ARCHIGRAM

THE STRUCTURE OF CIRCULATION

HADAS A. STEINER

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Not all [architectural] revelations have to be buildings. They could be a paragraph from Ruskin's *Stones of Venice*, or Geoffrey Scott's *Architecture of Humanism*, or even Asimov's *Caves of Steel*. But architects being the visual, graphics-besotted creatures they are, the revelations are more likely to be engraved plates in the works of Viollet-le-Duc, or the patent application drawing that revealed the essence of Le Corbusier's Maison Dom-ino, the space-cathedral sketches of Bruno Taut or the renderings of imaginary skyscrapers by Hugh Ferris, the Fun Palace drawings of Cedric Price, the colored collages of Archigram's Peter Cook . . . or Ron Herron's Walking City drawing, a long-legged revelation stalking the surface of the globe, a truth or illusion in search of a site on which to settle and become real . . . But then, the work of the architect as he bends over the paper, pencil in hand, is all illusion. He produces simulacra of reality, diagrams which, by some form of sympathetic magic, are supposed to cause real buildings to happen out in the instrumental world. We all know that it is not sympathetic magic but a vast and frequently fallible industrial complex that will turn the illusory vision into real construction but, for architects, the moment of magic, the revelation of truth, is when the pencil marks the paper, and the process of making architecture begins.[1]

INTRODUCTION

THE IMAGE OF CHANGE

> History is always written from the sedentary point of view ...
> even when the topic is nomads. What is lacking is a Nomadology,
> the opposite of a history.
> G. Deleuze and F. Guattari, *A Thousand Plateaus*

Transformation loomed large on the horizon of the postwar period, especially in those vocations directly engaged in reconstruction. With the struggle to establish modernism accomplished, the architectural profession was poised to address the changed context. But modernism itself would be ever more subject to reconsideration as the demand for flexibility of program increased, along with the sentiment for user participation in and control over the environment. For some the capacity for architecture to readily accommodate
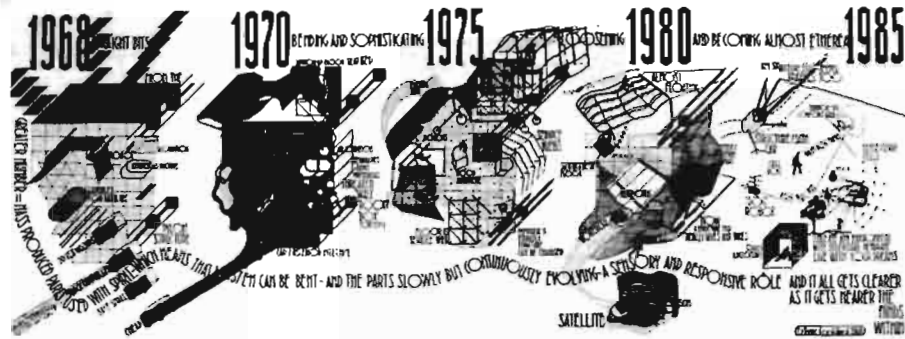
PART ONE

THE ARCHIGRAM NETWORK

changing conditions was elevated to the primary concern. This agenda
relied on the emergence of electronically driven technologies within
the popular domain of consumer products and services, with the
obvious time lag behind developments in the laboratory. Digital
technology indicated a potential way to overcome the limits of
the prevalent industrial model, and the more commercially viable
it became, the more tenable the promise of compliant structures.
Images of adaptive architectures that addressed the element of
duration began to proliferate at the institutional fringes and even
generate new forms of representation. Conjectures would range from
systems design and cybernetic planning to ephemerals of all kinds,
including tensile, auto-destructive and inflatable structures. The role
of architecture shifted from its traditional task of designing hardware
(walls, floors, masonry) to that of designing 'software': programs
to enable diverse situations in a given space.

The fabrication of a visual language to express the agenda
of reflexive architecture at this juncture is at the heart of this study.
In particular, the focus is concentrated on *Archigram*, a magazine
dedicated to the representation and dissemination of such environ-
ments. In the nine issues of *Archigram* that were published at
irregular intervals from 1961 to 1970, a representational groundwork
was prepared for a discipline overwhelmingly dependent on industrial
processes and materials to integrate complex and indeterminate
systems with architecture.[2] *Archigram* was a publication venture
that culled images and ideas from elsewhere to generate a context
for the new proposals that it circulated and that would then make
their way to the pages of other, more mainstream magazines at home
and abroad. This project attracted attention within the architectural
community through the compound use of imagery, calculated freedoms
of overall layout, manipulation of common printing procedures and
strategic dissemination to the project. The content self-consciously
evolved from the tension between the durable and transient to
proposals for megastructural networks in the first half of the decade,
then on to others for self-contained skins in the second half, and
finally to those for the disintegration of architectural objects into a
technologically driven landscape at the end. Through the production
and dissemination of imagery, the Archigram enterprise formulated
an architectural vocabulary and shaped the visual output for what are
now commonplace tools in the practice of design. The functioning
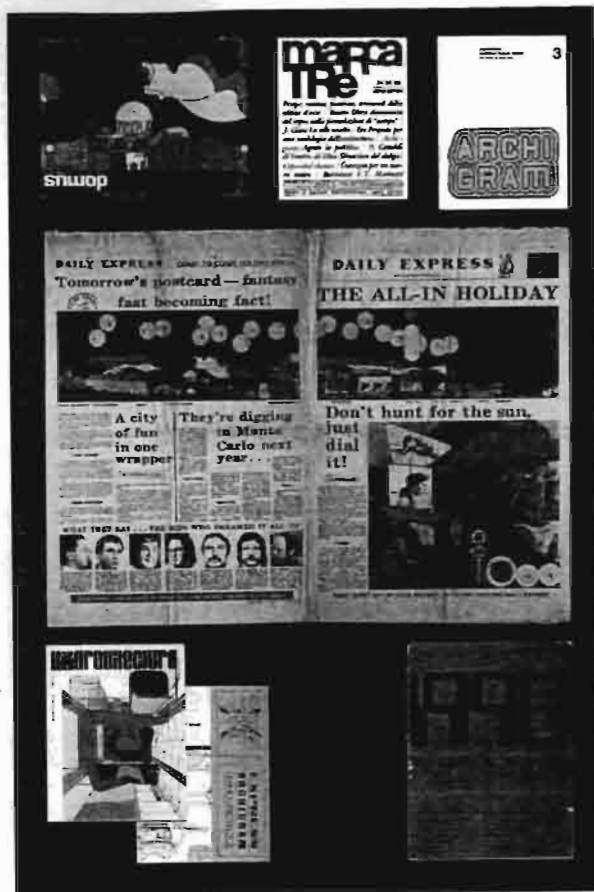
0.4
Covers of magazines, including *Domus*,
Marcatre, *Cuadernos Summa-Nueva Visión*,
Daily Express, *Hogar Y Arquitectur* and the
Weekend Telegraph, featuring Archigram.

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Covers for the entire run of *Focus* (1938–9)
and of the 1948 issues of *Plan*, as well as the
final special issue of 1951 dedicated
to the Festival of Britain.

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among the earliest architectural explorations of the dilemmas
introduced by electronic culture.

of the publication sought to do away with the division between what
was architecture and what was not – from theoretical propositions to
consumer products. Even the compounded name, with its overtones
of a transmission device, suggested a communications network. This
attempt to conceive material objects, from cities to housing, in a
world increasingly interpreted through a series of impulses was

Form   *Archigram* fitted the counterculture of the small magazine – the
broadsheet, the *samizdat*, the zine – a venue considered to be a
seedbed for new ideas and measure of things to come. In Britain,
where there were precarious and unprofitable publications aplenty,
this phase before the radical project became familiar was an easily
recognized form. The period of and following World War II was a
notable exception as a severe paper shortage had resulted in a 1940
governmental ban on any new publications, rendering impromptu
magazines virtually non-existent.[3] Once the restrictions were
lifted, however, the numbers of experimental magazines surged. The
architectural field in particular had experienced a lapse in the domain
of ephemeral periodicals dating back to the institutionalization of
modernism in the 1930s. In Britain, of the four little architectural

magazines that had been started before the war, only two championed modernist solutions. The pioneer, *Focus* (1938-9) by students from the Architectural Association, was shut down after only four issues by the paper restrictions and other austerities. In 1943, *Plan* was initiated by the consortium of the Architectural Students' Association and survived until 1951 by shifting its base of operations from school to school.[4]

By the 1950s, the dominance of modernism in the professional journals had been established, as the contents of the *Architectural Review* well illustrate, and the authors of the early alternative magazines had become the establishment. Student communities, on the other hand, grew vocal in their criticism of what was now old. There were not many opportunities for the publication of student work, though after Theo Crosby became the technical editor for *Architectural Design* in 1953 that magazine provided an outlet for a certain segment of the younger generation.[5] Over thirty little magazines debuted from 1955 to 1970 to challenge the status quo.[6] The postwar alternative reviews continued, like those that preceded them, to deviate from what was being taught in the schools and to promote a sense of professional crisis. Extremity of statement varied. From its inception in 1956, *Polygon*, by students from the Regent Street Polytechnic, was more successful than the Bartlett's *Outlet* (1959-62) at establishing itself as radical; Manchester's *244* (1955-62) was known for its controversial articles.[7] These were all student-run magazines and, like the first two issues of *Archigram*, were dedicated primarily to student projects. The proliferation of such magazines was indeed so remarkable that in 1966 the critic Peter Reyner Banham (1922-88), a driving force on the alternative London scene of the fifties and sixties, declared the trend a movement.[8] In an article that was key for the promotion of the *Archigram* project, 'Zoom Wave Hits Architecture', Banham identified four little magazines at the core of the trend. The oldest, *Polygon*, was often evoked as a seminal publication for *Archigram*, especially as it was where Mike Webb would publish his fourth-year studio project while attending the polytechnic, initiating a sequence of reproductions and commentary that culminated with inclusion in an exhibition at the Museum of Modern Art in 1960 and the initial *Archigram* in 1961. The newest of the lot was *Clip-Kit*, begun a full decade after *Polygon* by Peter Murray together with Geoffrey Smythe when he arrived at

0.6
Cover of *Megascope* 3 (1965), the third of four issues of the student magazine edited by Peter Murray and Dean Sherwin while at Bristol.

the Architectural Association. Another was Murray's previous four-issue effort, *Megascope* (1964-6), which he had started together with Dean Sherwin while they were students at Bristol.[9] The 'reigning champion of protest mags' was, of course, *Archigram*, with *Amazing Archigram* 4: *Zoom Issue* naming the trend.[10] Banham's article was centered on the *Archigram* case, deploying the two contemporary publications to further exemplify the influence of *Archigram* interests, including geodesics, plug-ins, megastructures, plastics and inflatables.

