an established interest in the production of knowledge. If we think of architecture as being knowledge-driven, as I imagine many of us do, this is a compelling reason for developing research within practice.

Fig 1 (opposite): Detail of rooflights at dusk, Sicobhan Davies Studios. © Richard Bryant/arcadimages.com

CAMBRIDGE DESIGN RESEARCH STUDIO

INGRID SCHRÖDER WITH AFRA VAN 'T LAND & EDWARD BARSLEY

The Department of Architecture's MPhil programme in Architecture and Urban Design is a hybrid of independent research through design and a structured learning resource leading to the ARB/RIBA Part II qualification.¹ Designed for students with a distinct area of independent interest, it provides a framework for the development of an individual research topic, access to specialists from various fields relevant to their studies, and a matrix of deliverables that span a range of research and design techniques.

The course is underpinned by a commitment to environmental design and sustainability, which we believe to be essential to all stages of architectural training. These principles inform everything from spatial experience to the intelligent evaluation of a regional metabolism. The course, however, seeks to better define these terms, and to explore how they inform the design process not just spatially and technically but also socially, politically and economically. The terms 'environmental' and 'sustainable' are treated as distinct from one another and provide a two-fold structure to the course: the former being directed at the qualitative design of space, and the latter towards a strategic evaluation of a broader web of influence on an urban or regional condition. We have interpreted these as inferring two distinct scales of project and have attached them to two semesters of study.

The programme enables each student to identify a unique thesis topic and to test the possibilities of using a set of design proposals as a research tool, aiming to look outwards and address real, fundamental issues in the practical context of the built environment. It also provides a platform for bringing together research interests within Cambridge with its studio objectives. The means by which this happens is continually evolving and places the debate about the relationship between research and design at the centre of the Department. Each project is an individual exploration of contemporary issues in the built environment consolidating months of research, discussion and interdisciplinary collaboration in a final design proposal.

The course structure consists of one semester during which students focus on design and detailed analysis, an interim nine-month fieldwork period, and a second semester where they focus on regional research and analysis. These components provide an opportunity to explore distinct interests within design

practice in various settings, whilst offering a sound framework to pursue meaningful research. In this way the course addresses two scales of design: one focuses on a specific design response, and the other reflects on a larger impact of a specific proposal on its strategic reconfiguration of the surrounding context. Ultimately, the project work is structured not only to represent and describe a coherent design, but also to form a body of primary source material to support each student's thesis and research. Fundamentally, the two parts rely completely on one another.

The objective of the course also furthers students' personal understanding and direction, and in many cases has the potential to influence reality by inspiring decision makers and collaborators to think more widely about what is possible in their field. Crucially this research methodology actively engages with the specialist knowledge and resources on offer at Cambridge. This enables utilisation of the 'generalist' skills of the architectural training and offers the opportunity to assemble a team of collaborators with a diverse range of expertise, tailored to provide a rigorous understanding of each research topic.

Cambridge Design Research Studio was established last year as an evolving resource and practice incubator for graduates of this MPhil programme. It provides support for the continuation and application of student research initiatives, and a collaborative framework for the professional practice and consultancy opportunities that grow out of each student's research. This is the logical offspring of this MPhil course and reinforces the core objectives of the programme, which regard the design process as the first stage of testing the real implications of academic exploration. We treat every proposal—from the design of flood-resilient communities to the restructuring of the British rural environment—as real. Each research area enables us to confront large and challenging questions about the relationship between learning and practice, between research and design and ultimately between research and practice. As each area of research grows and informs the next, we hope to not only provide a completely unique course structure, but also to encourage a wider discussion of key issues within the larger profession.

Notes

¹ Prior to 2013 the MPhil course title was 'Environmental Design in Architecture (Option B)'. The new title 'Architecture and Urban Design' has been adopted to better reflect the breadth of content of the course and the expertise available.

