

Ecology without the Oikos: Banham, Dallegret and the Morphological Context of Environmental Architecture

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This paper makes the argument that architectural discourse should engage in a recovery of ecology in its original framing in the context of morphology. A history of architecture's conceptual engagement with morphology, through Arnheim, d'Arcy Thompson, and Berson, and its subsequent forays into morphological practices including parametrics, versioning and digital form-finding reveals a consistent tendency of morphology to eschew its ecological foundations. Why is the rhetoric on morphological change so consistently forgetful of its ecological origins? Why is a formalist monologue embraced at the expense of a situated dialogue between morphology and ecology? Specifically implicated in this imbalance is the question of ecology without the oikos – a term that articulates this forgetfulness as a willful omission of the paradigmatic situation of dwelling. Reyner Banham and François Dallegret's collaborative effort in the 1965 *Art in America* article, "A Home Is Not a House," is the lens through which these questions are considered. This paper challenges the perception of Dallegret as a mere illustrator of Banham's ideas, and posits the notion that his oeuvre produced the morphological context for Banham's ecological thinking.

¹ Ernst Haeckel, *The Wonders of Life: A Popular Study of Biological Philosophy* trans. Joseph McCabe (New York: Harper & Brothers, 1905): p. 197.

'Nothing is constant but change! All existence is a perpetual flux of 'being and becoming!' That is the broad lesson of the evolution of the world.'¹

-Ernst Haeckel

² D'Arcy Wentworth Thompson, *On Growth and Form* (Cambridge: Cambridge University Press, 1961), p.11.

'... the form of an object is a 'diagram of forces'...'²

-D'Arcy Wentworth Thompson

³ Henri Bergson, *Creative Evolution* trans. Arthur Mitchell (New York: Henry Holt & Co., 1913), p.302.

'... form is only a snapshot view of a transition...'³

- Henri Bergson

The Morphological Context of Ecology

The German biologist and naturalist, Ernst Haeckel, in his 1866 text *Generelle Morphologie der Organismen*, first coined the term 'ecology.' Derived from the Greek word 'oikos,' meaning household, Haeckel framed ecology as the economy of nature, and described it as follows:

'By ecology, we mean the whole science of the relations of the organisms to the environment including, in the broad sense, all the conditions of existence. These are partly organic, partly inorganic in nature; both, as we have shown, are of the greatest significance for the form of organisms, for they force them to become adapted.'⁴

⁴ Ernst Haeckel, *Generelle Morphologie Der Organismen* (Berlin: G. Reimer, 1866), pp.286-87. Haeckel was originally trained as a painter, though strongly encouraged by his father to pursue scientific research. Thus the images he produced as a scientific illustrator are also germane to this discussion, though outside of its scope. In their seminal book, *Objectivity*, Lorraine Daston and Peter Galison describe the controversy between Haeckel and Wilhelm His, who accused Haeckel of smuggling subjective interpretations into his illustrations. This debate may have relevance to the question of why Banham and Dallegret chose to include images of themselves in their article. See also: Lorraine Daston and Peter Galison, *Objectivity* (New York: Zone Books, 2007)

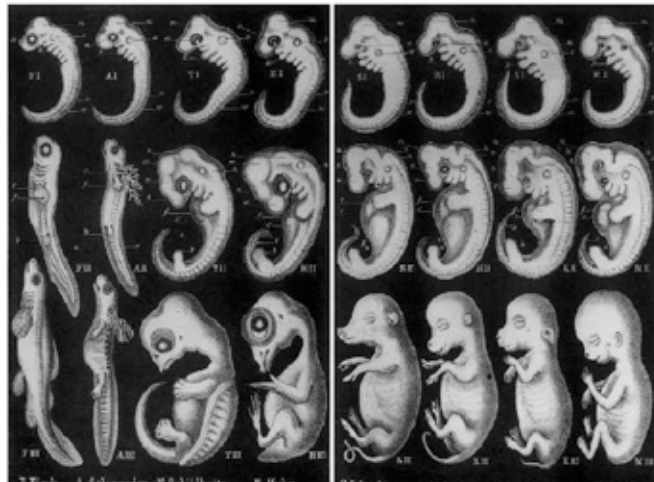


Fig.1 Ernst Haeckel, Drawing of Vertebrate Embryos, 1874.

Critical to Haeckel's framing of ecology is its emergence from the context of morphology. Biology, the science of life, emerged at the inception of the nineteenth century as a vehicle to reorient the interests of those who studied living things from outward appearance to performance, or from form to function. By 1830, morphology developed as the branch of this discipline that would take up the forms of animals and plants, and the structures, homologies and metamorphoses that govern and influence these forms. By the turn of the twentieth century, morphology was a firmly established science for the study of the history of variation of form. Haeckel's most well known foray into morphology resulted in the formulation of his recapitulation theory. He asserted that phylogeny recapitulates ontogeny, or more simply stated, that the embryological development of organisms reflects the evolutionary descent of the species. Though controversial for reasons that are outside the scope of this essay, Haeckel's morphological thinking is a critical context for his theorization

of ecology: first, because morphology is a relational and situational field attentive to the small changes that constitute development; second, this attentiveness to change privileges communicative exchanges between the organism and its environment; third, the debate over Haeckel's recapitulation theory articulated the subsequent stakes for his ecological thinking – that is, whether ecologies would be understood as situations or systems; and fourth, placing ecology within the milieu of morphological change ensured that it could not be oikos-centric, nor in this context could morphology be organism-centric, but rather, a co-evolutionary model emerged. This essay will consider whether recovering the morphological context of ecology might contribute to a more precise understanding of environmental architecture. This will be explored through the lens of Reyner Banham and François Dallegret's collaborative essay, "A Home Is Not a House" (1965).⁵

