

# Durational Architecture

---

An Exploration of the Role of Duration in Private Dwelling

by  
A. Robert P. Eland  
Bachelor of Architectural Studies

A thesis submitted to the Faculty of  
Graduate Studies and Research in partial fulfillment  
of the requirements for the degree of  
Master of Architecture

## **Abstract**

---

This thesis is a study of the concept of duration conceived of as the totality of experience in time. This concept is explained by the philosopher Henri Bergson. Duration is analyzed through the continuous multiplicity. Through the theories on actions and events by Donald Davidson and Joel Feinburg, an architectural programme is reformulated for the temporal design of a house. Strategies found in Giorgio De Chirico and Umberto Boccioni's art works, as they are related to temporality and space, are used to focus the design of a house toward events that occur in space, rather than space itself. The result of this inquiry is a durational architecture constructed through recurring event spaces that are designed with respect to time and programme.

## Acknowledgements

---

The author would like to acknowledge the following persons.

Heather and John Eland

Dr. Stephen Fai

The Members of studioEXIT

... and most of all Sarah Schindler for her patience and understanding.

## Table of Contents

---

Title	Page
List of Illustrations	4
Chapter 1 – Introduction	5
Chapter 2 – Henri Bergson and Duration	8
Chapter 3 – Actions and Events	17
Chapter 4 – Programme	23
Chapter 5 – Multiplicities in the Works of De Chirico and Boccioni	30
Chapter 6 – House of the Event	39
Chapter 7 – Conclusion	68
Chapter 8 – Postscript	71
Bibliography	75
Glossary of Terms	77
Appendix: Model Photos	79

## List of Illustrations

---

Figure	Title	Page
Figure 1	– Adjacency Diagram	25
Figure 2	– Continuous Adjacency Diagram	27
Figure 3	– Giorgio de Chirico’s “Gare Montparnasse (The Melancholy of Departure)”	30
Figure 4	– Overlay of Giorgio de Chirico’s “Gare Montparnasse (The Melancholy of Departure)” by William Rubin	33
Figure 5	– Overlay of Boccioni’s Development of a Bottle in Space by Author	37
Figure 6	– Drawing – Events of Domesticity (left)	43
Figure 7	– Drawing – <i>Key architectures</i> (right)	43
Figure 8	– Photo – Part of Model of <i>Key architectures</i>	48
Figure 9	– Drawing – Part of <i>Key architectures</i>	48
Figure 10	– Photo – Part of Model of <i>Key architectures</i>	50
Figure 11	– Drawing – Part of <i>Key architectures</i>	50
Figure 12	– Photo – Part of Model of <i>Key architectures</i>	52
Figure 13	– Drawing – Part of <i>Key architectures</i>	52
Figure 14	– Photo – Part of Model of <i>Key architectures</i>	55
Figure 15	– Drawing – Part of <i>Key architectures</i>	55
Figure 16	– Drawing – Ground Floor Plan	58
Figure 17	– Drawing – Second Floor Plan	63
Figure 18	– Drawing – Section Facing North	65
Figure 19	– Drawing – Section Facing South	66
Figure 20	– Photo – Model of <i>Key architectures</i> – Left Side	79
Figure 21	– Photo – Model of <i>Key architectures</i> – Left Centre Side	80
Figure 22	– Photo – Model of <i>Key architectures</i> – Right Centre Side	81
Figure 23	– Photo – Model of <i>Key architectures</i> – Right Side	82
Figure 24	– Photo – Model of House – Front Façade	83
Figure 25	– Photo – Model of House – Rear Facade	84
Figure 26	– Photo – Model of House – South Section Facade	85
Figure 27	– Photo – Model of House – North Section Facade	86

## Chapter 1 – Introduction

---

"A process cannot be understood by stopping it. Understanding must move with the flow of the process, must join it and flow with it."<sup>1</sup>

The design of Architecture is a temporal process. To understand the temporality of architecture is to understand the flow of time, not through stopping it, but joining it and flowing with it. This dissertation seeks to explore this concept from the viewpoint of philosopher Henri Bergson. He formulates that duration is the concept through which we experience the passage of time; lived time. It is this lived time that is of the utmost importance to architecture.

In *Becomings: Explorations in Time, Memory, and Futures*, Elizabeth Grosz notes that "... there is one and only one time, but there are also numerous times: a duration for each thing or movement, which melds with a global or collective time."<sup>2</sup> It is through this quote that Grosz suggests a relation to Bergsonian duration; Grosz is suggesting a multiplicitous concept of time that is Bergsonian duration<sup>3</sup>. This duration is in not divisible and cannot be divided without changing its nature. It is the function of this melding of time that will illustrate what Bergson notes as multiplicities, a conceptual device through which time is melded together and not simultaneous. This suggests that singular units of time cannot exist simultaneously within this multiplicitous concept of time.

---

1 Herbert, Frank. *Dune*. London: Hodder and Stoughton, 1965. pp. 45.

2 Grosz, Elizabeth. "Thinking the New: Of Futures yet Unthought". *Becomings: Explorations in Time, Memory, and Futures*. Elizabeth Grosz. Ithaca: Cornell University Press, 1999. pp. 17.

3 Bergson, Henri. *Time and Free Will: An Essay on the Immediate Data of Consciousness*. Trans. F. L. Pogson. New York: MacMillan, 1958. pp. 82.

The temporality of architecture as constructed through the current concept of programme is fixed and bounded in space, representing one instant in time. Programme, in the durational sense, is that which moves beyond bound space. Through re-examining the current concept of programme we will show an architectural time that reflects Bergsonian duration. The idea that programme can be thought of as events rather than as spaces is important for the distinction between a temporal programme and one that is purely spatial. It is through the re-imagining of architectural programme that we can include a duration-centric view that is used to construct a durational architecture.

Much like the concept of the multiplicities, the idea of interpenetration will play a valuable role. Interpenetration provides us with a method of connecting spaces and objects to a temporal manifold. Interpenetration allows us to create the quality of temporal connectedness through use of the concept of the continuous multiplicity, as introduced by Bergson. Through the study of the surrealist painter Giorgio de Chirico's "Gare Montparnasse (Melancholy of Departure)" to the futurist sculptor Umberto Boccioni's "Development of a Bottle in Space" we will outline the process by which this concept is developed.

The final section of the thesis will employ all of the concepts described above to design a small home in a durational manner. This will be done through the use of the concept of the continuous multiplicity as defined by Bergson; through a

unique understanding of architectural programme; through an understanding of actions and events; and finally through the concept of interpenetration. The application of these concepts will provide us with a method by which we can tie space to time, instead of time to space. We will produce an architecture that is from the temporal, rather than from the spatial. An architecture that is focused on what goes on in the spaces enclosed by it. This architecture will not look entirely new or different, but it will be designed from a position in the realm of time, rather than the realm of space.

## Chapter 2 – Henri Bergson and Duration

---

"If everything when it occupies an equal space is at rest, and if that which is in locomotion is always occupying such a space at any moment, the flying arrow is therefore motionless."<sup>4</sup>

The paradox of Zeno describes the flight of an arrow as a series of instants. It is not the arrow in flight that we see, but one that is constructed. The arrow hops from instant to instant, each instant moving it closer to the target. The problem with instants is that they are infinitely divisible meaning that an infinite amount of instants are required to represent the flight of an arrow. This is the heart of the paradox.

This paradox contains our search for the constructs under which we can re-evaluate duration and with it the notion of architectural programme. From this new understanding we can construct a building that is durational. The current notion of architectural programme is that of a flightless arrow, constructed through the instant; fixed.