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James Purkin

'The Essence of a School: Defining the relationship of inside and outside space in primary school design'



Initial State



2012 State

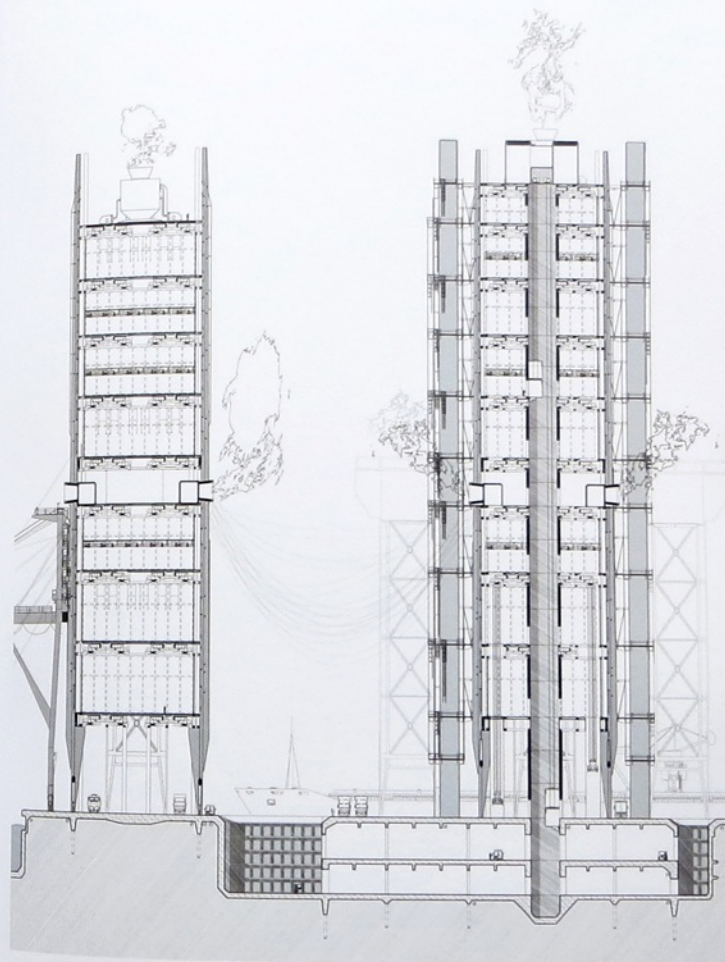


2112 State



Edward Barsley

"Transition to a Riparian Landscape: Designing a flood-resilient coastal settlement for Far Docks, Cornwall"



Stuart Beattie

"Made in New York: Exploring the potential of vertical urban manufacturing"

The School of Architecture at 1 Scroope Terrace was renamed a Department of the University in 1956. When we arrived in October 1958, student waves were being made by the 'Scroope Group' of the year above us, and the intellectual milieu was defined by the competing positions of Colin Rowe and Colin St. John Wilson (Sandy). So far as we knew both had been there forever, like Sir Leslie Martin, the first Professor. Martin had brought Sandy with him from the London County Council (LCC), but Rowe in fact arrived with us and left for Cornell University at the end of our fourth year.¹ He had already published his article 'Mathematics of the Ideal Villa, Palladio and Le Corbusier compared' and was well-known for his cultural and historical slant on the work of Corbu, which absolutely defined the critical locus of the time.² Rowe was to go on to be recognised as a great architectural philosopher and to be awarded the RIBA Gold Medal.³ It was his idea to suggest Corbu be given the prestigious honorary Doctorate by the University. Professor Martin and Henry Moore secured this. So our first year ended with the pageantry of their investiture. In Michaelmas 1959, as the procession left the Senate House for lunch at Trinity College, it was ambushed from the windows of Caius College by Sumet, Stephen and Tim Mathias, showering the great man with confetti and shouting 'À bas l'Académie!' (Down with Academia!), echoing Corbu's well-known tirade against the École des Beaux-Arts. Later, Moore and Corbu opened the Brutalist extension to the School which

had been designed by Sandy and had been under construction all of our time to that date. The Lecture Room was packed and students from the Architectural Association, who were excluded as not being members of the University, climbed trees outside for a glimpse of 'God'.