⁵ Perhaps more should be said about the precise nature of Banham and Dallegret's collaboration. Jean Lipman, the editor-in-chief of *Art in America* from 1930-70, introduced the two men. Lipman, an avid collector and patron of the arts, was quite knowledgeable about Dallegret's oeuvre, having published his work in previous issues of the journal. Through this introduction, I will argue, Lipman occasioned a dialogue between Dallegret's morphological work and Banham's ecological thinking.

Morphology's Architectural Influence

Architecture and morphology have a long and complex history that brings a scientific discipline, focused exclusively on the study of the variation of form, into historical proximity with late nineteenth-century architectural discourse, which was in the process of actively suppressing its own history of forms in the wake of the historicist debate over style. Contemporary interests in parametrics, versioning and digital form finding are part of this legacy of architecture and morphology, participating in a discourse that is inundated by scientism and that has all but forgotten the former reciprocity of ecology and morphology. If scientism adheres to the conventions of science without any demonstration of epistemological rigor, then one of the clear indicators of an operative ethos of scientism in contemporary architectural practice is the adaptation of the representational conventions of morphology in the ever-present iterative image. Pick up any architectural journal or magazine today, and be prepared to be confronted with what, at first glance, appears to be serialized imagery. This pseudo-morphology of small changes that rarely connote architectural adaptation, but rather are preoccupied with formal agility and acts of spatial contortionism, looks like morphology, but lacks the situational structure of ecology and its attendant relationships. These iterative representations promise to deliver to architecture a mechanism through which form-in-time can be explicitly and intelligibly represented. Under the guise of scientism, previous signifiers of spatial temporality like the subtle effects of weathering or the ephemeral manifestation of material decay are diverted into more didactic and explicitly formal venues for the exploration of architectural change. Influential in this shift is D'Arcy Wentworth Thompson's seminal text *On Growth and Form* of 1942, a book that found a new audience of architects with the advent of digital fabrication. Thompson's aphorism that the form of an object is a "diagram of forces" was a familiar operation to a generation of architects trained to

⁶ D’Arcy Wentworth Thompson, *On Growth and Form* (Cambridge: Cambridge University Press, 1961), p.11. This moment in which digital architectural practices rediscovered the work of D’Arcy Thompson importantly coincided with Gilles Deleuze’s evocation of the end of representation and the subsequent rise of diagrammatic practices in architecture.

achieve formal invention through the application of fictionalized forces on primitives or NURBS (Non-uniform rational B-splines).⁶

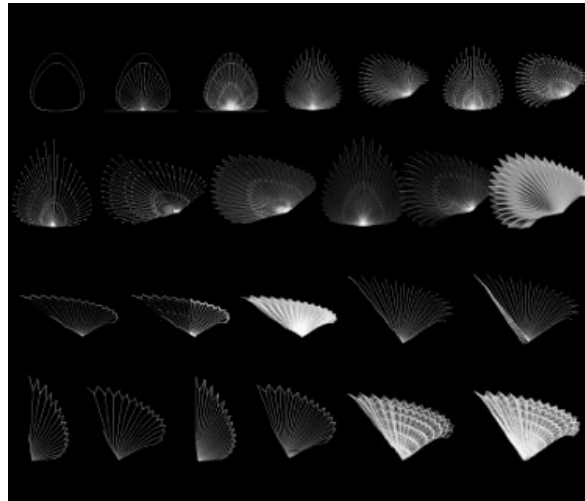


Fig 2. From AD: *Techniques and Technologies of Morphogenetic Design* (2006)

⁷ Rudolph Arnheim, *Art and Visual Perception: A Psychology of the Creative Eye* (Berkeley: The University of California Press, 1954), p.416.

Just twelve years after the publication of *On Growth and Form*, Rudolph Arnheim would make an almost identical claim to Thompson’s in *Art and Visual Perception* (1954). In a section of the text entitled ‘A Diagram of Forces,’ Arnheim adapts D’Arcy Thompson’s aphorism, applying it to our perception of natural forms, when he writes: “Natural objects often possess strong visual dynamics because their shapes are the traces of the physical forces that created the objects.”⁷ Arnheim’s desire to analogically extend the diagram of forces to include visual perception is not unlike appropriating the logic for explorations in contemporary digital form-finding. However, the crucial question for this investigation is why the rhetoric on morphological change is so consistently forgetful of its ecological origins? Why is a formalist monologue embraced at the expense of a situated dialogue between morphology and ecology?

Henri Bergson’s *Creative Evolution* (1913) begins to elucidate these questions. Aphoristically, this text is often associated with the statement: “... form is only a snapshot view of a transition...” but in its original context, Bergson writes:

'What is real is the continual change of form: form is only a snapshot view of a transition. Therefore, here again, our perception manages to solidify into discontinuous images the fluid continuity of the real. When the successive images do not differ from each other too much, we consider them all as the waxing and waning of a single mean image, or as the deformation of this image in different directions. And to this mean we really allude when we speak of the essence of a thing, or of the thing itself.'⁸

⁸ Henri Bergson, *Creative Evolution* trans. Arthur Mitchell (New York: Henry Holt & Co., 1913), p.302.