In addition to its role as a document that lays out fundamental beliefs, the small magazine was itself a literary genre replete with a history pertaining to layout, representational techniques and typography, as well as the subversion of written and visual language. The nexus formed by the exchange of periodicals among groups of like-minded people, only compounded by the swapping of content, undermined the traditional dialectic of centrality and periphery within a profession. The result was a kind of international framework, a conceptual network, which flew in the face of the previous generation's desire, particularly marked in Britain, to domesticate modernism to the specificities of locality, whether through social or geographical regionalism.

In tone, these magazines resembled the manifestos of the avant-gardes of the 1910s and 1920s that Banham had struggled to rehabilitate into the modernist narrative as part of his doctoral research conducted under the supervision of Nikolaus Pevsner.[11] Banham was particularly interested in the alternative views of technology that had been offered by strains of modernism and throughout his career would continue to privilege work that took changing environmental or social conditions as its premise. By identifying practices that took on technologically adaptive structures, particularly those on the London scene with which he was most familiar, and situating them as true extensions of the modernist project, Banham determined the emphasis of historical discourse. 'The restrictive parameters of most architectural thought today,' stated a typical declaration in the introduction to *Clip-Kit*, 'is making the design of our environment an anachronism in an era of unprecedented technological advance.'[12] The building industry had not yet even caught up with the industrial efficiency.[13] The goal of bringing to construction some of the gains already made by

advanced technology reflected the larger lament in the restless segment of the student community that the 'rocket reaches the moon while one brick is still laboriously laid upon another'.[14] For Banham, the Zoom Wave revived the vital spirit of the abandoned early modern trends and their avant-garde attitude toward technological development. In turn, the Zoom Wave thought this of itself. Denise Scott Brown compared the beliefs of this cluster with Marinetti's ideology of the '"union of the psyche with horse power"; here, now, is its union with rocketry – via Buckminster Fuller, Detroit, industrial gadgetry of the space program, package technology, computers, science fiction, and the science fiction comic'.[15]

At this historical juncture, the infiltration of popular culture into architecture was perceived by the older generation as more threatening to the discipline's sphere of control than the incorporation of unorthodox technology. An important aspect of the small magazine project was an attack on institutional jurisdiction through the provision of an alternative to the discipline's most publicly oriented face: the professional journal. At the same time, the *Archigram* project would exploit other publication venues, *Architectural Design* in particular, to legitimate its outsider status. Banham's own piece on the small mags, itself published in *New Society* rather than a trade magazine, began:

> Architecture, staid queen-mother of the arts, is no longer courted
> by plush glossies and cool scientific journals alone but is having her
> skirts blown up and her bodice unzipped by irregular newcomers,
> which are – typically – rhetorical, with-it, moralistic, mis-spelled,
> improvisatory, anti-smooth, funny-format, cliquey, art-oriented
> but stoned out of their minds with science-fiction images of an
> alternative architecture that would be perfectly possible tomorrow
> if only the Universe (and especially the Law of Gravity) were
> differently organized.[16]

In the closing stages of the article, Banham promised that 'a one-glance comparison will show that the underground mags are in touch with the places where currently communicative conventions are being manufactured, and the Architectural Association's *Journal* is not'.[17] The irreverent themes were mirrored in the overall form of the journal itself, 'making the medium echo the message', which also reflected a
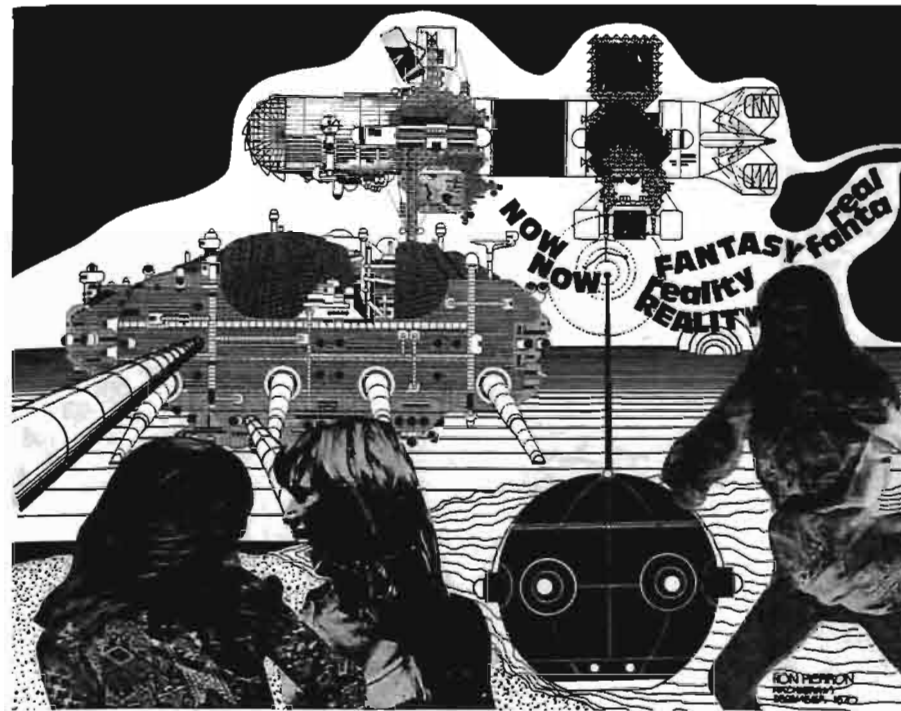
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Ron Herron, 'Instant City: Fantasy Reality',
collage on board, 1970

minimal budget and speedy assembly. While the contents of the issue expressed a like-minded lament over the lack of technological finesse in British architecture, Banham noted *Polygon* only for the cover of the seventh issue that was 'adorned with genuine lipstick kisses by a real living bird'. *Clip-Kit* lost points for polish as the 'crafty plastic binder into which later installments of the kit can be clipped is a shade professional and smooth by the standards which the Movement has established', despite the fact that the toggles of the new-fangled pink plastic binder interfered with its function. By contrast, *Archigram* had no specific format; each of the nine issues had its own dimensions. One followed a comic book layout, another that of the LP. Two were composed of loose pages held together by an envelope or a plastic sleeve. Like the variegations of jazz, a musical mode dear to the

Zoom Wave, these permutations did more than evade predictability. The journal did not retain its shape any more than did the architecture for which *Archigram* was developing representational conventions. Variation kept alive that which would have been absorbed by a standardized format: the task of questioning the nature of communication. The medium was bound to its contents. As Scott Brown described, these magazines made an agenda of reflecting their ideology in the logic of their production:

> Little Magazines are usually one-track – led by one guiding spirit, trying to make one point, the vehicle of a single school of thought, and usually representing that school at its most iconoclastic. Little magazines are often scurrilous, irresponsible and subversive of the existing order. They are written by young men and often emanate from the schools ... hand-made and usually ill-kempt in appearance, but with a certain flair. They may attempt to follow in layout and graphics the same style that they preach in their content, or the style of an art movement sympathetic to their cause. They are badly distributed and marketed and difficult to obtain even by direct approach to their authors. And they are short-lived.[18]

A poorly wrapped, often inaccessible commodity was the point of the exercise. Even as the *Archigram* acquired an audience and began listing the shops in which future issues could be purchased, as well as becoming obviously more skilled at the manipulation of printing procedures, the magazine kept its intentionally makeshift appearance.

The small journal, then, was intended as a radical project in itself, not just a conveyor of innovative schemes. The recasting of the professional publication as an informational leaflet reflected a larger cultural shift in focus – from production to communication. Thus Banham's insistence that the Archigram group was in the 'image business' was intentionally laden with meaning.[19] The power of the group was in its graphics, Banham repeatedly reminded his audience, which combined between them the most drawing talent 'since Wren was in charge of the Royal Works'.[20] His statement 'Archigram is short on theory, long on draftsmanship' became a kind of motto.[21] Hence, more controversial than spacesuits or puffed wheat being architecture was the treatment of the *image* of spacesuits and puffed wheat as

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architecture. The architectural drawing was to be understood as something other than a set of directions to get things built; even the conception was a valid architectural practice in and of itself. In the words of Sol LeWitt, 'Ideas can be works of art; they are in a chain of development that may eventually find some form. All ideas need not be made physical.'[22] If architecture was truly to be understood as a means of communication, it followed that built form was only one form of expression. Architectural drawings were not necessarily representations of something that wished to become. Moreover, the journal project itself was a form of architectural practice, one in which information about architecture merged, self-referentially, with an architecture of information. *Archigram* was the medium through which the group would advertise ways in which architecture could be subject to an alternate logic of flow, rather than representing buildings as foregone conclusions.