24 NC

In 2003 Sumet went to stay alone in Corbu's apartment at the invitation of the Fondation Le Corbusier. The aim was to record the character of this little-known private realm of the master and accompany the resulting impressions, most poetically drawn, with a publication from an archive of recently-discovered surrealist film shot by Corbu of his life there with his wife Yvonne and pet dog Pinceau. The apartment turned out to be a mine of great thematic material: memories of student travel to Mohenjo-daro, pivoting doors of Ronchamp, Chandigarh, and the Cambridge Lecture Theatre, fragments of coloured glass prefiguring Villa Shodhan or again Ronchamp, stairs spiralling to the light, a proto-La Tourette light-cannon, an Alvar Aalto glass vase and others. The apartment was a test bed for ideas for Corbu, where dreams were first set down. It should be remembered that his day was monastically regulated: painting in the morning, architecture in the afternoon, writing in the evening. Suitably chastened, Sumet contemplated the now-forlorn space, slept in the master's bed and watched the choreographic procession of shadows across



Fig 1 (left page) At their joint talk in the Lecture Room of the School of Architecture (Henry Moore and Le Corbusier drew each other's portrait on a scroll of paper suspended from the MacKintosh. In this picture, Henry Moore drew Le Corbusier who was seated in the front. © Richard Long

Fig 2 (left) Sumet Jumsai, Raymond Wilson and John Sergeant in front of the CUSA dome with the Lecture Room building in the background, 1960. © Sumet Jumsai
Fig 3 (above) Le Corbusier drawing the portrait of Henry Moore who was seated. © Richard Long

COMPOUND MOSCOW

NICHOLAS CHAMPKINS



Fig. 1. The twelve-lane Sadovoye ring (or Garden ring), here bridging the Yauza river is the second of four major roads that define the concentric layout of the city's growth.
Courtesy of Olga Alexeyenko

BETWEEN THE ABSTRACT AND ANALYTIC:

THE FORMATION OF A LANGUAGE IN THE CASE OF THE DOUGLAS HOUSE BY RICHARD MEIER

SALEEM DAHABREH & SAMA JABR

In the late 1960s, the Museum of Modern Art in New York brought together the work of Peter Eisenman, Michael Graves, Charles Gwathmey, John Hejduk, and Richard Meier, a group that came to be known as 'The New York Five' in the subsequent book *Five Architects* published in 1975 by Colin Rowe. Their work, with an explicit reference to the classics of Modernism in the 1920s and 1930s, especially that of Le Corbusier's villas, made the exhibition pivotal for the evolution of architectural theory and history; it produced a critical benchmark against which Postmodernism, Deconstructivism, neo-Modernism and others have referred, critiqued or subverted.¹ Among the five, Meier is the closest to the early Corbusian form, and even Meier's later buildings have all remained true to this aesthetic.² His approach is manifested in the use of Le Corbusier's Five Points, especially in the separation of skin and structure, and the articulation of a single mass regulated by geometry and proportion. To support this aesthetic approach, starting with the Smith House in the 1960s, Meier developed a set of work tactics using design elements and operational procedures that have become consistent across a wide spectrum of building types, forming a recognizable style.

Meier's style involves the interaction of spatial motifs and themes, and formal syntax. A spatial motif is defined as a general abstract concept that has no specific form but can be taken as an underlying premise for the development of a project. Spatial themes are constraints drawn from the reading of the context that specify design desiderata without specifying morphology. Meier's themes include modulation and proportionality, layering, reversal and twin phenomena, *promenade architecturale*, the colorlessness of white to dematerialize structure and to stress a situation of universality, and an a-contextual approach to design linked more to an abstract ideal process than to the real surroundings.^{3,4} A formal syntax realizes the previously undefined desiderata into defined geometric form.⁵ Meier's syntax includes elements such as stairwells and ramps, squared white-enamel skin, nautical railings, expansive glazing with aluminum mullions, glass blocks,

piano curves, and *brise-soleil*, giving his buildings a 'machine-like' aesthetic.^{6,7}