Bergson's reference to the essence of a thing places his morphological insight into the context of ontology, and suggests that the constantly evolving nature of form is always to be situated in the life of that form, including the situation from which it emerges.

Returning to the earliest usage of 'morphology' in Goethe's introduction to his botanical writings (published in 1817), we can locate some salient characteristics of the morphological that preface its ongoing dialogue with the ecological. In these writings, Goethe draws a sharp distinction between Gestalt and Bildung, which is critical to his burgeoning morphological practices:

'This is why German frequently and fittingly makes use of the word Bildung (formation) to describe the end product and what is in process of production as well. Thus in setting forth a morphology we should not speak of Gestalt, or if we use the term we should at least do so in reference to the idea, the concept, or to an empirical element held fast for a moment in time. When something has acquired a form it metamorphoses immediately to a new one. If we wish to arrive at some living perception of Nature we ourselves must remain as quick and flexible as Nature and follow the example she gives.'⁹

⁹ Jeremy Naydler (ed.), *Goethe on Science: An Anthology of Goethe's Scientific Writings* (Edinburgh: Floris Books, 1996), p.50.

Goethe's distinction here between Gestalt and Bildung, between that which is fixed and that which is simultaneously emerging and emerged, is critical in framing morphological pursuits and their interest in both the product and process of production. Goethe also draws attention to the situation of morphology and the fact that it is never an isolated endeavour, when he writes:

"Above all we must remember that nothing that exists or comes into being, lasts or passes, can be thought of as entirely unadulterated. One thing is always permeated, accompanied, covered, or enveloped by another; it produces effects and endures them."¹⁰

¹⁰ Ibid. p.60.

¹¹ In order to be consistent with Goethe's evocation of *Bildung* as both one who is cultured and the continuous process of enculturation, I am using the term 'envirning.' While 'environment' connotes a reified condition and is exclusively deployed as a noun, 'envirning' preserves both the active condition of becoming and the final product of that process simultaneously.

¹² Ibid.

The explicit language of envirning and enveloping that Goethe deploys already anticipates Haeckel's coining of 'ecology,' and emphasizes his belief that forms come to being both relationally and situationally.¹¹ Finally, Goethe anticipates the sequential and iterative tendencies of morphology as a kind of logic of development, when he writes: "Whatever Nature undertakes, she can only accomplish it in a sequence. She never makes a leap."¹² For Goethe, nature's incremental adaptations and minute transformations form a seamless logic that is visually intelligible. This last point in all likelihood gives rise to subsequent formalist morphologies, but also establishes an environmental relationship among developing forms.

Ecology in the Context of Banham's Body of Work

Critics who deride Reyner Banham's writing on ecology for its lack of relevant ecological insight miss the point. Banham's *Los Angeles: The Architecture of Four Ecologies* (1971) is not about ecology; rather, it is ecological. Banham recognized that to make ecology the subject of his ruminations would be to objectify and artificially stabilize urban relationships in such a way as to distort the nature of the interactions, by forcing intelligibility upon them through an exaggerated emphasis on a singular moment. Borrowing Bergson's aphorism, Banham would be telling the story of the ecology of Los Angeles by describing a snapshot of a transition. Rather than capitulate to some operative definition of 'ecology,' imposing science's epistemological strictures on the discipline of architecture from without, Banham appropriates the term, making it architecture's own, and proceeds to enact ecological operations upon architecture from within. In the introduction Banham writes:

'What I have aimed to do is to present the architecture (in a fairly conventional sense of the word) within the topographical and historical context of the total artefact that constitutes Greater Los Angeles, because it is this double context that binds the polymorphous architectures into a comprehensible unity that cannot often be discerned by comparing monument with monument out of context.'¹³

¹³ Reyner Banham, *Los Angeles: The Architecture of Four Ecologies* (London: Penguin Books, 1971), p.23.

Here, Banham establishes this pursuit as one of relational contexts, or ecologies, that environ polymorphous architectures, or morphologies. However, Banham's desire to think Los Angeles ecologically soon surpasses the double context of topography and history. Thus 'Surfurbia', the first of the four ecologies, is discussed according to: its geological context that emerges from below the sea in the Jurassic period; the historical context of the railways that made it possible for people to live at the beach and work elsewhere; and the psychological and physiological contexts of the health and pleasure associated with the beach. This then

becomes the ecology in which Banham situates Craig Ellwood's Hunt House (1955) and Rudolf Schindler's Lovell House in Newport Beach (1923-36), iconic mid-century modernist and modernist projects wrenched from their traditional historical moorings and set adrift amidst the burgeoning cottage industry of the surf board.