The divisibility of the arrow in flight denies the motion of the arrow. Each instant is removed from time, breaking motion into parts, denying the whole. In an architecture programme this represents the instants of inhabitation. We can thus consider programme then as a moment, an event that shapes our interaction with space. Whether we sit at a desk to work, at a table to draw or at a counter to eat

---

4 Aristotle, "Book VI. Part 9". *Physics*. Whitefish: Kessinger Publishing, 2004. pp. 126.

it is these events that frame our understanding of space. They are what programme should be about, not descriptors such as; kitchen, den, library, bathroom, living room, bedroom, dining room, etc. These descriptors have nothing to do with events and have everything to do with instants.

A Durational architecture responds to this shifted understanding of programme. Events occur within the temporal. Programme can construct a method of looking at space that is temporal. It is the construction of space for events that creates architecture. Thus when we think of programme we must be thinking of events and not of space. Architecture is more about what we do in space than what the space itself is.

The nineteenth century French Philosopher Henri Bergson lays out a rigorous framework in which he explores the nature of what some have called “true experience” of the philosophy of time.<sup>5</sup> It is in his works that the nature of the human perception of time comes to be seen in an important light. The framework that Bergson has developed for viewing time is important to the manner in which we perceive the moment in a work of architecture. It is through this framework that we will discuss Bergson’s understanding of time and, through it, space. In

---

<sup>5</sup> See back cover of seventh printing of *Matter and Memory*. Quotes from Walter Benjamin, Gilles Deleuze and Maurice Merleau-Ponty.  
Bergson, Henri. *Matter and Memory*. New York: Zone Books, 1991.  
For a more broad overview of Henri Bergson’s theories and works see: Lawlor, Leonard, Moulard, Valentine, “Henri Bergson”, *The Stanford Encyclopedia of Philosophy*. n.d. Web. 10 June, 2007.  
<<http://plato.stanford.edu/archives/sum2004/entries/bergson/>>

this understanding of time he constructs three main concepts that are nested within one another; it is through a discourse on Duration that we get the notion of the Multiplicity and through it we get both Simultaneity and Extensity.

For Bergson, Duration is an experience of the quality<sup>6</sup> of time and by alluding to hearing a piece of music he describes this concept of Duration.

“A melody to which we listen with our eyes closed, heeding it alone, comes close to coinciding with this time which is the very fluidity of our inner life; but it still has too many qualities, too much definition, and we must first efface the difference amongst sounds, then do away with the distinctive features of sound itself, retaining of it only the continuation of what precedes into what follows and the uninterrupted transition, multiplicity without divisibility and succession without separation, in order to fully rediscover basic time.”<sup>7</sup>

Here Bergson suggests that our perception of time, to be true to what we experience, must be constructed in such a way that the points of definition blend into the totality of experience. From being individual notes in the piece of music they become experienced as the melody. The points must not be thought of in terms of successions that have a beginning and an end, but rather as part of the totality of our experience. This can be best thought of in our own lives through a day that passes without our even noticing the time. We are so deeply focused on our actions that we no longer notice the passage of clockwork time, and may ask for example, “... is it 6 o'clock already?” Such is the experience of duration.

The points of definition in the melody Bergson refers to are constructed by us

---

6 Bergson, Henri. *Time and Free Will*. Tran. F. L. Pogson. Mineola: Dover, 2001.

7 Bergson, Henri. *Duration and Simultaneity – Bergson and the Einsteinian Universe*. Tran. Lewis, M. and Durie, R. Manchester: Clinamen, 1999. pp. 30.

and must be removed for the totality of the melody to be experienced in Duration. We often think of these sections of time in terms of their separation from each other. They are composed through descriptions of events in which we have participated. This, for Bergson, is part of our experience of time but it is restrained. Most of the time we conceive of experiences as having a beginning and an end; as such we place limitations on them by our very perception or representation of these events. However, in the Bergsonian theory this does not occur. It is this limiting of our perception of time through distinctions that Bergson refers to as the spatialization of time.<sup>8</sup> For Bergson when we enframe time through distinctions, make time part of space, we remove the enframed from time. This occurs because by analyzing it, the analysis is part of our lived time and not the time we analyze.

The conception of space has been part of our knowledge of the physical world since the earliest philosophers. It is an awareness introduced early in the Greek physics as the ether, one of the first five elements, the others being earth, fire, water and air.<sup>9</sup> The ether was, and still is, a conception of a unifying medium which situates and envelopes the entire physical world. It is the void between objects, the space that defines the instant as separate. Bergson makes the distinction that the classical ether is our contemporary notion of space.<sup>10</sup> We now

---

8 Bergson, Henri. *Time and Free Will*. Tran. F. L. Pogson. Mineola: Dover, 2001. pp. 111.

9 Miutis, Joe. *Ether: The Nothing that Connects Everything*. Minneapolis: University of Minnesota Press, 2006.

10 Bergson, Henri. *Time and Free Will*. Tran. F. L. Pogson. Mineola: Dover, 2001. pp. 91.

refer to it as the spatial homogenous medium and it gives us a mechanism for the comparison and distinction of things. It is through this mechanism that we can count and suggest the difference between two distinct objects or those that are part of a set. It is also the space between the smallest of things. The only reason we can know of a proton or electron is through measuring the *ether* between them. By extension of this argument, there is a temporal homogenous medium as well as a spatial homogenous medium where we conceive of distinctions between events.

It is these two media, space existing within time, that are Bergson's main critique of spatialization. In order to have a temporal homogenous medium we must be able to make distinctions between temporal events of any kind. He suggests that time is not an overlapping medium of space, but that distinctions made in temporal 'fragments' remove those fragments from time and spatialize them. In order to represent this we first need to be able to conceive of distinctions, thus we conceive of fragments and each part as having both a beginning and an end. This separation must take place in a homogenous medium, a place where we can represent the separation. In this manner, each event must be distinct from others that are temporally near and given a way of being enframed. This act of enframing produces the separated fragments in our perception of time much like Zeno's arrow is separated from its motion as an instant. To be separate these events must have some type of emptiness, or ether as it were, between them.

Consider an example of this perception phenomenon to be the actions associated with getting on a train. How far do we go to enframe this act? Is waiting for the train a component? Is paying the fare? Is sitting on the seat? What happens between – and what do we mean by between? From waiting to sitting; we must board, then what is between boarding and sitting. These are examples of the extent to which we can stretch the distinctions between one act and the next.<sup>11</sup> It is time which is universal and space that allows for distinctions and it is these distinctions which make a perceived, but not a lived time. This perceived time is time that is enframed or produced through distinction, one that is removed; a fragment of universal time. Bearing in mind, if our perceptions of events in time lead to a removal of an event from a more universal time then how do we work with temporality in a design sense?

Bergson gives a way of working with the notion of the multiplicity.<sup>12</sup> The roots of this term in his writings come from mathematics. If we imagine a series of sets and in these sets there are common elements that could make another set exterior to the series, this is a multiplicity. It is this commonality that allows us to make distinctions in things. Bergson uses the sound of a bell as an apt example of this phenomenon.

“The sounds of the bell certainly reach me one after the other; but one of two alternatives may be true. Either I retain each of these successive sensations in order to combine it

---

11 Bergson, Henri. *Time and Free Will*. Tran. F. L. Pogson. Mineola: Dover, 2001. pp. 87.

12 Bergson, Henri. *Time and Free Will*. Tran. F. L. Pogson. Mineola: Dover, 2001. pp. 87.

with the others and form a group which reminds me of an air or rhythm which I know: in that case I do not count the sounds, I limit myself to gathering, so to speak, the qualitative impression produced by the whole series.”<sup>13</sup>

For Bergson, once again, the description of a melody is not experienced through the individual notes but in their commonality. This multiplicity then exists as two types; one quantitative and the other qualitative. The quantitative (or discrete) multiplicity is about the separation of events and the production of distinctions. The separations are instants; they are the positions in space of the arrow of Zeno. But this multiplicity also idealizes the commonalities of the moment and makes them identical. To be common, in the quantitative sense, there must be exactness, or sameness. This relies on simultaneity to operate temporally. To produce this sameness, the common moments removed from each other in duration or universal time must become moments or instants at the same perceived time. Therefore the sounds of the bell are compressed into one and repeated. It is this repetition of the singular that produces the successive sensations. This is the process of analysis that the notion of quantity gives us.