Across numerous publications, authors and researchers have sketched out Meier's formal language and its syntax: Rykwert in 1984, Frampton in 1991, Richards in 1993, Giovannini in 1996, and Cassarà in 2005, among others.⁸ This paper does not give an exhaustive review of Meier's biography, background influences, or work; rather, it presents a study of Meier's formal design language through a formal analysis of the Douglas House. The choice of the Douglas House is not coincidental; in his commentary about Meier's early houses, Morton (1973) noted that '[...] only in the design of a private house do ideas have an opportunity to become synthesized and crystallized [...] it can, in effect, stand testament to his architectural theories and design ideas'.⁹ Similarly, Meier himself comments that 'the residential commission allows one to formulate ideas and develop a set of principles that one hopes will inform future works for a long time to come'.¹⁰ As such, the Douglas House is selected because it represents the maturity and consistency of Meier's formal language in the 1970s and across his later career.

THE DOUGLAS HOUSE

The house, constructed between 1971-1973 for James and Jean Douglas, is located in Harbor Springs, Michigan. The white building, aligned along a north-south axis with four floors composed in pure geometry, is anchored on a sheer bluff overlooking Lake Michigan. It lies in sharp contrast with the pine trees of the wooded site (Fig. 1). The entry is off a quiet country road on the east side (Fig. 2), and a flying bridge spans the ravine to the front door vestibule (Fig. 3). The top floor, the only floor visible from the road, contains an entrance vestibule and roof decks that restrict the view of the lake to the west.

The layout of the house as shown in figure 4 expresses a programmatic separation of the public and private: small cabin-like bedrooms are arranged on the east side shown in light orange,



PRACTICE-BASED CINEMATIC-AIDED DESIGN BY RESEARCH

AMIR SOLTANI

Conventionally, architectural design research involves systematic and explorative methods leading to new knowledge about the design process. In mainstream design practices, the working methods are generally considered of less importance than the design product and its qualities.¹ In that sense, the act of designing is a deterministic system and therefore could possibly overlook the fact that designing involves a long and complex articulation of conceptual, instructional, and sequential processes. This deterministic vision in architecture fails to acknowledge human experiential factors in design research interactions; architectural design by research involves systematic and explorative methods which could lead to the production of new knowledge about the design process.

This paper offers a theoretical examination of experimental, cinematic-aided methods of architectural research, particularly in relation to visualising 'human-environment' interactions, as embodied in numerous case studies in the moving-image archives at the Digital Studio for Research in Design, Visualisation and Communication (DIGIS) in the Department of Architecture at the University of Cambridge. Cinematic-aided design (CinAid) is an experimental approach utilising empirical (experiential) design workshops that are evaluated in the contexts of 'narrative', 'generative', and 'simulative', particularly by means of meaningful bodily motion (gesture). This type of approach to architectural design research incorporates theme-based designerly interpretation involving practice-based approaches for explorative inquiry into performative variations of design through human bodily experiences.^{2,3}

PRACTICE-BASED ARCHITECTURAL DESIGN RESEARCH IN THE UK

One of the early definitions of practice-based research is by the Arts and Humanities Research Council (AHRC), the 1997 UK Council for Graduate Education's guide *Practice-based Doctorates in the Creative and Performing Arts and Design*, and Linda Candy's *Practice Based Research: A Guide*. In both, practice-based research is defined as an original research with the aim of gaining new knowledge through practice. A direct reference to the outcomes of the research is of particular importance in this definition. The creative outcome from the research process demonstrates an original contribution to the field, therefore setting a practice-based PhD apart from a conventional one.⁴

Examples of practice-based research include the works created at DIGIS, where 'the convergence of the three fields, identified as narrativity spatiality and digitality was used for the making of digital moving image pieces in architecture'.⁵ In an academic context, practice-based projects are those that include, as an integral part of the thesis production, an original artefact generated through practice.