The most vitriolic attacks on Banham's conception of ecology are typically reserved for his fourth ecology – 'Autotopia', yet nowhere in the writing does Banham espouse the Los Angeles freeways as exemplars of sound ecological thinking. Rather, the freeways are dubbed ecological because 'Autotopia' designates a lived environment. Banham writes: "The freeway is where the Angelenos live a large part of their lives."¹⁴ Banham even goes so far as to say that the freeway conditions its inhabitants and "prints itself deeply on the conscious mind and unthinking reflexes."¹⁵ In Banham's capable hands, the ecologies of Los Angeles are explored from without, as a constellation of possible contexts, and from within, as they are lived by their various inhabitants. This reciprocity is not perfect, because as Banham openly admits, the system can fail – accidents, traffic jams, and rush-hour congestion abound, yet these things are merely more accrued evidence of 'Autotopia's' status as a lived environment. When Banham does explicitly address the issue of smog, he does so through its psychological, rather than its ecological, context:

"To make matters worse, analysis showed that a large part of the smog (though not all, one must emphasize) is due to effluents from the automobile. Angelenos were shocked to discover that it was their favorite toy that was fouling up their greatest asset."¹⁶

This contention, that the scientific analysis of air pollution quite literally hit Angelenos where they live, could in fact be more salient to the ecological well being of the city than any mere reckoning with the data itself. Banham actively eschews 'systems-thinking,' a scientific world view that would isolate the freeway as a toxic condition and then proceed to 'solve' its problem, in favour of a more synthetic approach that frames 'Autotopia' as a lived environment and understands that any changes can potentially impact both the psychology and the lifestyle within any given ecology.

Morphology in the Context of Dallegret's Work

If morphology is a science that studies the history of variation of forms, then François Dallegret's work is an ideal repository for such metamorphic contemplation.¹⁷ His architecture, drawings, installations, furniture and product designs all betray an elastic imagination and a tacit interest in the morphological. Goethe's morphology and his invocation of the German concept of *Bildung* cultivates a notion of form that is simultaneously

¹⁴ Ibid. p.213.

¹⁵ Ibid. p.214. Banham continues, "As you acquire the special skills involved, the Los Angeles freeways become a special way of being alive, which can be duplicated, in part, on other systems (England would be a much safer place if those skills could be inculcated on our motorways) but not with this totality and extremity."

¹⁶ Ibid. p.216.

¹⁷ Here, I use the term 'metamorphic contemplation' in reference to Dallegret's work because I believe that due to the serial or iterative nature of his work, form is never definitive, but rather in constant negotiation. It is important, however, to differentiate this claim from the formal gymnastics of contemporary parametrics, versioning, and digital form finding. What is unique to Dallegret's oeuvre is that the possibility for change resides in the dialogue between the form and its environment - it is not given as an a priori condition or algorithm. Thus, metamorphic contemplation in Dallegret's work involves the imagined changes in form born of its dialogue with its situation, and may paradoxically mean that the form itself does not change.

product and process of production, and Dallegret's work subtly mines the tension between emerging and emerged forms. Dallegret's 1965 project *Le Drug*, a commission to retrofit a typical Montreal house to accommodate a drugstore above and a restaurant below, reveals an early interest in this sort of variation of forms. The high-gloss, sinuous forms of the restaurant, like Haeckel's recapitulation theory, seem to capture the very evolution of something as quotidian as a table. Dallegret describes the fabrication process as follows:

"... in terms of the design of the restaurant at *Le Drug* everything was made of regular stuff – standard tables and chairs – but I wrapped this furniture with wire mesh and then sprayed it with cement. It was then polished and epoxyed. The same process was used on the walls."¹⁸

¹⁸ Alessandra Ponte, "François Dallegret: In Conversation with Alessandra Ponte," *AA Files*, 58 (2009): 35.



Fig 3. François Dallegret, *Le Drug*, 1965

Beneath the accretions of wire mesh, sprayed cement and epoxy lurks a generic table, and the amorphous formal language simultaneously evokes and denies this categorization. If Dallegret's table is a snapshot of a transition, then even without explicit knowledge of its fabrication process, the form conveys a sense of equipoise: that it has stabilized as a table (as indicated by all of the usual detritus – salt, pepper, sugar, ash tray and occupant), but that it might just as easily have transformed into something else.

In 1966, Dallegret's project 'Art Fiction' was featured on the cover of *Art in America*. This futuristic speculative project with science fiction overtones imagines the artist of the future as the creator of atmospheres. This is achieved by "electric emanations" from the artist's body, which is morphologically augmented by adaptive prosthetic devices. Such morphological adaptations include a comically protracted cranium, dubbed the 'Expanded Encephalic Creativity Locus (*Matière Grise*)' by Dallegret. Sensory supplementation in the form of the 'cosmic vision

penetrator,' the 'auricular flip-flop sonic drum,' the 'auto-bucal taste maintenance tabulator,' and the 'olifactive mnemonic inhaler device' represent mechanical bodily enhancements that frame the morphological variation of forms as a hybrid prospect. In the series of drawings that comprises 'Art Fiction,' Dallegret casts the nets of human morphology more broadly, encompassing the space the body occupies, the atmospheres it engages, the extended realm of sensory perception and the very possibility of mechanical metonymic extensions. In this sense, the work posits an ecological situation for morphology in which the small adaptive changes and variations of form are situated within environments and potentially predictive of the atmospheres these incremental changes will produce.