In the case of the qualitative (or continuous) multiplicity the sounds of the bell share in themselves a similarity which allows them to be recognized as the sounds of the bell, but allows them to also be combined to produce a melody. This implies that the melody is reconstituted from some pieces and by implying that there are indeed pieces we return to the notion of distinction. In this case,

---

<sup>13</sup> Bergson, Henri. *Time and Free Will*. Tran. F. L. Pogson. Mineola: Dover, 2001. pp. 86.

however, the quality distinctions are purposely vague; producing similarity, not exactness. Here these moments are not defined by an edge produced through distinctions, but blur together. It is in this blur that the qualitative (or continuous) multiplicity produces extensity. Extensity relies on the notion that we can shape our perception of the extent of the moment. It is from both of these conceptions of the multiplicity that we can begin to operate temporally. Blurring a moment's distinctions can be used as a manner of re-integrating events that have been spatialized. It is in this act of blurring that distinction or abstractions of things are lost. Here the edges of things overlap with others, one thing flows into the next. If we perceive events as having ends, then it is here that these ends are lost.

The concepts of simultaneity and extensity, like the two types of multiplicity, also have different connotations. The notion of simultaneity is exteriorized from space much like that of the quantitative multiplicity. The term simply suggests that two events are occurring at the same moment. But this cannot happen without a referring medium exterior to them. In order for us to experience simultaneity we must experience the perception of both acts at the same time. If we go back to the example of waiting for the train can we perceive the act of standing; looking down the tracks; breathing; or any other distinct act that we could be doing as occurring at the same time? Admittedly this would be next to impossible because we would have to be outside of experiencing the act to perceive this simultaneity.

Experience through extensity occurs where one event blurs into the next. It is this

shifting from one experience to the other and the production of overlapping of qualitative multiplicities. It allows us to have multiplicities within multiplicities. It is in this conception of moments in time that boundaries, beginnings and endings, can be broken down and allowed to flow into others. Waiting for the train can conceivably be paired with riding the train and then walking to and from the train to wherever one was going and so on. This perception can thus be extended, conceptually denying the enframing of events and allowing them to regain their position in time, rather than space, through their overlap. This process of gathering can suggest a way of taking charged events and making them part of a continuity in time.

### Chapter 3 – Actions and Events

---

“There is no architecture without action, no architecture without events, no architecture without program[me].<sup>14</sup>”

Bernard Tschumi’s quote delves into the heart of the temporality of architecture.

We can see that his statement is rather obvious. Without the ability to act we would not be able to conceive of architecture, let alone of building it. Without action there would be no *primitive hut*.<sup>15</sup> With no events, in the most general sense<sup>16</sup>, we have no reason for architecture. Events provide us with a reason to build for society. These have been the spaces of the market, the religious institution, the cultural tradition, the government and even the home. Thus both actions and events have programme, that being the descriptor for an event in space.

So what is action? Donald Davidson describes action as “... the ones we do not do by doing something else, mere movements of the body – these are all the actions there are.”<sup>17</sup> When we act we move our arms, our mouths, our feet, our bodies, etc. These movements are actions. Feinberg calls them primitive actions, others; “simple acts”.<sup>18</sup> Actions are things we do when we want to get something

---

14 Tschumi, Bernard. *Architecture and Disjunction*. Cambridge: The MIT Press, 1994. pp. 121.

15 Frontpiece of the second edition of Laugier’s *Essay on Architecture* (1755). Laugier, Marc-Antoine. *An Essay on Architecture*. Trans. Herrmann, Wolfgang and Anni Herrmann. Los Angeles: Hennessey & Ingalls, 1985.

16 We will expand on the distinction between actions and events shortly.

17 Davidson, Donald. *Essays on Actions and Events*. Oxford: Oxford University, 1980. pp. 59.

18 Feinberg, Joel. “Action and Responsibility.” *Philosophy in America*. Ed. Max Black. Ithaca: Cornell University Press, 1964.

done but in and of themselves they are meaningless. Raising one's arm could signify a multitude of things to each of us. We do not tend to give much thought to the series of actions associated with completing a movement, we comprehend only that we move our muscles because our brain commands them to act.<sup>19</sup> We do not consider what synapses fire electronic impulses that give the command to move. We just know when or how we want our arm to move and it does so.

Much like the instants of Zeno's paradox, actions are constructs. They allow us to understand the simple mechanics of what we do, but not the impetus behind those actions. Davidson describes waking up one morning as follows;

"This morning I was awakened by the sound of someone practicing the violin. I dozed a bit, then got up, washed, shaved, dressed, and went downstairs, turning off a light in the hall as I passed. I poured myself some coffee, stumbling on the edge of the dining room rug, and spilled my coffee fumbling for the *New York Times*."<sup>20</sup>

Much like Bergson's explanation of the ringing of the bell we can see that some of the things that Davidson describes are alluding to a much more complex sequence of actions. Even from the description of actions that he has defined, Davidson is explaining his morning routine as something more than a series of actions. Just 'washing' alone would be accompanied by a large number of actions. Broken down as such Davidson has described to us a routine that would consist of a virtually endless stream of actions. This is a limitation when considering the problem with actions as a formulation. We could analyze and re—

---

19 Davidson, Donald. *Essays on Actions and Events*. Oxford: Oxford University, 1980. pp. 49.

20 Davidson, Donald. *Essays on Actions and Events*. Oxford: Oxford University, 1980. pp. 43.

analyze, with each pass getting closer to the minutiae of each set or multi-set of actions, but in the end having an infinite array of actions and no way in which to contextualize them.

The problem lies in the action itself. Davidson states that there "... is confusion between a feature of the description of an event and a feature of the event itself."<sup>21</sup> The *feature of the description of an event* is understood as the collection of its actions. The *feature of the event* is the 'key action' that relates to an event. When considered in terms of events what is there to separate one event from another if they all contain actions? We could say there is one event for all of us, that being life and it ends when we die. Thus, in actions there have to be some actions that are pre-eminent to others. These would have to be actions that describe an event change, an action that concludes one event and starts another. This is what is meant by *key action*.

Davidson builds on the political and social philosophy of Joel Feinburg at this stage in his theory to introduce the concept of the accordion to suggest that key actions can be used to describe events. He suggests that the *accordion* can squeeze down an event to its most potent action (the *key action*) or it can be stretched out to its maximum to show all the facets of action relevant to the event. Feinburg says that "... in order to open a door, we must first do something

---

21 Ibid. pp. 58.

else which will cause that door to open; but to move one's finger one simply moves it."<sup>22</sup> This quote comes from his larger example of the actions associated with Peter startling Paul by opening a door.<sup>23</sup> It should be noted here that both Davidson and Feinburg use actions and events as they relate to causality and the analysis of causal relationships. Thus, we can see that opening the door requires more than just opening it, but he is describing an event, and not an action. This is the accordion at its most compressed point. When the accordion expands it creates the causal relationship between the door being opened by Peter and startling Paul. The question asked then is what startled Paul? Was it Peter himself or Peter opening the door? Here we have an extensive relationship between the door opening and the act of being startled.