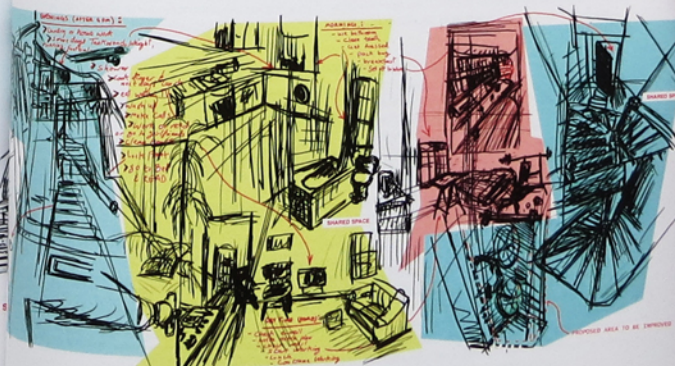


Fig. 1.1 A spatial narrative drawing sequence of a walkthrough in Hackney in London, collaged together using a projected drawing method of temporal frames from a film

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DIGIS & DIGIS

The communication of design products, visualisation of the imaginary is as influential as the expression of real space. However, the task of combining virtual simulation of the real world with the design process has been a peripheral activity. In 2000, François Penz and Maureen Thomas jointly formed the Cambridge University Moving Image Studio (CUMIS), a research group dedicated to explorations of alternative ways of visualising and communicating human interactions in spatial design production through moving image narratives. DIGIS was founded shortly after as an extension of CUMIS to deal with creative practices in architectural representation by means of theorising narrative and formal spaces in film. DIGIS also 'developed and supported the practice-based MPhil in Architecture and the Moving Image 1998-2005 [...], which was assimilated in 2006 into a new interdisciplinary MPhil in Screen Media & Cultures [...]'⁶ Part of the work undertaken by the students combined some type of interdisciplinary, practice-based case study, which in turn contributed to their final projects as well as a large archived collection of moving image clips.⁷

USE STUDY ARCHIVES

DIGIS and DIGIS have analysed architectural space for the last decade and a half, and have produced and archived over 100 moving image clips concerning hundreds of empirical case studies. For instance, *Room with a View: King's College, New Garden Road* (2001) uses cinematic language, computer-aided design (CAD) animations, and blue screen compositing techniques

to communicate a future architectural design proposal for a new building at King's College, Cambridge. The new building expressively populated the virtual space via narrative devices and mixing virtual 3D and real filmic footage. Through this example and many other case studies since 2000, CUMIS and DIGIS have developed a typology for cinematic-aided explorations of built spaces in relation to both urban and architectural narratives and discourses. Remarkably, the massive moving image archive has seen limited use; few have implemented the archived clips into their research and/or design processes. However, that situation is currently changing: through a research grant from the Isaac Newton Trust, François Penz and Andong Lu are creating an online cinematic mapping of Cambridge in relation to the archived footage, as well as utilising some of their methods in CinAid workshops.⁸

The archive can be used as a tool in environmental and architectural research, especially as related to the identity of Cambridge. The majority of the archived clips are about people's interactions with events and places in this city. The clips represent viewpoints and memories of specific moments and locations, including familiar landmarks that influenced people's lives. Moreover, the films potentially reveal an array of cinematically-supported methodologies. In the author's current research, *Archigesture: the Architecture of Gesture*, a number of workshops are developed that aim at formulating empirical design practices (through observation and experience) using moving images as the basis of architectural drawings and related visualisations, and as narrative alternatives for 3D CAD walkthroughs. Similar to the archival work explained earlier, the cinematic-aided workshops will use the analysis of film sequences to produce an



Fig 6. Megalomantis Factory Fifteen (2011). The flow of a generative cinematic-aided design process involves designer-research interactions. The generative synthesis happens through the cycle of evaluation and modification processes.

sequences. This method creates new communicative, animated representations that are advantageous for visualisation demands and research methods in generative designs.