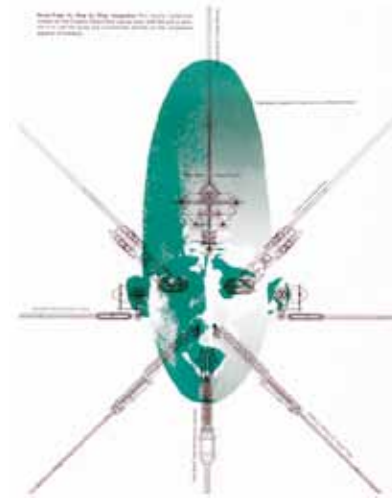


Fig 4. François Dallegret, Art Fiction, 1966

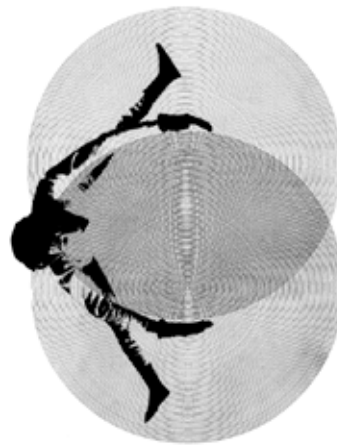


Fig 5. François Dallegret, Art Fiction, 1966



Fig 6 & 7. François Dallegret, Spring Chair 1967

In one image, François Dallegret is photographed sitting in his 1967 project, Spring Chair, and while the chair appears to be static, the upper half of his body reveals the blur of a stop-motion photograph and the suggestion that the chair's occupant has been arrested while moving. It is as if this single image and the motion it captures anticipate the subsequent serialized photographs of the project. Utilizing the convention of the contact sheet and the attendant connotation that no single image captures the story of the project, Dallegret produced a serialized documentation that all but exhausts possible modes of inhabiting the chair. These representations are morphological in their nature, iteratively documenting minute variations in form; however, the form that is constantly changing is the chair's occupant and not the chair. Here, Dallegret's morphology is born of the constancy of the chair's form and the variations in his own comportment. Even the choice to chronicle the chair through the

genre of self-portraiture, which is repeated elsewhere in Dallegret's work, can be characterized as a morphological tendency, as a nod to his ever-evolving artistic self and a confirmation that each of us is a work in progress adapting to our respective environments. Interestingly, when captured in profile, this project is not readily identifiable as a "chair" - the seamless piece of undulating metal is without scale or signifier and posits itself as abstraction in the extreme. It is as if occupying the chair becomes a compensatory act of signification, connoting function, scale and potential modes of inhabitation. Dallegret thus places a premium on the relational and the interactive. Through the very act of inhabiting the chair, a relationship is catalyzed in which the morphological variations of Dallegret's comportment enter into a dialogue with the ecologies of function, scale and inhabitation.



Fig 8. François Dallegret, Spring Chair 1967



Fig 9. Marc-Antoine Laugier,
Essai sur l'Architecture,
Frontispiece (1753).



Fig 10. Eugène Viollet-le-Duc,
Habitations of Man in All Ages,
(1875).

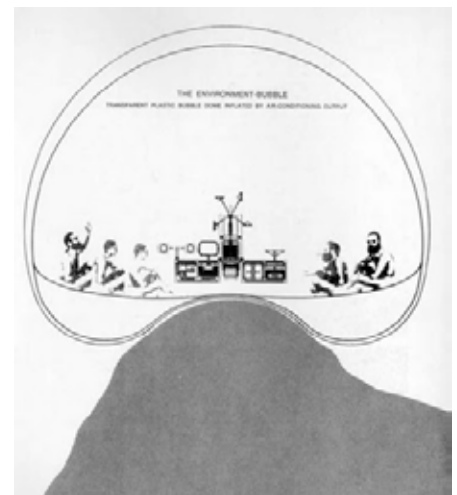


Fig 11. Reyner Banham + François
Dallegret, "A Home Is Not a House," The
Environment Bubble (1965).

Architecture's Primitive Hut Reconsidered

Historically, the primitive hut has constituted a litmus test for the discipline of architecture. As readymade narratives on the origins of architecture, these images distil historical biases and proclivities and often tell us as much about where architectural practice is destined to go, based upon the revisionary tale of where it is purported to have come from. Abbé Laugier's rendition of the hut firmly establishes ancient Greek architecture as the origin of building practices, reflecting his affinities with the ancients in the *Querelle des Anciennes et des Modernes*, and anticipating the historical eclecticism of the nineteenth century. Eugène Viollet-le-Duc's hut of 1875 suggests a utilitarian bent in which being sheltered from the elements is a primary concern, prefiguring the ensuing functionalist doctrines of the twentieth century. Though Reyner Banham and François Dallegret never explicitly posit their environment bubble as a primitive hut, the text and images are full of allusions to the campfire and the paradigmatic nature of dwelling. Banham's speculations on architecture's origins are primarily concerned with controlling the environment:

'Man started with two basic ways of controlling the environment: one by avoiding the issue and hiding under a rock, tree, tent or roof (this ultimately led to architecture as we know it) and the other by actually interfering with the local meteorology, usually by means of a campfire, which, in a more polished form, might lead to the kind of situation under discussion. Unlike the living space trapped with our forebears under a rock or roof, the space around a campfire has many unique qualities which architecture cannot hope to equal, above all, its freedom and variability.'¹⁹

¹⁹ Reyner Banham, "A Home Is not a House," illustrated by François Dallegret, *Art in America*, 2 (1965): 75.