The magazine was a response to the larger crisis regarding the status of objects that accompanied technological development and preoccupation with flux. At the same time, the Archigram group, as the publishers of the magazine became known, was inspired by conditions native to postwar Britain, even to London. The local professionals whom they included in the publication – such as John Outram, for example – were most often associated with the particular parochial milieu in which the group traveled.[23] Moreover, attitudes toward the technological were as regional as materials or landscape and were often more influential in producing new forms than developments in technology itself. The conceptions of the Archigram group would reflect a popular climate, interpreted through the lens of the architectural education of late-fifties Britain. From the social climate of the sixties and the socio-economic mobility with which the self-consciously provincial Archigram members toyed to the transformative mindsets of drug culture, this was a time when London famously teemed with the freedoms of a youth-dominated urban environment. While the fifties had been a time dedicated to the restoration of order, the sixties could sustain the chaos of technological ebullience more than the immediate postwar era.

Still the architecture of the Archigram group was fantastical in relation to everyday British life: in accordance with what Vittorio Gregotti called the 'myth of the refrigerator', only 50 percent of the population owned that symbol of American abundance as late as
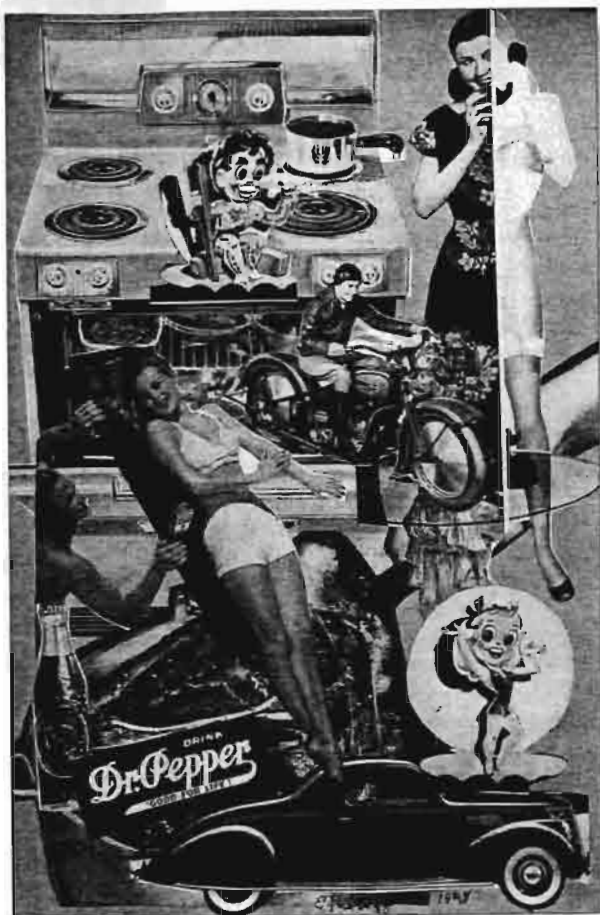
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Eduardo Paolozzi, 'Dr. Pepper',
collage on paper, 1948.

1968.[24] This myth had its roots in the austerity of the previous decade, during which the British Pop movement cultivated, through wry collages made from glossy magazines, the idea of America as a place in which citizens lived out European fantasies of technological

potential.[25] In addition, the focus of the art world had shifted from Europe to the United States after the war. This legacy was particularly significant for the Archigram group as the Americanization of British culture increased during the 1960s, along with the greater ease of travel to experience the place firsthand: four taught in the United States for various durations, as did Banham. The aging Richard Buckminster Fuller (1895–1983), increasingly regarded as an eccentric in his native milieu, was enthusiastically received on his visits to London by architectural students who appreciated the insight he provided into the technology of the new world.[26] Americana of all kinds held sway, from cowboy boots and jeans to jazz, Marvel Comics, sci-fi magazines and, of course, advertisements. Images of popular culture, from those of consumerism to those of fantasy, were drawn upon to create a vision of architecture that shared in the life of the ambient urban condition.

The mechanization of change

Such enthusiasm came on the heels of the reassessment of technology and its cultural effects within the architectural community of the postwar period. Given the central role that technology had played in the devastation of the war, it was perhaps inevitable that the efficacy of industrial rationalism would come under scrutiny in its aftermath. Appraisal would come not only from the youthful margins, but also from the established core. Sigfried Giedion, the very historian instrumental in codifying the factory aesthetics of an international modernism, began to express the view – in a lecture he gave at the Royal Institute of British Architects (RIBA) in 1946, for example – that prewar modernism had placed too much faith in functionalism and the machine.[27] In 1948 Giedion published *Mechanization Takes Command*, written in the United States from 1941–5, in which he analyzed mechanization as an agent of change, not as an end in itself.[28] Giedion acknowledged the introspection required by architects given the change from interwar conditions:

> The coming period has to reinstate basic human values. It must be a time of reorganization in the broadest sense, a time that must find its way to universalism. The coming period must bring order to our minds, our production, our feeling, our economic and social development. It has to bridge the gap that, since the onset of mechanization has split our modes of thinking from our

modes of feeling ... The process leading up to the present role of mechanization can nowhere be observed better than in the United States, where the new methods of production were first applied, and where mechanization is inextricably woven into the pattern of thought and customs.[29]

Giedion theorized movement as the 'spring of mechanization' and the key to modern thought in every discipline, including math, physics, philosophy, literature and, of course, art. That reality is ever in flux and movement the key to everything is declared as simple fact.

Giedion gleaned the incremental development toward fully automated factory production from the documentation of new techniques and theorized the process as a trend toward the ever-greater harnessing of uninterrupted flow in the service of mechanization. As a preface to his analysis, Giedion presented an overview of the ways in which movement had hitherto been committed to paper. He outlined a chronology from the graphics of Nicolas Oresme in the fourteenth century to the axial diagrams of Descartes and then, across the centuries, to the development of devices for recording biological movement of all kinds, from the circulation of blood to the flexing of muscles, for which Étienne Jules Marey (1830–1904) was famous. By way of the photographic record that Marey came to know through the work of Eadweard Muybridge (1830–1904), the transcribed record of movement gave way to its endering in space. Finally, Giedion cited Frank B. Gilbreth (1868–1924) as the first to capture the trajectory of human movement with precision by detaching it from its subject. The development of representational strategies was integral to the process of mechanization.

The research for this project was conducted not in the archives of the architectural profession but in those of corporations and the Patent Office. In this way, Giedion prioritized the documentation of 'anonymous' artifacts over traditional historical evidence. The analysis of the working drawings of everyday things, while fragmentary and oblique by necessity, revealed the forces at work in an era while maintaining intimacy, Giedion explained: 'History, regarded as insight into the moving process of life, draws closer to biological phenomena.'[30] Along with history, technology itself began to insert itself more and more into the biological equation. One of the major themes threaded through the analysis was the problematic intersection

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E.-J. Marey, 'The Myrograph', a device for recording muscle movement, registering the reactions of a frog's leg to repeated electrical stimulation, 1868.
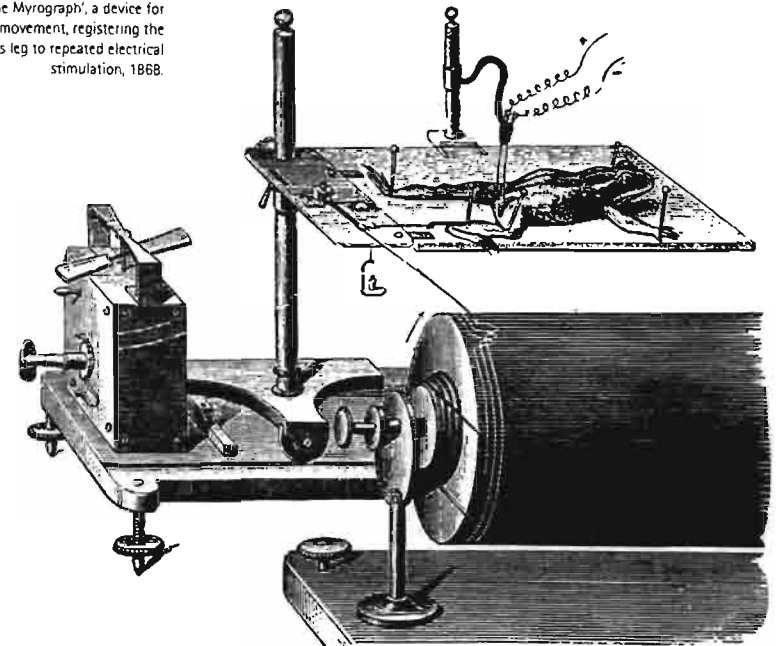
of technological and biological entities that arose in the course of the mechanization process. Giedion noted, for example, that the measures promoted by Frederick Winslow Taylor for the efficient assembly of goods resulted in the restriction of human motion to a single repetitive task on the production floor.[31] A particularly provocative demonstration of the convergence of machines and bodies was illustrated by the modern abattoir, which sought to standardize the slaughter of squirming, irregular animals.

Mechanization Takes Command was a significant text for the third generation of modernist architects. Another influential work written as a response to the war took a more suspect view of the tendency to treat change as a determinant historical force. In *The Open Society and Its Enemies* (1945), Karl Popper traced the notion of an unstable universe composed of fluctuating systems heading

toward entropy from Heraclitus onwards. Popper, dislocated to London by way of New Zealand, cautioned his battle-weary public that philosophical systems embracing the instability principle also promoted war as a legitimate method of social transformation.[32] The ideology of flux-based progress, Popper feared, posed a real threat to democracy and the effort to secure a political status quo that avoided historicist logic and its validation of war. Popper's sentiments were consistent with the ideology of modernism: 'PURISM expresses not variations,' wrote Amédée Ozenfant and Le Corbusier in 1918, 'but what is *invariable*. The work should not be accidental, exceptional, impressionistic, inorganic, contestory, picturesque, but on the contrary general, static, expressive of what is constant.'[33] Popper's position would appeal to a significant component of the architectural scene in London, especially around the Architectural Association to which the philosopher was invited now and then as a lecturer during the 1960s. This group rallied around Popper's philosophy as a way of subjecting historical analysis to the rigors of scientific proof, especially in the face of the infiltration of existentialism and phenomenological approaches into academic study at other schools.