It is from the accordion concept that we can further understand key actions. Key actions are those that distinguish one action from another. This is illustrated in Feinburg's example of Peter and Paul and the accordion concept. We have two actions in this extensity, one Peter opening the door and the other Paul being startled. All the other minutiae of actions exist, but are irrelevant to the enframing of the event. If Peter were to open the door without Paul present, we would have a completely different relationship and Paul, being easily startled, could be startled by something else. Thinking of this in terms of programme we can see the reason for needing the concept of the accordion. The creation of a

---

22 Feinberg, Joel. "Action and Responsibility." *Philosophy in America*. Ed. Max Black. Ithaca: Cornell University Press, 1964. pp. 147.

23 Ibid.

programmed space or a space for a particular event requires the key actions. It needs actions that distinguish one event from another. The programme of reading is much different from that of dining. When we start one and end another we have key actions.

The accordion concept also allows us to link events together into continuity as presented in Bergson's temporality. Just as the ringing of the bell can be seen as both discrete and continuous, so can the manner in which the accordion moves. The expanding and collapsing of the accordion is an enframing of actions and events, from collapsing down to separate a note for the melody to expanding to encapsulate the whole song. At this point it is helpful to remember that from a Bergsonian standpoint the enframing of actions can spatialize them. So one must look at the accordion without ends and recognize its usefulness as a device to understand events. Without ends, the accordion has the potential to take a series of actions and combine them into an event. This event can have a grand scale or a minute scale. We can imagine the amount of times that we step, or flex the muscles in our feet; or swing our arms while we walk; the way we sit to eat; or to read a good novel. All of these are actions pertaining to events such as what I did this afternoon on the grand scale or on the minute scale of getting up, walking to a book shelf, selecting a book to read and sitting down again.

These individual action sets are qualitatively similar enough to be part of a continuous multiplicity. By this we mean that walking can be done anywhere at

anytime. For the most part we walk in the same manner all the time. Thus walking can be a fragment in the accordions of an event or multiplicatively as a set of actions that are part of the multi-set of an event. This brings us back to Bergson's notion of temporality.

## Chapter 4 – Programme

---

Now that we have considered the various concepts that make up actions and events we can continue to look at how they relate to programme. Tschumi suggests that "... any reduction of architecture to its spaces at expense of its events is as simplistic as the reduction of architecture to its facades."<sup>24</sup> If we follow this statement we must be cautious regarding how we look at and apply it to programme. Programme should not be described spatially, but through the events that transpire in time. This may seem like a small distinction, but for a durational architecture this is the most important one.

Tschumi's is critical of programme represented as a functional analysis or adjacency analysis. Programme defined as a list of requirements is just that, architecture reduced to its spaces. So what is programme? Edith Cherry defines "architectural programming (as) the research and decision-making process that defines the problem to be solved by design."<sup>25</sup> William Mitchell defines it as "a document that enumerates the activities to be accommodated in a building and specifies how this should be done".<sup>26</sup> The making of this document involves six steps; research the project type, establish goals and objectives, gather relevant information, identify strategies, determine quantitative requirements, and

---

24 Tschumi, Bernard. *Architecture and Disjunction*. Cambridge: The MIT Press, 1994. pp. 122.

25 Cherry, Edith. *Programming for Design: from Theory to Practice*. Hoboken: John Wiley and Sons, 1998. pp. 3

26 Mitchell, William J. *The Logic of Architecture – Design, Computation, and Cognition*. Cambridge: The MIT Press, 1994. pp. 196.

summarize the programme.<sup>27</sup> Researching the project type involves considering such factors as the type of spaces, the space criteria (the area per person), the relationships of spaces and their functions, typical ratios of assignable space to gross floor area and the cost per unit of area. These are mostly quantitative requirements for the architect and involve everything from the amount of light required, to materiality, to the layout of spaces in a building. At this point the types of actions or functions of the space have been considered but only as they relate to space. This places space as a priority over actions and spatializes the events of the building. For a durational architecture this form of programming does not produce experience through extensity.

By determining and assigning metric volumes early in the design process, programmatic requirements remove the potential for events to inform space. This is because the extent of the spaces has already been pre-delineated. Events that are proposed through functional designations such as the dining room are then tied to this delineation.

Returning to Bergson we can say that spatialization of time through the construct of the homogenous medium and strict quantitative descriptions of programme are analogous. This leads us to the understanding that programme as strictly qualitative restricts our potential understanding of events. Part of the process of

---

27 Cherry, Edith. *Architectural Programming*. 09 February 2009  
<[http://www.wbdg.org/design/dd\\_archprogramming.php](http://www.wbdg.org/design/dd_archprogramming.php)>

“research(ing) of project type” involves the creation of a representation of adjacency analysis, or a bubble diagram.<sup>28</sup> This diagram illustrates the arrangement of spaces in the building in relation to their function. This diagram behaves much the same way as the instant with regards to our perception of programme. Here events are bound and separated. The bubbles are abstract representations of the rooms of a house, usually scaled in rough proportion to area but not here. The lines between the bubbles represent relationships between spaces with the degree of need for adjacency represented by thickness of line.

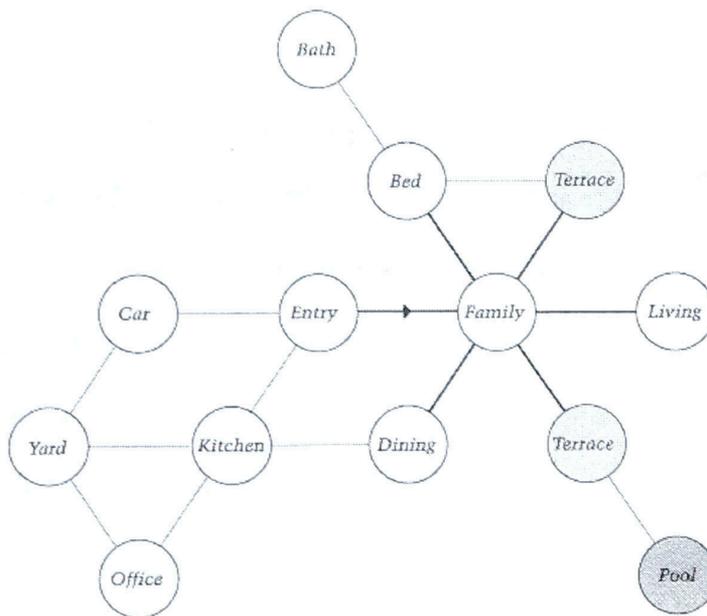


Figure 1 – Adjacency Diagram  
(from “The Logic of Architecture”, pp. 119)

---

28 See figure 1.

This form of architectural programmatic representation seems innocuous enough, but not when we are trying to think of architecture as durational. The diagram simplifies relationships of spaces but not that of events. This simplification of spaces removes events. The kitchen facilitates hundreds of actions that are unspecified by the term. while the diagram suggests a “space for storing, preparing, and sometimes serving of food”.<sup>29</sup> Actions missing from this reduction could be study, home office work, conversation, or recreation. So we can see that this reduction of many potential actions to one space removes us from the temporal and the qualitative and places us in the spatial and quantitative.

In order to express the concept of a durational architecture we must first be open to the possibilities presented in the concept of continuous multiplicities. They transform programme from merely a list of requirements to centres of action without bounds. The ‘continuous adjacency diagram’<sup>30</sup> presents potentials of overlap and interconnectedness that has more in common with lived space than with contrived space. It is here that we begin to see the potential of a durational programme as opposed to one that is fixed and bounded.