Though this reference to the campfire could be dismissed as nostalgic, Banham's use of the imagery seems more concerned with its unexploited potential than its status as origin. Cleverly, Banham utilizes the conceit of origin to undermine and question the contemporary practice of architecture. Anticipating the book he will write in four years, *Architecture of the Well-Tempered Environment*, Banham diverts our attention from architectural form and typology, in order to imagine an alternative history or future of architecture seen through the lens of environmental control. This is where Banham locates the untapped potential of architecture captured so beautifully in Dallegret's now canonical image of the environment bubble, and this is where architectural freedom and variability resides for them. Banham's teacher, Sir Nikolaus Pevsner famously wrote, "A bicycle shed is a building; Lincoln Cathedral is a piece of architecture."²⁰ In one fell swoop, Banham and Dallegret's environment bubble calls this pronouncement into question, locating architecture's agility in the prosaic realm of building systems.

²⁰ Nikolaus Pevsner, *An Outline of European Architecture* (Hammondsworth: Penguin, 1958): p. 23.

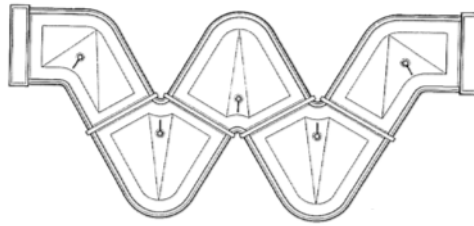


Fig 12. François Dallegret, Illuminated 'W' (1965).

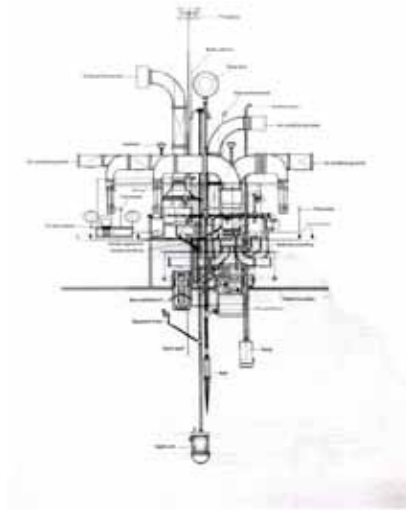
What Should Dallegret Draw?

François Dallegret's drawings are often framed as illustrations of Banham's environmental or ecological ruminations; however, the question of ecology's morphological context may facilitate a repositioning of this work. When Banham compares architecture's capacities to those of the campfire, architecture comes up short, disparagingly described as the trapped space under the roof. In the opening lines of the essay, Banham opines:

'When your house contains such a complex of piping, flues, ducts, wires, lights, inlets, outlets, ovens, sinks, refuse disposers, hi-fi reverberators, antennae, conduits, freezers, heaters – when it contains so many services that the hardware could stand up without any assistance from the house, why have a house to hold it up?'²¹

²¹ Reyner Banham, "A Home Is not a House," illustrated by François Dallegret, *Art in America*, 2 (1965):.70.

It should be noted that the 'W' with which Banham's diatribe begins is rendered by Dallegret as an illuminated letter in the form of an HVAC duct. The content of the essay speaks to an inversion of architectural priority in which form is supplanted as a primary ordering device by prosaic systems. Thus, what Dallegret is representing is the demise of the architectural envelope and the triumph of technology as a more agile delivery system of creature comforts. Fetishized ductwork is just the beginning. In an image entitled, 'Anatomy of a Dwelling,' all connotations of shelter are removed - the predominating axis mundi of the dwelling is plumbing, culminating in the humorously anticlimactic omphalos of the septic tank.

François Dallegret, *Anatomy of Dwelling*, 1965

Banham's caption to this image reads:

'With very little exaggeration, this baroque ensemble of domestic gadgetry epitomizes the intestinal complexity of gracious living – in other words, this is the junk that keeps the pad swinging. The house itself has been omitted from the drawing, but if mechanical services continue to accumulate at this rate it may be possible to omit the house in fact.'²²

²² Ibid. p.71.

Banham and Dallegret consistently operate upon the conventions and the norms of the discipline to formulate a critique of architectural agency and the discipline's misplaced priorities.

If Dallegret's role in this collaboration supersedes the task of mere illustration, then what did he draw, and how can we position this effort with respect to both ecology and morphology? What Banham and Dallegret jointly explore in this article is the role of criticism as a visual and discursive practice. Giving visual expression to the architectural task of envioning is no easy feat. Given that the conditioning of space eschews both visual and verbal representation, Banham and Dallegret leverage their roles as critics to push the boundaries of disciplinary conventions and influence architectural discourse on the environment. In an essay on the failure of criticism, Bruno Latour articulates the role of the critic as forging a dialogue between 'matters of fact' and 'matters of concern.'²³ Banham and Dallegret's polemic adeptly maps the matters of cultural concern of the mid 1960's: the environment, the anti-establishment sentiments of the counter culture and the collective desire for mobility and other forms of inhabitation that touch lightly on the earth. The salience of their collective effort resides in the positing of a hypothetical matter of fact – an *environment bubble* – that actively engages these matters of concern and

²³ Bruno Latour, 'Why Has Critique Run Out of Steam? From Matters of Fact to Matters of Concern,' *Critical Inquiry*, 30 (2) (2004): 246. Latour appropriates this terminology from Heidegger's contemplation of the thing. This is how he summarizes the role of the critic: "The critic is not the one who debunks, but the one who assembles. The critic is not the one who lifts the rugs from under the feet of naïve believers, but the one who offers participants arenas in which to gather. The critic is not the one who alternates haphazardly between antifetishism and positivism like the drunk iconoclast drawn by Goya, but the one for whom, if something is constructed, then it means it is fragile and thus in great need of care and caution."

constructs a forum for future discourse and experimentation. In this sense, Dallegret's drawings are not illustrative; rather they perform architectural criticism through the lens of the speculative project.