It was, however, the sense of dynamism that would prevail among the newly minted avant-garde, not the preference for stillness. Philip Johnson would reflect on the shift in postwar modernist circles exactly in terms of the theoretical contrast of understanding material things as events instead of as a collective shadow of platonic forms:

> When Alfred Barr asked me to join the Museum of Modern Art in 1930, our attitudes toward art didn't come from Heraclitus; they came from rational, Cartesian, Enlightenment thinking, and especially from Plato. Alfred's foreword to 'Machine Art' quoted Plato: 'By beauty of shapes I do not mean, as most people would suppose, the beauty of living figures or of pictures, but, to make my point clear, I mean straight lines and circles, and shapes, plane or solid, made from them by lathe, ruler and square. These are not, like other things, beautiful relatively, but always and absolutely.' Once you acknowledge, with Heraclitus, that there are no absolutes except change, you can get beyond Platonic solids. Then things like choice, taste, shapes get back into design – anything goes . . .[34]

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Naum Gabo, 'Construction in Space: Two Cones', celluloid on marble base, c.1928, altered 1932–7. This is the earlier version as it appeared in the Constructivist publication, *Circle*, (1937).
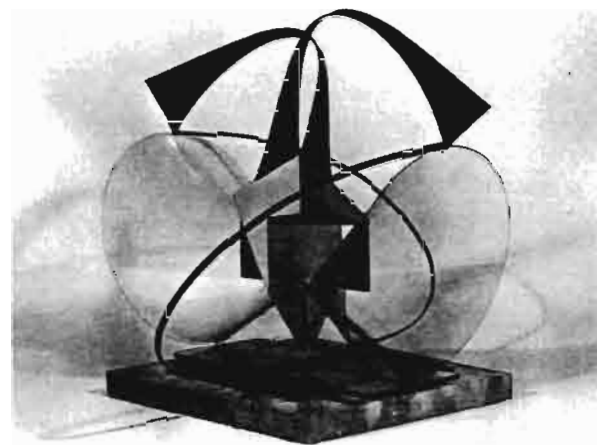
This was also the decisive distinction for the loose aggregation of artists, architects, designers and writers who assembled at London's Institute of Contemporary Arts (ICA) from 1951 to 1956, known as the Independent Group.[35] The ICA had been formed in 1946 and, under the leadership of Herbert Read, functioned as a venue for the kind of universal and international modernism promoted at MoMA in the face of Neo-Romantic and regional proclivities. It was against this allegiance to the universal that the independence of the Independent Group was asserted.

A core of Independent Group participants shared the view that art should not not be confined to the self-referential limitations of aesthetics, but should also address the broad range of 'everyday' representation generated by mass communications and production in a sociological context. They treated the visual as the most powerful realm of this culture and were attracted to texts that relied on imagery as much as words to convey a message. In addition to the illustrated analysis of the mechanization process by Giedion, *The Mechanical Bride* (1951) – the first book by Herbert Marshall McLuhan – was just such a work.[36] McLuhan selected familiar or generic imagery from popular sources such as advertisements, comic

strips and pulp fiction, and then 'dislocat[ed] it into meaning by inspection'.[37] Another was the omni-present photographic essay by László Moholy-Nagy, *Vision In Motion*, which was published posthumously in 1947.[38] While in the preponderance of texts visual materials were relegated to an isolated insert, Moholy-Nagy insisted that the images be integrated with the text throughout. This was a strategy that he would recommend to Giedion for the layout of *Mechanization Takes Command*.[39]

While Le Corbusier's purist stance on the relation between visual perception and architectural representation was dominant at CIAM, there had always been other voices in the field. Notably the teachings of Moholy-Nagy at the Bauhaus, compiled as *The New Vision* in 1928, challenged the position of Le Corbusier.[40] Moholy-Nagy, as it is well known, had long argued that the speed of modern life required biological adaptation and championed photography as the method of recording visual information. In *Vision In Motion*, Moholy-Nagy reiterated his firm belief that it was the role of the visual arts to capture what he positioned as the defining feature of modernity: the constancy of motion. The revolution in spatial understanding introduced by the theory of relativity should be structurally expressed over the static feel pervasive in most modern art and architecture. 'Mobile architecture', Moholy-Nagy stated, 'is space-time reality'.[41] The problem for architecture in this actuality was no longer in its conception but in its execution. Even automobiles and trains, he observed, were 'still largely designed with the traditional principles of static architecture, a more or less obsolete superstructure erected upon a new type, the mobilized base'.[42]

Within 'traditional principles of static architecture', mobility was addressed by means of the well-established category of circulation.[43] For Le Corbusier, unobstructed flow related predominantly to transportation, from the underground subway layer to overhead airplane routes. Modernist discourse had granted circulation its own quadrant within the four programs of urban planning. As a term, 'circulation' had been imported into architectural discourse from biology to convey the steering of particulates, whether of servicing, vehicles or crowds, through conduits.[44] The use of the expression and its implication of a discrete system lent a desired scientific edge to the practice of architecture. For Moholy-Nagy, however, the biological was always more than a useful metaphor. He argued that a fully

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Extended Archigram Group photograph taken by Timothy Street-Porter at the Newman Passage office with the Instant City blimp in the background, 1970. Left to right, back row: Janet Sacks, Diana Jowsey, Hazel Cook, Jane-Mary Greene, Margaret Helfand, Piers Gough, Bobby Wilson. Front row: David Greene, Peter Cook, Ron Herron, Dennis Crompton, Colin Fournier. On discs: Warren Chalk, Mike Webb.

realized modern architecture required symbiosis with human biology, and, in contrast to the stasis inherent in the formal abstraction of the physical paradigm, his biologically predicated model allowed for growth and change. Moholy-Nagy's time in England (1935–7) was particularly noteworthy for his involvement in ecological debates and creative activities aimed at transcending artificial dualities, such as the organic versus the artificial and the open versus the closed.[45]

The appeal of Moholy-Nagy's vision to the postwar London-based alternative art scene was that his biological understanding of program approximated the cybernetic model in which structure is responsive to input. The fundamental shift in the mode of technology, from industrial production to digital communications, and the new speed-driven tools emphasized process and dissemination over end results; this emphasis was inflected further by the saturation of the urban environment with image-based media. Anxiety over the negative capacity of machines would be dulled (though not eliminated) by the growth of civilian, even domestic, uses for military technologies as the 1950s ran their course. Architects would delve further and further into the idea of architecture as an entity composed of systems and the biological would become more and more part of the discussion, just as Giedion anticipated.

Though there would be other participants, the six who would come to be grouped under the Archigram umbrella were Warren Chalk (1927–88), Peter Cook (1936–), Dennis Crompton (1935–), David Greene (1937–), Ron Herron (1930–94) and Michael Webb (1937–). These individuals would all play quite different roles in the venture.[46] The core did not join forces as a group until they were hired in 1962 by Theo Crosby (1925–94) who was part of a newly formed Architect's Department at Taylor Woodrow Construction Company to work on the renovation of Euston station. When Crosby recruited them, Chalk, Crompton and Herron had been collaborating on the South Bank Arts Centre (1960–7) at the Special Works division of the London County Council.[47] The pedestrian walkways, massed profiles and lumbering appearance of the South Bank redevelopment scheme anticipated Archigram concerns. Cook, Greene and Webb had recently graduated from the Architectural Association, Nottingham School of Architecture and the Regent Street Polytechnic respectively.[48] Webb had already achieved that dose of international recognition when his fourth-year

The Archigram project

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Model of the South Bank Redevelopment Scheme, 1960–7.

0.13
Furniture Manufacturer's Association fourth-year project by Mike Webb, completed as part of a degree at the Regents Street Polytechnic, here installed at MoMA for the Visionary Architecture exhibition curated by Arthur Drexler, 1960.
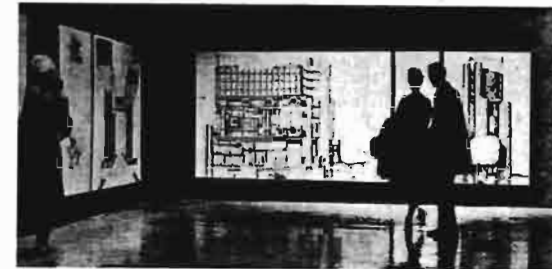
project, the Furniture Manufacturers Association Building (1957–8), was featured as part of the Museum of Modern Art's Visionary Architecture exhibition of 1960 alongside works by Filarete, Giovanni Piranesi, Étienne-Louis Boulée, Bruno Taut, El Lissitzky, Le Corbusier, Buckminster Fuller and Noriaki Kurokawa, among others.[49] That the six of them came from different schools gave them more diversity in scope than the producers of most of the in-house student publications with which Archigram had strong affinities.

The relationship with Crosby was fortuitous. An active participant on the avant-garde scene of the fifties after his emigration from South Africa, Crosby began his London career as an employee of Maxwell Fry and Jane Drew while sharing an apartment with Peter Smithson (1923–2003). The scene was closely knit; Crosby befriended artists including Eduardo Paolozzi, Ben Nicholson and Barbara Hepworth and was involved in Independent Group activities at the Institute for Contemporary Arts (ICA).[50] After being 'gently fired' by Denys Lasdun and Lindsay Drake, who had taken over the office while Drew and Fry were at work in Chandigarh, Crosby acted as the technical editor of Architectural Design from 1953 to 1962, where he was greatly responsible for the more daring approach of the magazine as compared with its consensus-forming counterpart, the Architectural Review.[51] In addition to his work at Architectural Design, Crosby was actively engaged in revitalizing the scene of architectural publications throughout the 1950s and 1960s, editing alternative art journals such as Uppercase and Living Arts.[52] For a group wanting to start an offbeat journal, there could hardly be a better facilitator.