Using CinAid methods, the poetics of expressive gestural movement can be represented through the semiotics of performance in space—that is, through relationships between cinematic practices and dramatic (expressive, performative) space. Workshops, in particular research themes such as cinematic narrative, foster designer-research interactions based on human experiential aspects of design processes. The workshop method allows students to discover new realms of sensing and envisioning architectural timespaces. Throughout the past century, many scholars and architects, from Auguste Choisy and Sigfried Giedeon to Bernard Tschumi and Rem Koolhaas—not to mention filmmakers, such as Sergei Eisenstein—have acknowledged and explored connections between film and architecture. The main objective of CinAid is to systematise cinematic and narrative techniques as design methods in order to aid research on the design process, connecting the analytical phase of research to the performance of modelling and design synthesis. The purpose is not to replace conventional CAD but

to enhance already-existing design methods and representation through an expanded cinematic visual language.

PERFORMATIVE SPACE OF PRACTICE-BASED DESIGN

The strength of CinAid lies in the performative aspects of practice-based and empirical modelling that bridges experience to design representation. We can think of 'scenography' as a performative model in an urban context; the cinematic spatial framework acts like scenographic space (staging sequential images of performance space) taking advantage of the spatial drama, for instance a city. Through film, the timespace of the city becomes notable, represented in film as layers of dynamics that give meaning to the whole, as in the narrative space where, through stories, we can understand connections among different characters and spaces. In a scenographic setting, we imagine the performance aspects of urban space. The scenographic urban setting is a space of play as well as of contemplation and the production of social spaces. The filmic exploration of a scenographic space creates an emotive space, where the spatial dynamics become evident expressively, as in cinematic narrative. An example of the emotive



cinematic architecture can be found in the digital works by Factory Fifteen, a UK based film and animation studio in London, led by directors Jonathan Gales, Paul Nicholls and Kibwe Tavares.¹² Their backgrounds range from architecture, 3D visualisation, engineering, animation and photography. They translate this to a multi-disciplinary and distinctive approach to film-making where the layers of drama create unique scenographic scenes of urban and architectural space, caught in unusual performances. It is appropriate to categorise Factory Fifteen's works as a class of CinAid; in contrast to the traditional CAD walkthrough, their works are quite thought-provokingly stimulating, taking advantage of the full control of narrative space.

The same can be said of architectural space, where the dynamic is frozen during the design drawing phase; yet we can compensate for that deficiency by animating forms so that dynamic architectural conditions are revealed through a multiplicity of viewpoints in one sequence and temporal structure. Architects and urban designers can utilise elements such as duration, trajectory, force, speed, and axial viewpoints as syntactic means of classifying a spatial language, which helps in the process of design prediction and decision. In an urban scenographic exploration, the characters of the city become

more pronounced through aesthetics and sensual layers of urban narrative, understood as a performance space.

Through human bodily experiences with architecture, the performative variations of design products manifest concerns with bodily enactment, scale, motion, and user experience. Those were central themes in the work of prolific American landscape architect Lawrence Halprin. Inspired by his wife Anna, an avant-garde dancer and choreographer, Halprin developed a method of notation for landscape drawing similar to storyboarding. Called 'motation', the method links representation and the experience of motion through landscape, emphasising the power of narrative of motion through landscape. Works such as Halprin's Sproul Plaza (1962) at the entrance to the campus of University of California, Berkeley, specifically create a combination of spaces for body movement and performance. Halprin often used the term 'chorography' to correlate the landscape to movement, as in 'chorography' to correlate the landscape to movement, as in his favourite work, the Franklin Delano Roosevelt Memorial (1997) in Washington, D.C., which also incorporated various sensory architectural features for visitors with different physical impairments. The memorial, according to historian Reuben Rainey, 'is clearly a landscape architectural response [...] forming a processional of rich narrative content [...] as in a cinematic