In the Context of Morphology



Fig 14. Bubble Morphology from Fuller (1960), to Archigram (1968), and Hans Hollein (1969)

In order to establish that the *environment bubble* represents a dialogue between Banham's ecological thinking and Dallegret's morphological thinking, it is critical to locate the morphological contexts of the work. Perhaps the most obvious of these is the morphological context of the 'bubble.' A cursory examination of experimental uses of the bubble morphology in the 1960s, suggests that the potential elasticity of bubbles facilitated anything from the individual abode to the annexation of large portions of the city. So whether we consider Buckminster Fuller's Manhattan Dome of 1960, or Archigram's Suitaloon at the 1968 Venice Triennale or Hans Hollein's Mobile Office of 1969, the seduction of the bubble is predicated upon its very ability to adapt to a multitude of contexts and conditions. Banham's preoccupation with building systems in general, and heating, ventilation and air conditioning in particular, made the pneumatic structure of the *environment bubble* irresistible to him. Here was a structure that owed its very existence to an infusion of air, and whether this occurred through the prowess of the human lungs (Archigram) or the quotidian efficiency of the household vacuum (Hollein), for Banham the pneumatic bubble pushed the conditioning of air to the forefront of architectural discourse.²⁴

²⁴ Dallegret also came to this collaboration with a well-honed interest in pneumatics, given his friendship with Bernard Quentin, an artist who experimented on pneumatic sculpture with electronically induced respiration that mimicked the organic process. See Alessandra Ponte, "François Dallegret: In Conversation with Alessandra Ponte," *AA Files*, 58 (2009): 34.



Reyner Banham + François Dallegret, Title Page and Environment Bubble, 1965.

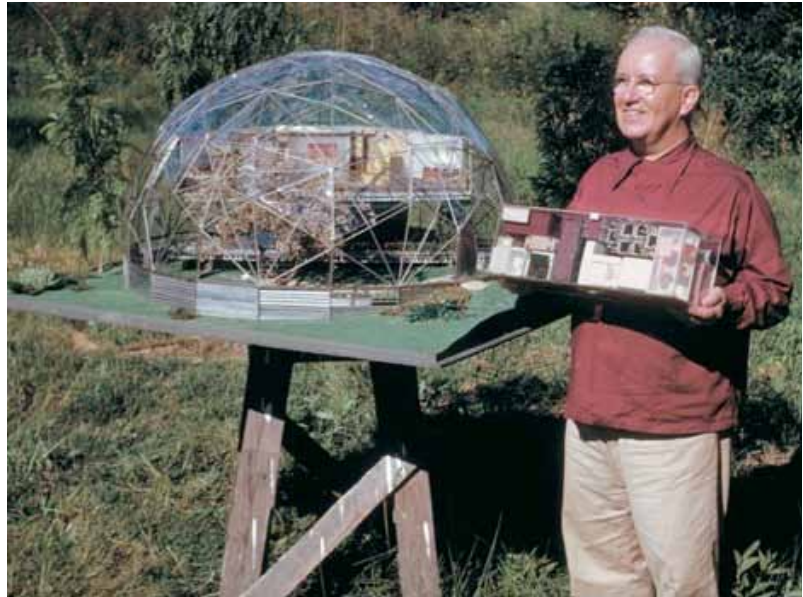


Fig 15. Buckminster Fuller, Standard-of-Living-Package (1949)

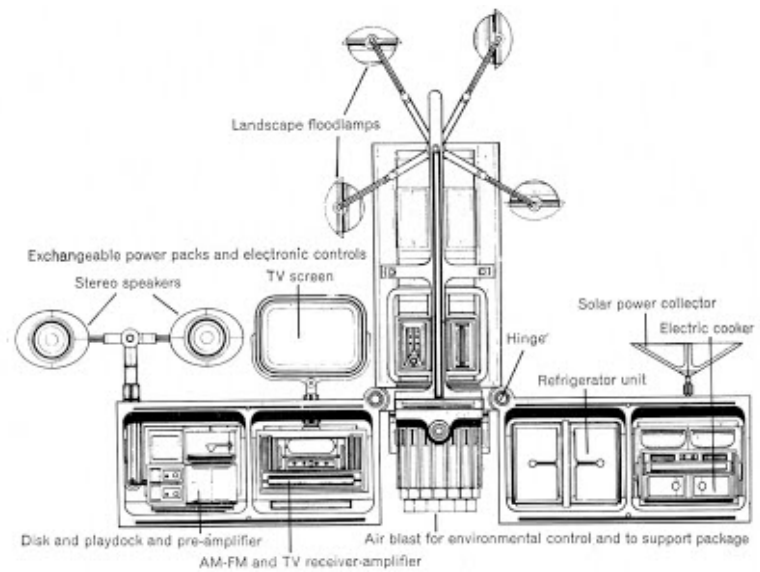


Fig 16. Banham + Dallegret, Standard-of-Living-Package (1965)

The environment bubble can also be considered with respect to the morphological context of the standard-of-living-package. In “A Home Is Not a House,” Banham credits Buckminster Fuller with coining both of the operative terms of his argument: the environment bubble, and the standard-of-living-package. Fuller’s standard-of-living-package consisted of a set of portable furniture and appliances for a family of six that could be unpacked in a climate-controlled geodesic dome; it was his answer to the post-war housing shortage. Less survivalism and more elementarism, Fuller’s package included the basic building blocks of domestic habitation.