When Crosby got the not-quite-yet Archigram group their first show, Living City (1963), through his connections at the ICA, the transition from the alternative scene of the fifties that had been to that of the sixties was outlined. In fact, their first publication as a group appeared as a contribution to Living Arts in the form of an exhibition catalogue. This initial collective effort challenged the limits traditionally imposed by architects on the parameters of the urban experience and set the tone for what would follow. The display prioritized the transient and ephemeral situations that occur within the city instead of functional or social categories. From then on, the six collaborated on the *Archigram* publication. Cook and Greene had already published the first two issues in 1961 and 1962 as a promotional sheet for student work. With the first joint issue in 1963, *Archigram* was remade into a forum in which to expand the accepted parameters of architecture.

The visions of *Archigram* fitted into a long-standing British tradition of technological utopianism extending from Thomas More on, where visions of what engineering could produce were combined with the ideals of social progress. Banham reinforced this by emphasizing the Britishness of the Archigram group's minute attention to detail that distinguished them from technological fantasy.[53] In his survey of contemporary *Experimental Architecture*, Cook presented the Archigram group as part of the 'boffin'[54] tradition – or that of the amateur inventor:

> A fascinating shift in recent years ... is the rise of the 'boffin' – designer at the expense of the 'artist' – designer. The boffin works methodically, accruing and inventing when necessary, and by almost myopic devotion he frequently arrives at his objective. He acknowledges only what he wants to as relevant or important. Sometimes he may have forgotten the original context of his pursuit, but he arrives at his goal nevertheless. His intuitions are channeled. To see him as the product of the technological age is not enough. In his working method he owes more to the tradition that has run alongside that of architecture, and has at least as respectable a history. His is the tradition of Invention or, more precisely, of the attitude of mind that solves problems by inventing ways out of them.[55]

Indeed professional expertise was virtually absent from Archigram's engagement with technology.[56] The terms 'hardware' and 'software', for example, remained for the most part outside of the popular, and thus the *Archigram*, lexicon until 1968. It is exactly this lack of technological *savoir faire* that liberated their schemes and imaginations from practical constraint.

To be sure, there was no clean break, either chronological or conceptual, between what have been characterized as industrial and postindustrial technology. Even in the digital age, the dominant technologies, from steel to electricity, were rooted in the industries of the nineteenth century. When Crompton recounted the history that led to Archigram's conception of the reflexive environment, he described it as having descended from 'Bell, Baird, Faraday, and the rest'.[57] Alexander Bell, the Baird family and Michael Faraday were prime examples of amateur, entrepreneurial inventors. The Archigram group's view of itself as carrying on the boffin heritage fitted the industrial model. At the same time, the agenda of post-industrial technology perfectly suited the Archigram one.

The sense of Archigram as a coherent entity has been – as is the case with the Independent Group – mostly due to the post-facto effort of exhibitions and the publications produced to accompany them.[58] The first catalogue, with its psychedelic cover by Diana Jowsey, a frequent Archigram associate, accompanied the exhibition held at the ICA in 1972 during the brief stint in which Peter Cook was director. Cook's packaging of the not-quite past codified to a great extent how the Archigram group was to be remembered: as part of sixties popular culture, like miniskirts, drugs and space travel; as part of the counterculture that saw architecture as a medium of communication; and as a strategy that forced architects to break away from the 'establishment fashion of the 1950s'.[59] The revival of interest in these issues launched a second retrospective orchestrated by Dennis Crompton that first traveled from the Kunsthalle in Vienna to the Pompidou Center, Paris, in 1994. It has since been shown in various formats at institutions of different sizes and profiles worldwide. The retrospectives feature the images from which the reproductions for the newsletter were made, among other group-related objects.[60] What in the magazine were small monotone images are large and brightly colored in the museum as well as in the catalogues, where the originals occasionally look even more polished

than they do on the wall.[61] A picture of a movement has been emphasized through the exhibitions, and that presentation has worked: Archigram – the group, not its constituent individuals – was awarded an RIBA gold medal in 2002, and there is – crucially for a practice to be considered a movement – a narrative of influence, or legacy.

The retrospective gesture, with its self-declaration of origins and insistence on originality, raises its own set of predicaments. Even the official biography of the group in 1965 claimed: 'The Archigram Group has not been formally constituted. Six young architects found interests and antipathies in common, at times they developed their ideas independently, at others they collaborated closely, in particular, on the production of *Archigram*, a mettlesome broadsheet that has stirred the interest of architects throughout the world.'[62] Indeed the six were rarely together in London and the projects most commonly associated with the Archigram name were not jointly produced.[63] Besides the magazine, exhibitions and audio-visual displays were conducted under the Archigram moniker,[64] as was the International Dialogue of Experimental Architecture (IDEA) conference that gathered at Folkestone in 1966. IDEA was held at the New Metropole Arts Centre, the very same venue at which Living City had been on display three years before. As a site, Folkestone was the kind of provincial seaside town that Archigram would often perversely celebrate, with

0.14
An assortment of catalogue covers, including those published for the exhibition at the Centre Georges Pompidou; by Academy Editions for the exhibit at Kunsthalle Wien; by Archigram Archives for the exhibit at the Cornerhouse, Manchester and Threadwaxing Space, New York; the first catalogue by Studio Vista, 1972, cover by Diana Jowsey (reprinted in 1991 by Birkhäuser Verlag); and the catalogue for the International Dialogue of Experimental Architecture held at the New Metropole Arts Center in Folkestone in June 1966.

0.15
Advertisement for the IDEA conference held at the New Metropole Arts Centre, Folkestone, 1966.

convenient access to the Channel for those coming from Europe by ferry. Speakers at the conference included Banham, Yona Friedman, Hans Hollein, Gustav Metzger, Claude Parent, Cedric Price, Arthur Quarmby, Ionel Schein, Paul Virilio and Josef Weber. Work by Buckminster Fuller, the Metabolist Group, Frei Otto, Eckhard Schulze-Fielitz and Paolo Soleri was also on display. Many students from Britain and abroad attended, and the affair was raucous, full of heckling and dissent. The emphasis on the activities and personas of the working group responsible for the publication, especially in relation to the many variants of exhibitions it has organized, has, however, been at the expense of the role of *Archigram* as a vehicle for information. As Banham could already observe in 1976, 'the group itself was something of a "historical illusion" produced by the magazine.'[65] Rather than highly orchestrated events, the magazine was the vehicle through which Archigram overcame the limits of its locality and over which the least control could be exercised once it was posted.

In 1968, Cook described the *Archigram* magazine as 'the mouthpiece of a group of architects, designers, environmental researchers . . . (what's in a name . . .?), based in London and the United States. The first issue was produced in 1961 as a protest sheet, and all issues have been manifestos. They have always been based on proposition as well as discussion since the Archigram group believe in trying to sort things out and *do* something about it.'[66]

The name formed a hybrid of architecture and telegram – apt as the first form of electronic communication – and each issue was dedicated to compliant hybrids that cross-pollinated structure with communications systems. As a mode of communication to extend the public realm, the sphere of influence for these ideas was intended to be broad. But contrary to its message of global distribution, *Archigram* was dependent on the trajectories and restrictions of postal distribution and the contours of the audience were defined by the mailing list and publication quantity. There was also the way in which they continued to travel through the architectural community, as illustrated by the anecdote told by Hans Hollein (1934–) of how he was handed his first *Archigram* by Philip Johnson who thought it was something he might enjoy.[67]

Archigram brought experimental projects from abroad to the attention of the British scene and familiarized architects outside

Britain with the work of Cedric Price (1934–2003), judged to employ state-of-the-art technology in his work, and Arthur Quarmby, Britain's foremost champion of the architectural use of plastics and inflatables, as well as the work of students and recent graduates. The publication built a sense of an international community for a group of people with whom their images resonated, and may have even changed some attitudes, as Peter Blake testified ('Everything, absolutely everything, suddenly became architecture').[68] Mostly it spread ideas and familiarized them, whether to be accepted or not: 'While other architects may have had similar ideas and methods of working . . . Archigram were a kind of "seismograph", documenting and processing new developments, then introducing them to a wider architectural scene.[69] The marks left by this seismograph are the fodder of this investigation.

The focus of this study is on the representation and dissemination of architectural ideas. First the Archigram agenda will be situated within the historical milieu of British modernism and the avant-garde context of the 1950s from which it emerged. Distinctive to the British context, the debate over the accommodation of change in the built environment took the form of populist resistance to the aesthetic values of modernism. Chapter 2 explores the positioning of change as an antidote to the status quo from the very first group collaboration, the Living City exhibition at the ICA. Comparisons to previous exhibitions that influenced the milieu in and against which the group displayed their ideas will be brought to bear on the structure and themes of the Living City as they appeared in the gallery space, but especially as presented in the ICA journal which functioned as its catalogue.

The next three chapters concentrate on the *Archigram*s themselves and the transposition of the theoretical concerns to an independent publication with an international audience. Each chapter traces an idea from its early articulation in the magazine to its developed manifestation in the following years. The unifying thread is the visualization of the shift from the model of physical form to the biological one, from hard to soft, from open to closed. Chapter 3 considers the precedent offered by infrastructure-ready service cores for projects that appeared in the early *Archigram*s from 1963 to 1965. By extending what had already been done for water

Itinerary

and electricity to all the other services necessary for the responsive environment, the model of the core was expanded, first to the house, then to the city. The service conduit and its reliance on the infrastructural network, however, presented an obstacle to a truly mobile program. Overcoming the dependence on infrastructural roots is explored in Chapter 4, which investigates the turn away from rigid materials and toward the potentials of the inflatable skin in projects that appeared in the newsletter from 1966 to 1968. This chapter looks at how the desire for greater personal portability through the use of the inflatable skin introduced the element of temporality into the spatial model. An important aspect of this analysis is the turn through the organic metaphors that dominated the discourse of inflatable technology away from the environments at the urban scale to the isolation of individual bodies. Chapter 5 examines the strategies that the group used from 1968 onwards to combine the segregated units into dynamic, reflexive, social settings. Through the rare instance of a collaborative project, Instant City, the chapter looks at the gradual lightening of the initial proposition of the megastructure into an urban experience free of the infrastructural anchor, to the point where architecture moved beyond its hardware metaphors, even that of the conduit. There would be no difference between the architectural domain and that of information.