---

29 Herbert, Daniel M. *Architectural Study Drawings*. New York: Van Nostrand Reinhold, 1993. pp. 50.

30 See figure 2.



Figure 2 – Continuous Adjacency Diagram  
(overlay of the scan from "The Logic of Architecture, pp. 119)

This diagram, although limited in scope since some level of abstraction is required, removes the spatial relationships from adjacency and reveals the temporal ones. The diagram represents the collection of similar events that occur in the home. The event of cooking has the potential to spread over the home; one can cook in many locales, not just the kitchen. The event of reading could be done by the hearth, or in a comfortable chair, or in bed. The event of conversation could be enjoyed while dining or sitting beside that same fire. Sleeping could occur in the bed, but also on the couch in front of the television. These events are part of dwelling in the home.

If we consider again Bergson's bell example wherein it was illustrated that the single note in a piece of music can be perceived as part of the melody through our perception of it, it follows that the same is true for programme. By moving through the note's extensive qualities, and not the intensive quantities, we allow for programme to be temporalized. The continuous adjacency diagram determines our programme, but it should not contain it, as we saw in the adjacency diagram. By using continuous adjacency diagram, we can delineate events in any number of ways; we can close, open, contain or frame. We can lead the experience to other events or we can focus the experience of events to just itself. The centre points of an event could range from a dining room table, to a television, to a fireplace, to a desk, to a chair, or to a bathtub. These are objects but they are also the signifiers of events. The dining room table is an example of this condition in that we create a place specifically for eating; however this place is also in flux. It is never just a dining room, because the table can shift its programmatic association<sup>31</sup>. All in the same evening it might be used for a child's art project, a family dinner or card game, to the finishing of work brought home from the office. In this way the dining room is not really a room in the common sense, durationally, but is part of the larger continuous multiplicity. As mentioned previously the dining room table could be used for multiple events. The central portion of this multiplicity is defined by the edge of the table itself, including the chairs around it. Multiplicities are centres of activity in architecture

---

31 May be better referred to as event signification or the connection between keys actions of inhabitation.

rather than spaces. In a durational architecture the space is shaped around the event, not the other way around.

Let us consider this concept further using the example of a cocktail party. The space of conversation often begins in an instantaneous space, but moves as the night progresses and, more often than not, shifts from the living room to the kitchen. It is this shift in the space of conversation, from what we would generally construct architecturally as the living room, and the actual space of conversation, the unbound space that occurs between people talking. It is this shifting space of extensity that is a true experience and an example of lived space rather than the perceived space.

From Bergson we are familiar with the two types of multiplicity. The first, a discrete multiplicity is when a previously framed program shifts internally and the second; a continuous multiplicity is when a previously framed event shifts frames. So, the dining room table being used for eating or a card game is discrete while the cocktail party moving from space to space is continuous. Durationally programmed space is then instantaneous and extensive; existing as both because we construct space and live in it in different ways. Lived spaces are always more dynamic than those perceived beforehand.

## Chapter 5 – Multiplicities in the Works of De Chirico and Boccioni

---

To more firmly establish the nature of continuous multiplicities and their tie to architecture we will now explore their representation. To do so we will look at two sources that represent a Bergsonian continuous multiplicity; one, the surrealist painting “Gare Montparnasse (Melancholy of Departure)” by Giorgio de Chirico and second, the futurist sculpture “Development of a Bottle in Space” by Umberto Boccioni. These two examples present distinct methods of achieving a Bergsonian multiplicitous representation.

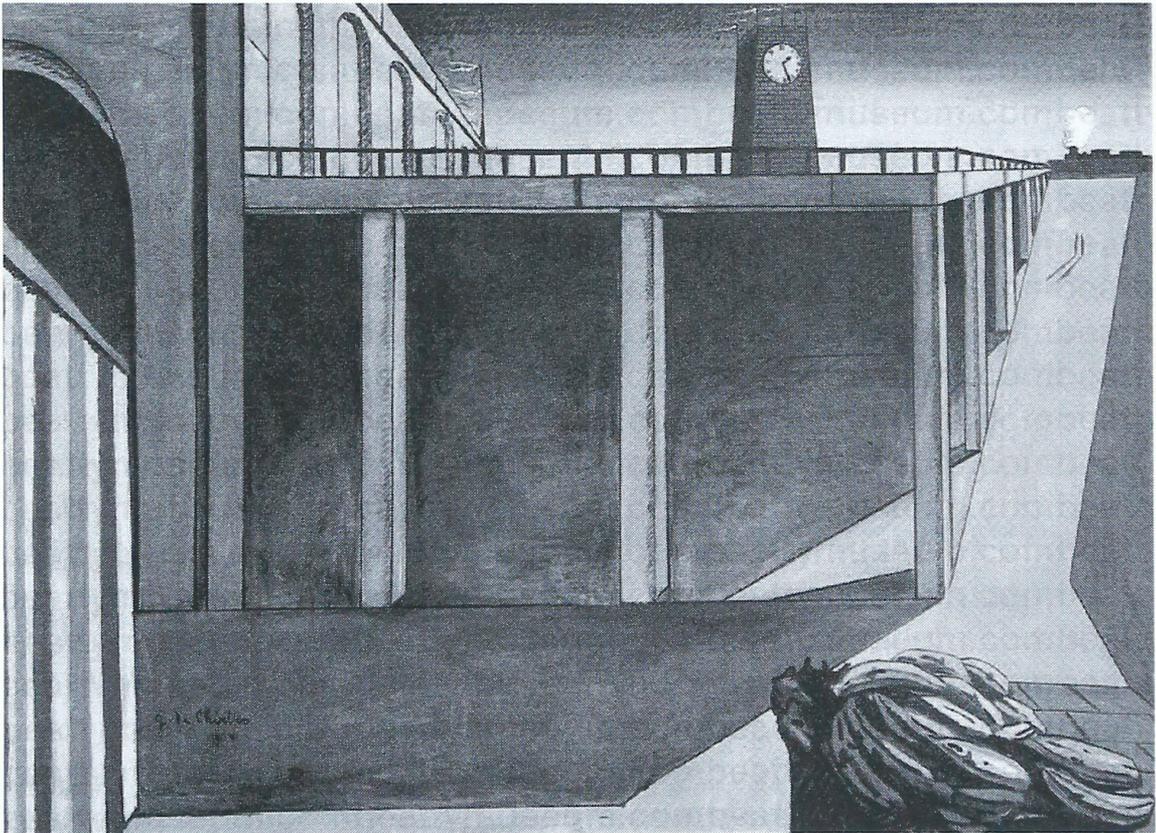


Figure 3 – Giorgio de Chirico's "Gare Montparnasse (The Melancholy of Departure)"  
1914. Oil on Canvas, 55 1/8" x 72 5/8" (140 x 184.5 cm)

From de Chirico, we see a multiplicity that shifts the viewer's relation to space through a psychological displacement. With various elements in the painting one can see multiple viewpoints represented in a single *mise en scene*<sup>32</sup>. It is achieved through the subtle construction of the perspectival space, and through the use of light. *Gare Montparnasse* (Figure 3) depicts an awkward perspectival space from a station point based in illusionary perspective – constructed to be extremely foreshortened in some spaces and expansive in others. De Chirico shows us what William Rubin calls "... a network of conflicting spatial tensions that undermine, psychologically speaking, any initial impression of quietude and stability."<sup>33</sup> This instability comes from an assumption made by the viewer. Rubin points out that "... the viewer understands fifteen-century perspective as an illusory continuation of his own space; his place in relation to the *donnee*<sup>34</sup> of the picture ..."<sup>35</sup> It is this assumption in the notion that a perspective is a mimetic representation similar to that of a photograph our impression of stability is produced.