In Dallegret and Banham's vision, we see Fuller's assemblage of discrete objects transformed into a system with the capacity to control the environment while sustaining the desired lifestyle. Banham writes,

'But a properly set-up standard-of-living package, breathing out warm air along the ground (instead of sucking in cold along the ground like a campfire), radiating soft light and Dionne Warwick in heart-warming stereo, with well-aged protein turning in an infrared glow in the rotisserie, and the ice maker discretely coughing cubes into glasses on the swing-out bar – this could do something for a woodland glade or creek-side rock that Playboy could never do for its penthouse.'²⁵

²⁵ Reyner Banham, "A Home Is not a House," illustrated by François Dallegret, *Art in America*, 2 (1965): 75. Banham's evocation of Dionne Warwick is also a sardonic nod to her 1964 song entitled 'A House is not a Home' from which he gleaned the title of the essay. This popular culture reference situates questions of ecology squarely within the purview of lifestyle, which is one of the essays prescient themes.

Embedded within the morphology of both standard-of-living-packages is the conceit of adaptability, though in Fuller's case this is object-centric, whereas with Banham and Dallegret it is located within a system with the nascent capacity to recede from our notice.

Finally, the environment bubble as it is depicted in "A Home Is not a House," is positioned within the dual contexts of the morphology of the self and the morphology of representation. An odd detail of the essay that few scholars comment upon is the inclusion of both men's profiles under the title of the essay. Closer scrutiny of the inhabitants of the environment bubble reveals five nude figures – two images of Dallegret in exactly the same pose, and three images of Banham adopting three different poses. Though it was commonplace in Dallegret's work to include himself in the documentation of his projects, and though images of Banham perched upon his fold-up bike abound, why did the collaborators choose to include labelled profiles and nude depictions in this project? As an architect, and as a historian and critic, Dallegret and Banham were no doubt cognizant of the continuous development of their creative selves. However, if the environment bubble is a cautionary tale for the discipline of architecture, then why would its authors implicate themselves in this way? Their story is an evolutionary tale about the prowess and agility of technology, the sluggish and deliberate nature of architecture and a decisive cultural moment in which the former threatens to overtake the latter. Dallegret populated the bubble with a montage of figures created from the repetitive images of his body with Banham's head grafted on top. As these figures huddle around the standard-of-living-package, the themes of the essay can be extracted from the image. The nude figures in their back-to-nature postures around the metaphoric campfire allude to the burgeoning environmentalism among the youth culture of the 1960s. The snarky substitution of the standard-of-living-package for the fire, references technological prowess and the lifestyle it can deliver. Dallegret and Banham's presence implicates the role of the architect, historian and critic in this moment of disciplinary crisis, while creating a space for this sort

of debate. The bubble's tenuous connection to the earth as it teeters upon its inhospitable site alludes to the ecological desire to touch down lightly and leave as small an imprint as possible. Finally, the multiple iterations of Banham and Dallegret speak to the need to preserve the dialogue between morphology and ecology. Cumulatively, the morphology of the self, the morphology of the standard of living, and the morphology of the bubble, depict both architecture and architect as products and continuously evolving processes. By preserving the dialogue between morphology and ecology, Banham and Dallegret teach us that an environment is never a reified entity, but rather, it is a complex network of relationships exchanging with and adapting to their situation.

Ecology without the Oikos

Why do Banham and Dallegret so persistently eschew the house? Why do they advance a version of ecology without the oikos? In their essay, the paradigmatic dwelling is transformed, for habitation is no longer a question of shelter, but rather, of conditioning. Though Banham sardonically quips, "surely this is not a home, you can't bring up a family in a polythene bag," the environment bubble and the standard-of-living-package shift architectural priorities from enclosure to building systems, from the monumental to the temporary, and from the discipline's long held aspiration for permanence to a new environmentally-conscious agenda of touching down lightly.²⁶ In this sense, the environment-bubble embodies a diagram of architecture's capitulation to technological imperatives, its envelope or skin reduced to a token gesture of enclosure, nearing invisibility, and quite literally stretched to both its material and disciplinary limits. For Banham and Dallegret, this repeated questioning of the efficacy of the house plays a rhetorical function in their collaborative essay. Though the terms of architecture's engagement with the domestic may have radically shifted through their concerted efforts, the reappearance of this question in its many guises functions like a recurring chorus – a duet of the ecological and morphological – that continuously and harmoniously asserts their belonging together. What the author hypothetically withholds, namely the house, the illustrator compensates for with images in which practices and styles of inhabitation assert the dogged persistence of domestic life. Banham and Dallegret may be promiscuously dangling the possibility of ecology without the oikos in front of the discipline of architecture, but only to demonstrate how untenable morphological changes can be in the absence of a profound consideration of inhabitation and lived experience. In this moment of global ecological crisis Banham and Dallegret's cautionary tale about the technological imperative and architecture's response or capitulation to it, is a salient reminder. Will architecture experimentally explore the subtle relationships between ecology, morphology and technology, or will it realize this dystopian vision of ecology without the oikos?

²⁶ Reyner Banham, "A Home Is not a House," illustrated by François Dallegret, *Art in America*, 2 (1965): 76.