By way of conclusion, the study reflects on the implications of this technologically driven, post-industrial version of landscape as the diminishing of structural intervention in favor of transient program continues to play itself out within digital discourse as an idyllic form.

The Archigram legacy

It is a commonplace that one of the few British architectural exports of the twentieth century, the style known as 'High Tech', followed in the footsteps of Archigram. Indeed, a group bus trip was undertaken to see the completed Pompidou Center (1977), some highlights of which were caught on film.[70] The arrival in Paris was, inevitably, accompanied by disappointment. Though they recognized their cartoons in the work, the literal application of diagrammatic color to the overblown external ducts converted what in the drawings was a metaphor of circulation and exchange into a monumentalization of services. On-camera musings reveal bewilderment at the fundamental lack of dynamism on display. While the frame enabled internal flexibility of program, the core issue of transience, from

the structural incorporation of time to the exchanges of technology and consumption, were untouched. The consensus was that the Pompidou Center, despite being filtered through the representational lens of Archigram, remained a static building. Thus was the Archigram project converted into traditional building.

Greene would explain the implications of construing Archigram imagery as a blueprint for building:

> A misreading of [the work of Archigram] as a set of proposals, a set of windows through which to see a 'new world', is only a rather pathetic regurgitation of the dogma which asserts that architectural drawings are representations of something that wishes to become. Archigram's efforts lay not in this tradition; they were not restyled modernism, they represented a conceptual shift, in common with other creative enterprises, away from an interest in the commodity (in this case, say, the building or the city) towards an interest in the protocols, structures and processes of mid twentieth-century culture . . .
>
> Archigram is about the possibilities for architecture – the 'both/and' rather than the 'either/or' – not only with regard to speculation on architectural language and form, but also in terms of the widening of the site of conceptual interest that the architectural object might occupy and the kind of drawings (propaganda) that could be a tool of speculation.[71]

It is here that the relevance lies – in the making of an image of an architecture caught between the industrial and the digital eras of technology. In a drawing, one could approach an altered reading of the familiar, confront a radically new structural and social possibility, and explore the contours of intangible entities. The power of devising a representational language over the production of a repertoire of objects was to saturate the disciplinary mindset with an image for an architecture that dealt with 'the protocols, structures and processes of mid twentieth-century culture'. The strategy left a pervasive legacy.

Tucked into *Archigram* 7 among the pages of expected *Archigram* visuals – including several variations on the Plug-In concept and a dymaxion-style cutout puzzle – was a letter written by Warren Chalk to David Greene. Under the heading '"Ghosts" (by Albert Ayler)', this contribution dealt directly with the pressures of influence that were

0.16
Richard Rogers and Renzo Piano, Centre Georges Pompidou, rear façade, 1972–6.

brought to bear on the creation of the new language, both from within the discipline and from the cultural realm without.[72] Chalk wrote to Greene:

> Architecture is probably a hoax, a fantasy world brought about through a desire to locate, absorb and integrate into an overall obsession a self-interpretation of the every-day world around us. An impossible attempt to rationalise the irrational. It is difficult to be exact about influences, but those influences that enter our unconscious consciousness are what I call ghosts.
>
> Our lives exist within a complex web of these influences which we either accept or reject; those we find acceptable are turned to advantage; they become our preoccupations, prejudices or preconceptions.

To demonstrate how architecture served as a method to assimilate the everyday world, Chalk prepared an array of images as a supplement to the letter. On both sides of an inked sheet of paper (15½ inches by 12½ inches) white images emerged from a black background. The 'A' side was dedicated to the 'unconscious consciousness' of preconception. Surrounding a picture of Ayler with his saxophone hovering over the word 'GHOSTS', with an adjustable compass strategically placed off to the right, were the apparitions of modernism's variations on a framework.[73] Included in the array were side elevations of tubular steel chairs by Marcel Breuer, the design for a Spherical Theater (1924) by Andreas Weininger, the plan of the 50 x 50 House

(a)

(b)

(1950–1) by Mies van der Rohe, and a plan of Ronchamp (1955) by Le Corbusier. These choices were not necessarily paradigmatic items, but personal, more fanciful – an impossible theater for spectacle, an unbuilt prototype for mass housing by Mies, Le Corbusier's later work. Strewn among those were images from without, including a silhouette of a crane, a four-door sedan, outlines of tailor's mannequins, and a strip of film by Richard Smith and Robert Freeman featuring a man in profile.[74] Chalk continued:

> Ghosts help reinforce and establish attitudes, build a very personal language, a complex labyrinth of ideals, constraints, theories,

0.17
Warren Chalk, (a) 'Ghosts' and
(b) 'Phantoms', *Archigram* 7, 1966.

half-remembered rules, symbols, words that ultimately digested affect our concepts. It is unpopular, but essential, that existing attitudes come in for constant and rigorous renewal or reappraisal. We are confronted with a dynamic shifting pattern of events at both popular and intellectual levels, both stimulating and confusing. In this ever-changing climate, old ghosts may be cast out and replaced by new; it is right that influences should last only as long as they are useful to us, and our architecture should reflect this. At a general level it is becoming increasingly apparent that due to historical circumstances the more tangible ghosts of the past – those grim, humourless, static, literary or visual images – will succumb to the

onslaught of the invisible media; the psychedelic vision; the insight accompanying a joke; the phantoms of the future.

Accordingly, the static things that linger and preoccupy must be allowed to interact with the newer dynamic conditions, and even to be overtaken by them. The capacity for architecture to adapt to the ever-changing climate directly correlated with the capacity for its language to incorporate the range of ever-changing influences from outside. The 'B' side, 'Phantoms', to which the 'Ghosts' will succumb, was comprised of no works of architecture as such. Included were the specters of triangulated geometries, Op Art patterns, a model on a leopard print, diagrams of fleeting impulses, and a schema of a rocket with hovering spiky, comic-style speech bubbles. Whether an aerial, a telephone cord, a satellite dish or a strip of punched code, all forms of electronics-age cultural production were architecturally suggestive.[75] Architecture as a vehicle of communications dramatically increased the reliance of the discipline on the visual domain outside of modern graphic strategies. Images of consumer culture were drawn upon to generate the atmosphere of transience and circulation, or even equate lifestyle and architecture. Architecture as a web of imagery implied that building was not of the essence after all. Representation was architecture in itself.

As the decade progressed, the visual context would continue to evolve and Archigram's own imagery of contemporary life, as Chalk knew, would have to move on or stagnate. The elimination of hierarchy and signification raised its own challenges for the process of design. In the midst of the allure of the transient realities, representation, reduced to its constituent elements, disintegrated. The inconsistencies and incompleteness of communication placed the structure of representation itself under scrutiny. Under the conditions of constant change, the course of image-making was inevitably marked by loss. Nonetheless, the possibilities offered by contemporary culture over-shadowed the crisis of meaning that accompanied the increase in communications. The pursuit of one ghost allowed another to take its place. Mediated through the vocabulary of mass culture, the allusiveness of representation intimated the potentials of a milieu where nothing becomes stagnant and images, in and of themselves, constitute architectural practice. Creating images rather than objects, the Archigram group used a process of representation and

dissemination to develop an informational architecture. The attempt to get outside of the closed games of language was rooted in the belief that an architecture of information would result in an indeter-minate system.[76] Playing games of non-design, the cultural condition of restlessness would become a cityscape and information would approach, but never reach, the status of a substance. The gradual lightening of the megastructure into an urban experience free of the infrastructural anchor aimed at the point where architecture would lose all its hardware metaphors, even that of the conduit. There would eventually be no difference between the architectural domain and that of information.

The Archigram project was often criticized as techno-centric, apolitical and lacking in conceptual rigor.[77] Sigfried Giedion, among others of his generation, found Archigram's proposals alarming, part of a 'playboy architecture' emerging in the 1960s.[78] There were many other ways in which the Archigram agenda was found wanting by the group's predecessors, Alison and Peter Smithson among them. Peter Eisenman found Archigram as guilty of aetheticization as the prewar polemic the group set out to critique.[79] Much of the criticism leveled at the group has been based in a disdain for their social position, characterized as libertarian, or even anarchic. But seen otherwise, the appeal of the *Archigram* imagery was in its effort to build a mode of communicating that had communication as its subject and that could serve as a tool to disseminate information about an architecture of information. In this terrain, information was a formative substance for the city and its components. Because the newsletter's contents were not intended as blueprints but as ideas about structure, the *Archigram* imagery illuminates a conceptual shift shared with other creative processes of mid-twentieth-century culture in a manner that no executed project could. That is also why this work is interested in the imagery as part of a magazine, the entirety of the vehicle by which the ideas infiltrated architectural culture for better, as well as for worse. This is a study of image-making, of creating a picture of what something might look like. In this, the present work shares most with the retrospective view expressed by the less pervasive and more theoretical reflections of Greene:

> If when it is raining on Oxford Street the buildings are no more important than the rain, why draw the buildings and not the rain?