To demonstrate the source of instability in the painting one must look to its construction. Figure 4 shows Rubin's perspectival analysis of the various

---

32 ("Mise en Scene") defined as 1. a. The arrangement of performers and properties on a stage for a theatrical production or before the camera in a film, b. A stage setting, 2. Physical environment; surroundings. "The American Heritage Dictionary of the English Language". Boston: Houghton Mifflin Company, 2000.

33 Rubin, William. "De Chirico and Modernism." *De Chirico*. Ed. William Rubin. New York: The Museum of Modern Art, 1982. pp 59.

34 *Donnee* defined as "1. A subject or theme in a narrative. 2. A basic fact or assumption" From the Oxford English dictionary

35 Rubin, William. "De Chirico and Modernism." *De Chirico*. Ed. William Rubin. New York: The Museum of Modern Art, 1982. pp 58.

vanishing points of the painting. These multiple vanishing points represent a series of implied positions for the viewer to perceive the scene. In the language of perspective these are known as *stand points*<sup>36</sup>. It is through these stand points that the viewer moves through space around the *mise en scene*. These perspectival lines produce, apart from the various implied stand points, various horizons. The horizons direct our view either above or below the scene. This relationship is constructed from the difference between the painted horizon (the line between ground and sky) and the constructed horizon (a crossing line between the various vanishing points parallel with the painted horizon). This insight demonstrates that the viewer is not looking on the fixed space of the scene, but on the temporality of an implied duration. It functions only as we seek to create an implied illusory continuation, or to provide stability to the unstable image through the construction of a temporal image in our mind. It is this temporal image of the mind that is a Bergsonian continuous multiplicity.

---

36 Stand Points defined as "... a physical or mental position from which things are viewed". From the Collins English Dictionary – Complete and Unabridged

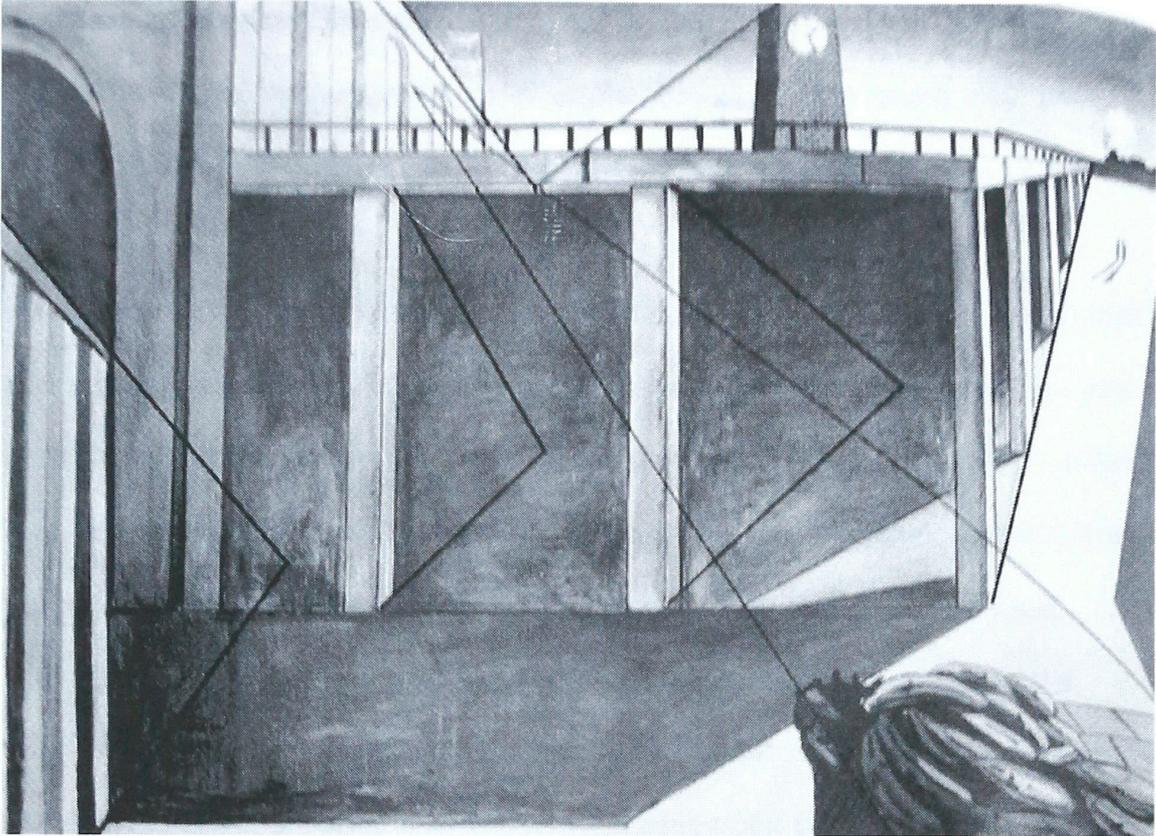


Figure 4 – Overlay of Giorgio de Chirico's "Gare Montparnasse (The Melancholy of Departure)" by William Rubin<sup>37</sup>

Rubin describes the quality of space in de Chirico's work by making reference to the quality of light. We can reaffirm the durationality of the image through this quality. He notes "... all seems made visible with a flat, frontal light, independent of any single source ..."<sup>38</sup> From viewing de Chirico's painting we can see that his statement expresses the quality of experience in "Gare Montparnasse". We would suggest, however, that this is tied to a temporal experience of the viewer in the space of the painting; this relationship is what we have previously referred to

37 Rubin, William. "De Chirico and Modernism". *De Chirico*. Ed. William Rubin. New York: The Museum of Modern Art, 1982. pp 58.

38 Rubin, William. "De Chirico and Modernism." *De Chirico*. Ed. William Rubin. New York: The Museum of Modern Art, 1982. pp 65.

as the *mise en scene*. This definition is apt in describing the continuous multiplicity of the painting since it implies a connection to the whole play; an unbound portion of duration, or the lived experience of time.

In de Chirico's painting the temporal experience as described above is reinforced by an empirical understanding of light. When we are outside on a bright day and move inside, our eyes recognize the change in light conditions from bright to dark and thus adjust. What we have just experienced is a multiplicitous moment. The transition occurs, our eyes adjust to the darker light of indoors, they do not recognize the fullness of the bright day, and we can still see the detail of the space. This is what is suggested in the temporal space of de Chirico's painting. The high contrast shadows implies the persistence of a bright summer's day, yet in the shadow we can make out details as if we have already perceived them. Another example is in the rendering of the columns facing the viewer. These columns are parallel to the main façade of the station on the left and would be completely dark if their lighting was similar to that of shadow cast on the ground. They should appear deeply in shadow, yet they are rendered brightly. It is this representation that tells us of the duality of states of time and is reinforced by the perspectival aberrations of the painting.

The assumption produced in de Chirico's painting is central to the concept of the representation of a continuous multiplicity. From the outset the idea of temporality has been discussed and it has been noted that a continuous

multiplicity is based in the quality of a temporal occurrence. The assumption is that this can be fixed into an object. What de Chirico shows us through subtle manipulations is that the representation of temporality can only be done in a Bergsonian—sense, psychologically; that is it must be felt, not seen.

From the work of de Chirico we move to the sculpture of Futurist artist Umberto Boccioni. This shift in medium gives us connection between architectural representation and the tectonic object. Umberto Boccioni was heavily influenced by the writings of Henri Bergson. This influence can be seen in the various manifestos produced by Boccioni between 1910 and 1913.<sup>39</sup> This influence extended directly to his paintings and sculptures and in particular his sculpture entitled “Development of a Bottle in Space”.<sup>40</sup> It is in this piece by Boccioni that we are made familiar with the concept of interpenetration. This, like the continuous multiplicity of de Chirico, leads us to perceive the work through a temporal image in our mind rather than an illusory construct placed before our eyes.