Well, I can only ask you to concentrate on the question whilst enjoying the picture – sorry, the drawing – and perhaps see the buildings as advertisements, part normative architectural rendering, part provocation, and then reconsider the fact that a building is a sort of residue, a ghostly reminder of all the ongoing processes – economic, technical and social – that make up the environment . . . This is a new terrain in which information becomes almost a substance, a new material with the power to reshape social arrangement, in which the city becomes a continuous building site in a very literal sense, in which things and people vibrate and oscillate around the globe in an ecstatic consumption of energy, in which the modernist search for the authentic is an anachronism, in which restlessness is the current cultural condition. This is the landscape inhabited by Archigram.[80]

A terrain, after Heraclitus, in which information is almost a substance, a city in which things and people are in constant motion, a place in which restlessness is the cultural condition. That is also the landscape of this study.

1   Reyner Banham, *The Visions of Ron Herron*, London: Academy Editions, 1994, pp. 15–16.

2   In September 1974, an additional leaflet numbered 91/2 was issued as 'A Documentation of Buildings and Projects' that had been undertaken by Archigram participants.

3   Robert Hewison, *In Anger: British Culture in the Cold War 1945–60*, NY: Oxford UP, 1981, pp. 18–19.

4   It moved from Cheshire to Liverpool, then to the AA, and finally to Birmingham. Scott Brown has described *Plan* as 'a socially concerned publication whose main focus was the problem of housing and rebuilding in Britain after the war. Its student-authors were a group who later entered county architecture and planning offices in London, Bedfordshire, and Hertfordshire, and set the stamp for what was experimental, exciting, and socially minded in the postwar British public housing and schools programs.' Denise Scott Brown, 'Little Magazines in Architecture and Urbanism', *Journal of the American Institute of Planners* 34(4), 223.

5   The editors of the major architectural publications had been in place for some time. Monica Pidgeon was the original editor of *Architectural Design* and remained in charge. At the *Architectural Review*, J.M. Richards had been the editor since 1937, and Colin Boyne had been in charge of the *Architects' Journal* since 1953. For an analysis of the varying practices of these magazines, see Richard Williams, 'Representing Architecture: the British Architectural Press in the 1960s', *Journal of Design History* 9(4), 285–96.

6   Neil Steedman, 'Student Magazines in British Architectural Schools', *Architectural Association Quarterly*, Summer 1971, 36–40. The Architectural Students' Association had died along with *Plan* at the beginning of the decade but was resurrected as BASA (British Architectural Students' Association) in 1957. The *Architects' Journal* offered to publish any contributions from them in a special Student Section, the first appearing on 19 March 1959 . . . Some 150 sections have been published over the last 12 years at varying frequency and quality, the majority, as with *Plan*, covering architectural education, school work and conference reports, but only with reference to Britain' (ibid., pp. 38).

7   244 was the first to publish an article by Banham.

8   Reyner Banham, "Zoom Wave Hits Architecture," *New Society*, 3 March 1966, vol.7, no 179, 21

9   Murray would later become the art editor for *Architectural Design*.

10   Scott-Brown's article also dedicated the most room to *Archigram*. Despite its authors' claim of institutional neutrality (see *Archigram* 5, for example), the *Archigram* was part of this phenomenon of the architectural schools.

11   This research would be published as *Theory and Design in the First Machine Age*, New York: Praeger, 1960.

12   Peter Murray and Geoffrey Smythe, 'The Next Great Leap', Clip-Kit, c. 1966, unpaginated.

13   '[A]t the time of the First World War, when both houses and cars were built by hand, one could buy two modest houses for the price of one cheap car . . . However although cars have long since been mass-produced for a standardized market, houses are still largely made by hand. As a result one can now buy twelve cheap cars for the price of one modest house. And yet the car of today is vastly superior to its counterpart of fifty years ago in terms of comfort, performance and economy' (Quarmby, *Plastics and Architecture*, NY: Praeger Publishers Inc., 1974, p. 183). The reduction of handicraft in the profession, Quarmby believed, centered on the effective exploitation of synthetic materials. Arthur Quarmby, 'The Design of Structures in Plastic', *Architectural Design* 31 (November 1961), 518–21.

14   Christopher Gotch, 'Architecture 1960', *Ark* 26 (Summer 1960), 29–32.

15   Scott Brown, 'Little Magazines in Architecture and Urbanism', p. 225.

16   Reyner Banham, 'Zoom Wave Hits Architecture', *New Society*, 3 March 1966, vol. 7, no. 179, p. 21. Reprinted in Reyner Banham, *Design by Choice*, edited by Penny Sparke, New York: Rizzoli 1981, p. 64.

17   Banham, 'Zoom Wave Hits Architecture', 65.

18   Scott Brown, 'Little Magazines in Architecture and Urbanism', 223.

19   'A Comment from Peter Reyner Banham', in Peter Cook (ed.), *Archigram*, London: Studio Vista, 1972, p. 5.

20   This comparison is made in a film by Dennis Postle about the design of the Pompidou Center, Paris (*Four Films*, Tatooist International Production, Arts Council Film, 1980), in which the Archigram group travel to Paris with Cedric Price.

21   Reyner Banham, *Archigram*, p. 5. Quoted by Sutherland Lyall in a review of the Pompidou exhibition ('Bubble Writing on the Wall', *Building Design*, 8 July 1994), it has also been repeated by group members in lectures accompanying recent retrospectives.

22   Sol LeWitt, 'Sentences on Conceptual Art', *Art Language* 1(1), 11.

23   Outram had studied at the Regents Street Polytechnic with Webb and at the Architectural Association with Cook, as well as being a major force in the publication *Polygon*.

24   For a compilation of statistics in economic bleakness, see Sue Bowden, 'The New Consumerism,' in Paul Johnson (ed), *20th Century Britain: Economic, Social and Cultural Change*, London: Longman Group Ltd, 1994, p. 247.

25   For an investigation of this phenomenon, see John A. Walker, *Cultural Offensive: America's Impact on British Art Since 1945*, London: Pluto Press, 1998.

26   John McHale would refer to him this way in his writings about Fuller. Even the RIBA would acknowledge Fuller's significance to the local scene with a Royal Gold Medal, though not until 1968. The award was disapproved of by some, among them Malcolm MacEwen, who thought that the official endorsement of the medal reinforced an 'unlimited enthusiasm for technology with little understanding of its practical limits' (Malcolm MacEwen, *Crisis in Architecture*, London: RIBA, 1974, p. 23).

27   This lecture was given at the invitation of the Modern Architectural Research (MARS) group and summarized in the *Architects' Journal* (17 October 1946), 274.

28   This theme would continue to preoccupy Giedion, as can be seen in the first Gropius lecture which Giedion delivered at Harvard in 1961, published as *Constancy, Change, and Architecture*, Cambridge, MA: Harvard University, 1963. For more on *Mechanization*, see Jean-Louis Cohen, *Scenes of the World to Come*, Paris: Flammarion, 1995, pp. 183-95.

29   Sigfried Giedion, *Mechanization Takes Command: A Contribution to Anonymous History*, Oxford: Oxford University Press, 1948, p. v.

30   Giedion, *Mechanization Takes Command*, 2.

31   Marx posited this mechanization, along with the tyranny of the clock that regulated it, as the root of alienation.

32   Popper quotes Heraclitus: 'War is the father and king of all things . . . One must know that war is universal, and that justice – the lawsuit – is strife, and that all things develop through strife and by necessity' ('The Spell of Plato', *The Open Society and Its Enemies*, London: Routledge, 1945, vol. 1, p. 16). Of Hegel he writes: 'We can say that Hegel's world of flux is in a state of "emergent" or "creative evolution"; each of its stages contains the preceding ones, from which it originates; and each stage supersedes all previous stages, approaching nearer and nearer to perfection. The general law of development is thus one of progress . . . The Spirit of the nation determines its hidden historical destiny; and every nation that wishes "to emerge into existence" must assert its individuality or soul by entering the "Stage of History", that is to say, by fighting the other nations; the object of the fight is world domination. We can see from this that Hegel, like Heraclitus, believes that war is the father and king of all things. And like Heraclitus, he believes that war is just' ('The High Tide of Prophecy: Hegel, Marx, and the Aftermath', *The Open Society and Its Enemies*, vol. 2, p. 37).

33   'After Cubism', translated by John Goodman, in Carol S. Eliel (ed.), *L'esprit Nouveau: Purism in Paris, 1918–1925*, Los Angeles: Los Angeles County Museum of Art in association with Harry N. Abrams, 2001, p. 165.

34   'Philip Johnson's Starck Choice', *New York Times Magazine*, 13 December, 1998.

35 For more on the Independent Group, see David Robbins, *The Independent Group: Postwar Britain & the Aesthetics of Plenty*, Cambridge, MA: MIT Press, 1990; Anne Massey, *The Independent Group*, Manchester: Manchester University Press, 1995.

36 McLuhan overtly recognized his debt to Giedion in a letter of 6 April 1961 to Kamala Bhatia, cited in Philip Marchand, *Marshall McLuhan: The Medium and the Messenger*, New York: Ticknor and Fields, 1989, p. 78.

37 Marshall McLuhan, *The Mechanical Bride*, NY: Vanguard Press, 1951, p. vi.

38 Hamilton recounted the discovery of *Mechanization Takes Command*, and images from *The Mechanical Bride* and *Vision in Motion* were even borrowed for Independent Group purposes (Richard Hamilton, *Collected Words*, London: Thames & Hudson, 1982, p. 12). David Greene also recalled the influence of these books. Peter Cook, however, claimed that Moholy-Nagy was absent from his schooling (Columbia Symposium, 13 March, 1998).

39 For an insightful account of the intellectual affinities and exchange of ideas between these authors, see Reinhold Martin, *The Organizational Complex*, Cambridge, MA: MIT Press, 2003, pp. 15–79.

40 John Summerson noted the difference between these two figures in 'The Case for a Theory of Modern Architecture', in which he pointed out that Moholy-Nagy's lectures at the Bauhaus were in 'some respects a negation of *Vers une Architecture*' (*Journal of the Royal Institute of British Architects*, June 1957, 308–9).

41 He continued, 'Gropius and Wagner are advocating demountable, movable houses for future cities. There are projects not only of movable but of moving houses too; sanitariums, for example, turning with the sun . . . Professor J.D. Bernal of Cambridge, England, [plans] to construct houses whose walls are produced by compressed air, by rotating air streams or opaque gases' (László Moholy-Nagy, *Vision In Motion*, Chicago: Paul Theobald & Co., 1947, pp. 256–8).

42 Moholy-Nagy, *Vision In Motion*, p. 256.

43 Le Corbusier would even make what he called the 'outrageous fundamental proposition' that '*architecture is circulation*'. 'Think it over,' Le Corbusier implored; circulation 'condemns academic methods and consecrates the principle of "pilotis"' (*Precisions*, tr. E. Schreiber Aujame, Cambridge: MIT Press, 1991, p. 47).

44 Adrian Forty, '"Spatial Mechanics": Scientific Metaphors in Architecture', *The Architecture of Science*, Peter Galison and Emily Thompson (eds), Cambridge: MIT Press, 1999, pp. 213–31.

45 For an extensive discussion, see Peder Anker, 'The Bauhaus of Nature', *MODERNISM/modernity* 12(2), 229–51.

46 The group has made much of these roles. See, for example, Cook (ed.), *Archigram*, 140–1.

47 Herron and Chalk met at the LCC's school division that they both joined in 1954. For more on the intergenerational politics that produced the final design for the South Bank Arts Centre,

see Simon Sadler, *Archigram: Architecture Without Architecture*, Cambridge, MA:MIT Press, 2005, pp. 27–32.

48 Cook trained at the Bournemouth Polytechnic under Ron Simms who encouraged his students to go to London and the AA on scholarships.

49 Webb was part of a bundle of Regents Street students who became known for producing projects that resembled biological organs. Despite being selected for the MoMA show, Webb's submissions to his tutors were continually rejected for the purposes of completing his degree.

50 Drew designed the Dover Street premises of the ICA, thus establishing an inside connection for Crosby there. See 'Night Thoughts on a Faded Utopia' in Robbins, *The Independent Group*, 197–9.

51 The *Architectural Review* was the official voice of the modernist agenda. When Banham joined the editorial board of the *Review* in October of 1952, he used that position to give voice to the avant-garde scene.

52 Richard Hamilton has written of the outlet offered by Crosby's ventures: 'It was an odd phenomenon of the fifties in London that the most adventurous minds were those young architects who found an outlet through Theo Crosby when he edited *Architectural Design*. He also persuaded several painters and sculptors among the Independent Group to gain access to an audience through print that was denied to them by the galleries. Indeed it was as a result of Theo Crosby's invitation that I wrote on Duchamp for the first time in Uppercase, and another, longer, effort "Urbane Image" for Living Arts which proved a turning point; interest in my work was established among a small group of London cognoscente solely by this publication and it produced an invitation to exhibit that had been refused me for eight years' (Hamilton, *Collected Words*, 7).

53 Reyner Banham, *Megastructure: Urban Futures of the Recent Past*, London: Thames & Hudson, 1976, p. 84. The reasons why the British alone seemed prone to finick over detailing are diverse and often personal, but do seem somewhat connected to a national tendency to take refuge from ideology in pragmatics.' Banham maintained that after Price's Fun Palace, which had got as far as satisfying fire regulations, 'any project which hoped to be taken seriously had to be detailed down to the window corners and the jointing gaskets' (ibid., 96–7).

54 British usage for someone who is technologically innovative without the ideological burdens of the professional.

55 Peter Cook, *Experimental Architecture*, London: Studio Vista, 1970, pp. 11–12.

56 This was so despite the fact that the centrality of theoretical knowledge to postindustrial technology was what Daniel Bell called its 'axial principle'. 'Nineteenth-century inventing was trial-and-error empiricism,' Bell wrote, 'often guided by brilliant intuitions. But the nature of advanced technology is its intimate relation with science, where the primary interest is not the product itself but in the diverse properties of materials together with the underlying principles of order that allow for combination, substitution, or transmutation' (Daniel Bell, The Social

Framework of the Information Society', in *The Computer Age: A Twenty-Year View*, M.L. Dertouzos and J. Moses (eds), Cambridge, MA: MIT Press, 1980, p. 165).

57 Dennis Crompton, 'The Piped Environment', in *A Guide to Archigram 1961–74*, London: Academy Editions; Berlin: Ernst & Sohn, p. 254.

58 The surviving members do not always agree on the narrative that has been produced by the retrospectives and catalogues. There is a sense that those who were more prolific about drawing have received more credit than those who supplied the driving ideas. Greene recently described Archigram as 'not so much a group as a collection of exposed nerves/firecrackers . . . jumping and occasionally colliding to form even larger bangs' (David Greene, in Dennis Crompton (ed.), *Concerning Archigram*, London: Archigram Archives, 1998, p. 4.

59 A Comment from Peter Blake, *Archigram*, 1972, p. 7.

60 Many of the original documents have been 'touched up' for the exhibitions.

61 This is especially true of the catalogue produced for the Pompidou show. Two separate and quite different catalogues were published: a CD-sized one for Vienna and a much glossier affair by the Pompidou Center. The Vienna version contains a foreword by Toni Stooss and an afterword entitled 'ARCHIGRAM: The Final Avant-Garde of an Ageing Modernism?' by Herbert Lachmayer. The Pompidou catalogue includes translations of Archigram and Banham texts into French, and critical essays by François Barré, Alain Guiheaux, Dominique Rouillard and Jean-Claude Garcias. A thinner catalogue in the same format as the Vienna catalogue was produced for the reduced version of the show. That catalogue was introduced by David Greene and Michael Sorkin, and also contains commentaries by Barry Curtis and William Menking.

62 This description appeared in the unpaginated pamphlet for the International Dialogue of Experimental Architecture conference held in Folkestone in June 1966 and in the November 1965 issue of *Architectural Design*.

63 The projects contained in the *Archigram* were rarely collaborative. Most of the projects 'belonged' to various members of the group. David Greene has spoken of the tensions within the Archigram Group over the authorship of ideas: Ron Herron drawing Warren Chalk's ideas, Peter Cook expressing David's, etc. (4 March, 1999). Mike Webb moved to America in 1965, and most of the participants taught in the States for various intervals throughout the decade.

64 In addition to Living City at the ICA in 1963, for example, there was a film by BBC productions in 1966, the 'Beyond Architecture' audio-visual display at the Oxford Museum of Modern Art in 1967, and the traveling lecture 'Archigram Opera', which made the rounds in 1975.

65 Banham, 'Megastructure', 89.

66 *Archigram 8*, unpaginated.

67 *Archigram*, London: Studio Vista, 1972, p. 6.

68 A Comment from Peter Blake, *Archigram*, 1972, p. 7.

69 Toni Stooss, 'Foreword', *A Guide to Archigram 1961–74*, London: Academy Editions, 1994, p. 13.

70 Denis Postle, director, *Beaubourg: Four Films by Denis Postle*, Tattooist International for the Arts Council, 1980.

71 Greene, *Concerning Archigram*, 1–3.

72 Ayler first recorded 'Ghosts' on the album *Spiritual Unity* (1964).

73 Chalk was an avid enthusiast of jazz and sought to extend the analogy of 'jamming' to design.

74 The image came from the first issue of the *Living Art* magazine, captioned 'A film made by Richard Smith and Robert Freeman in 8mm colour (running time 10 minutes)'.

75 The code was taken from the cover of *Cambridge Opinion 17*, 1959, the theme of which was 'Living with the Sixties' and which included essays that directly fed *Archigram* endeavors by Colin Cherry, Gavin Brown, Reyner Banham, Lawrence Alloway, John McHale, James Meller and Alan Daiches.

76 Others, like Diana Agrest, had this faith as well: 'If the system of architecture and of design, even when we play with it, is always closed within a game of commentaries of language – a metalingual game – it is interesting to speculate on the outcome of a similar "game" of *non-design*, a game of the built world. For non-design is a non-language, and by comparison with a language, it is madness since it is outside language, and thus outside society. This non-language, this non-sense constitutes an explosion of the established language in relation to a sense already established (by conventions and repressive rules). It is symbolic of the built world outside the rule of design and their internal "linguistic" games. It permits us finally to understand another logic which informs the significance of building' ('Design versus Non-Design', reprinted in K. Michael Hays (ed.), *Oppositions Reader*, NY: Princeton Architectural Press, 1998, p. 347).

77 See Mary McLeod, 'Architecture and Politics in the Reagan Era: From Postmodernism to Deconstructivism', reprinted in K. Michael Hays (ed.), *Architecture Theory Since 1968*, Cambridge, MA: MIT Press, 1998, pp. 680–702; and Justus Dahinden, *Urban Structures for the Future*, London: Pall Mall Press, 1972, p. 70.

78 Sigfried Giedion, 'Introduction in the 1960s: Hopes and Fears', in *Space, Time and Architecture: A Growth of a New Tradition*, 4th edn, Cambridge MA: Harvard University Press, 1963.

79 '[F]or the past fifty years, architects have understood design as the product of some oversimplified form-follows-function formula. The situation even persisted during the years immediately following World War II, when one might have expected it would be radically altered. And as late as the end of the 1960s, it was still thought that the polemics and theories of the early Modern Movement could sustain architecture. The major thesis of this attitude was articulated in what could be called the English Revisionist Functionalism of Reyner Banham, Cedric Price, and Archigram. This neo-functionalist attitude, with its idealization of technology, was invested with the same ethical positivism and aesthetic neutrality of the prewar polemic' (Peter Eisenman, 'Post-Functionalism' (1976), reprinted in Hays, *Architecture Theory*, 237).

80 Greene, *Concerning Archigram*, pp. 1–2.