Interpenetration as expressed by Boccioni is a response to the notion of the multiplicity by Bergson. He begins to explain his approach to Futurist Sculpture in 1912–1913 through the “Technical Manifesto of Futurists Sculpture” and in “The Plastic Foundations of Futurists Sculpture and Painting”. Here he states that “...

---

39 Apollonio, Umbro. *Futurist Manifestos*. Trans. Brain, R., R. W. Flint, J. C. Higgitt, and Caroline Tisdall. Boston: MFA Publications, 2001. pp. 51 and pp. 88.

40 See figure 4

sculpture must, therefore, make objects live by showing their extensions in space as sensitive, systematic and plastic; no one still believes an object finishes off where another one begins ...”<sup>41</sup> This suggests that objects are indivisible, however it must be noted that he still uses the term ‘objects’. By using this term, he concedes that there is an extensive relationship between one object and the next and that this relationship is constructed through the interpenetration of the objects; one object does not finishing where the one begins.

In “Development of a Bottle in Space” the clear distinctions that one would traditionally think of as indicating the presence of an object are missing. Boccioni uses interpenetration of one form through the next to alter our perception of the main object in the piece, the bottle. We no longer see the whole bottle but a series of curves that suggest the form of a bottle.

In figure 5 are presented two images of the sculpture; in the right frame is the base of the bottle sitting on a form that may suggest a table (point 7), but here the bottle’s base slides through the plate (point 9). The plate’s edge is marked, but slips inside a gap that is made in the bottle (point 11). On the other side of the work, in the left frame, the plate is broken again (point 6). The break suggests that the plate could be something else; an ice bucket for chilling wine, for instance (point 10). Also of note is the break in the neck of the bottle where the

---

41 Apollonio, Umbro. *Futurist Manifestos*. Trans. Brain, R., R. W. Flint, J. C. Higgitt, and Caroline Tisdall. Boston: MFA Publications, 2001. pp. 52.

form of a hand is hinted at through the surface of the bottle receding, much like how one would grip a bottle of wine to pour it (points 2–5).

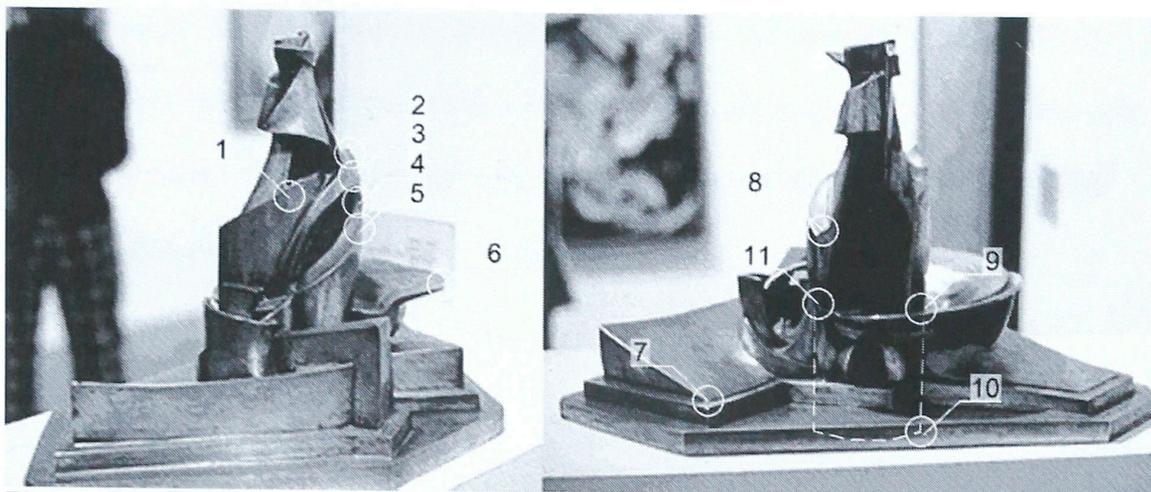


Figure 5 – Overlay of Boccioni's Development of a Bottle in Space by Author

Looking through “Development of a Bottle in Space” as a lens it is clear that the 'how' of the bottle is more important than the bottle itself. The 'how' represents the way in which the bottle relates to others (things and persons) in time.

Boccioni's notion that objects live by their extensions in space is important for the concept of duration. This can be best demonstrated by an analysis of the sculpture. We can imagine a couple sharing a bottle of wine with appetizers; a group at a party on a hot summer's evening; or even someone gripping the bottle in a violent act. From this simple plastic gesture introduced by Boccioni, our imagination about the object is extended, but slightly enframed. By seeing a space for the hand on the wine bottle or the placement of the wine bottle in a wine bucket we see the potential extensive relations of the bottle. From the idea of interpenetration we arrive at a conception of temporality that is similar to the *mise en scene* of de Chirico as in the sculpture of Boccioni. These two

interpretations of temporality are based in the continuous multiplicity, a representation that is alluded to physically but created in the mind. From this we can see how the creation of temporal architectural representation differs from that of other forms of representation. It is drawn from images or models through the imagination. It communicates the design intent not directly but through the interpretation of the viewer.

## Chapter 6 – House of the Event

---

From the onset of this dissertation we have been identifying the tools and understanding that would allow us to use duration to inform the way we make and represent a durational architecture. To make such architecture, the architect must think of time in a Bergsonian sense. What will be shown is that architecture can indeed be durational through qualities that are both extensive and interpenetrated.

For architecture to be durational it must look to the event as the guiding intention for its creation. As has been discussed, this is usually done using programme as a fixed spatial guide to how the building is designed. We have argued that programme as a spatial method leads us away from a temporal solution.

Davidson has shown us that *key actions* define events and it has been elaborated on that these *key actions* are at the heart of events, rather than at the beginning or end of them. Thus the events of architecture are the daily interactions of our clients with space. These daily interactions can be best summed up by an explanation of the daily routine, or what someone does on a daily basis. Below we have inserted the daily routines of two fictional clients.

Client One:

“Each day, I sit in bed and look out the window, waking to the sun. I get out of bed and make a hot cup of coffee. After I have finished my coffee I get up and get dressed spending quite a bit of time on my appearance. At this point I have a light breakfast and head off to work. After coming home from work I exercise, three days a week, and then shower. On the other days I do chores, and then shower. After this, I check and answer emails. I read for a little while enjoying a nice glass of wine. I eat dinner only on some evenings but enjoy the cooking of it. After this I may, depending on the weather, sit outside, or read a book, or watch a movie. Then it is usually time for bed.”

“Weekends start in a similar manner with the exception of the time I get out of bed. Usually I sleep in quite late. Around midday I have breakfast, accompanied by coffee and reading the newspaper. In the afternoon I head out to shop or do other chores or just enjoy a good walk. Before the sun has set I return home and make dinner. This is, depending on the day, a more formal affair sometimes with guests, sometimes with just family. After dinner I tidy up. Then, if company has gone I read for a couple hours before bed.”

## Client Two:

## Weekday:

7 am	Wake and make coffee
7:45 am	Breakfast
8 – 9:30 am	Work in office; best working time
9:30 – 10:30 am	Break for coffee and cigarette, may read the news
10:30 am – 12	Return to office
12 noon	Walk, around the block, sometimes two or three times depending on the day, usually alone or with dog
12:45 pm	Lunch, after lunch read news and answer emails
3 pm	Read
4 pm	Walk, usually to the park, sometimes farther and sometimes with company
4:30 – 5:30 pm	Work in office, mostly answering phone calls left for this time
6 pm	Prepare dinner
7.30 pm	Dinner with family
8:30 pm	Watch television
10 pm	Read alone in bed

## Weekend:

9 am	Wake and make coffee
9:30 am – 12	Read news, do crossword
12 noon	Walk, around the block, sometimes two or three depending on the day
12:45 pm	Lunch
1 pm	Read
4 – 6 pm	In winter; read, all other seasons garden or do chores
6 pm	Prepare dinner, if guest come over then cocktails as well
7.30 pm	Dinner with family, sometimes guests.
8:30 pm	Watch television, or after dinner chat with friends
10 pm.	Read alone in bed

An idea of the space that this couple requires is formed through paying particular attention to their daily routines. When our client says, "...I eat dinner only on some evenings but enjoy the cooking of it", this does not describe space, but event. They are not talking about a specific kitchen, but the event of making a meal. Spatially, the kitchen should be a consequence of the event not the space.

Thus, in figure 6 we have shown the figures of the two clients going through their daily routines. The figures are represented as *key actions* and occupy a sectional space that is not in the same plane. This is a section, which is not a plane-cleaving space, but one that is defined by time. It is a storyboard of our client's interactions with the architecture. This storyboard reflects, but does not depict, the *key actions* that we have taken from the daily routines. Illustrated are the clients getting dressed, drinking coffee, talking on the phone, cooking, reading the newspaper and lying down to sleep, etc. Using the details of the *key actions* we have created an architectural storyboard over the depicted figures. This second overlaid storyboard represents a series of *key architectures* that correspond directly to the *key actions* as depicted in figure 7. For instance, where the clients get dressed we see a cabinet in front of them to hold their clothes and a wall with a mirror to check their appearance. For each depicted figure there is a *key architecture* that responds to the particular event.

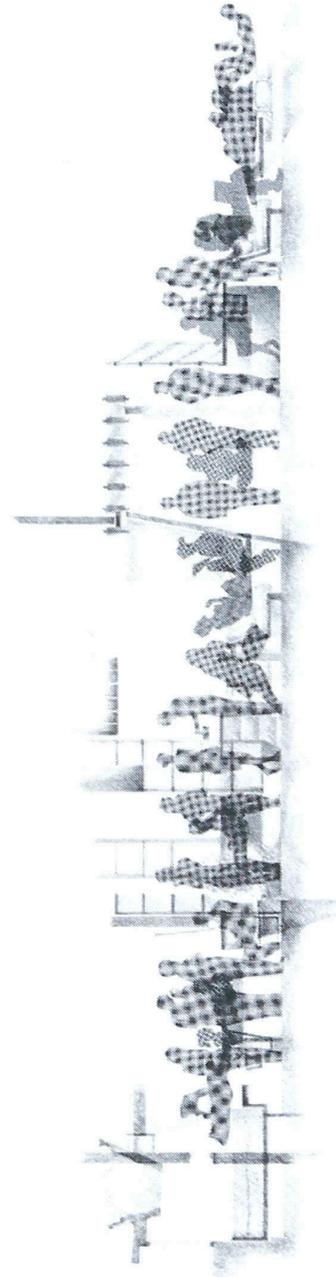


Figure 6 – Drawing – Events of Domesticity (left)  
Figure 7 – Drawing – *Key architectures* (right)  
Size: 11" x 42" – graphite drawing

The choice of the section as a role of representation was made in large part to reflect both duration and interpenetration. As has been shown in chapter 2, Henri Bergson and Duration, that duration is constructed through extensity, which is qualitative multiplicity. Both extensity and the extensive quality of the sections have an analogous relationship. This relationship is founded in the manner in which they deal with the homogenous medium that surrounds them. In the case of extensity this occurs because the point of focus is central and they blur outwards from there. There is no boundary to them. The same can be said for the architectural section, whether it be a horizontal or a vertical cut. The section slices through conceptual objects and represents a cut of them in space. This slice is without a boundary and as long as there is something to show on that datum, it is sliced.

The datum of the section, or the plane of the section, becomes important for its relation to both the temporal and the spatial. For this house design it has been conceived that the sections move in time, more in the style of a storyboard than a traditional architectural section. This movement is of vital importance to further development of the house. By utilizing this section to further inform the design of the house, Bergson's concept of continuous multiplicity can be seen highlighted through the sections' shifting in space. This shifting is a spatial property, not a temporal one. The shifting/story board quality allows us to spatially represent the *key architectures* of the section in any space. This shift gives us the ability to collapse, transpose, and extend the section in space while maintaining its

relation temporally. From this shifting potential a connection is constructed both spatially and temporally since any key architecture can become part of another key architecture by means of connecting similar spatial responses to *key events*. Consider a simple countertop. The events suggested by this piece of millwork are multiple, but the form needed for each event is similar, thus it becomes part of a multiplicity of potential events and situates itself within the concept of the multiplicity. These interpenetrated spaces share some commonalities between the combined event spaces and it is these similarities and the related overlaps that define the extensive nature of the interconnected space. This relationship is based on the action performed through the drawing of the series of *key architectures* where we can see that the event, as depicted, is specific and this specificity relates directly to the needs of each particular event. The event thus becomes the focus of the space. In contrast, if we looked at this programmatically we would have the kitchen as space, but as defined through a series of finite events that relate to key actions; reading, dining or preparing a meal. From Chapter 3, Actions and Events, we showed that *key actions* can be used to determine the focus of the event space. By returning to the accordion concept of Feinburg we show that these *key actions* are stretched to inform the re-imagined programme.

This stretch condition is represented as the interpenetration from a *key architecture* to the next *key architecture*. These interpenetrations allude to the conditions observed both in De Chirico and Boccioni's works. One, the shifting of

the view point, as in De Chirico, is connected to the fragmenting of the section and its conceptual construction as a storyboard destabilizes the view and requires one to imagine the space depicted, not as connected to a mimetic space, but one that is tied to the temporality of the figure's actions. The connection to Boccioni occurs at the level of the overlap; here pieces of *key architectures* intersect with other *key architectures* providing us with fragmented sections. These fragmented sections, like Boccioni's Bottle, portray the connective clues to construct the narrative that is occurring through the figures beyond. By reinterpreting Boccioni's statement that "... sculpture must, therefore, make objects live by showing their extensions in space as sensitive, systematic and plastic; no one still believes an object finishes of where another one begins",<sup>42</sup> we can say that *architecture* must make the space live by showing extensions in space as sensitive, systematic and plastic; one space can never finish where another begins. Boccioni's statement can thus be reinterpreted to demonstrate the manner in which the section can extend through space.

Figure 7 illustrates the interpenetration that relates to our reconstruction of Mitchell's diagram, the *Continuous Adjacency Diagram* (Figure 2). From the shifted view positions and indistinct, yet connective, edge conditions we are provided with a connection to our event centre points. These are represented through the *key architectures*. Our *key architectures* are connected to each other

---

42 Apollonio, Umbro. *Futurist Manifestos*. Tran. Brain, R., R. W. Flint, J. C. Higgitt, and Caroline Tisdall. Boston: MFA Publications, 2001. pp. 52.

to produce zones of similar actions. These zones are architectural responses that can bleed into one another, much like that which was depicted in the continuous adjacency diagram. By focusing on the events the design presented in the *key architectures* does not represent the whole home design. These vignettes describe the event not the space. By blurring the edges, in terms of detail, we achieve a spatial representation that can be used to depict the totality of the home. The vignettes, in their function as event depictions, can be combined to incorporate more than one event in a given space.

Shown in the next series of figures is a model that was constructed to demonstrate the potential for tectonic interpenetration in this moving section. Figures 8 through 15 show fragments and their sources and it is in this way that images are used to suggest multiple events, much like that of Boccioni's bottle.

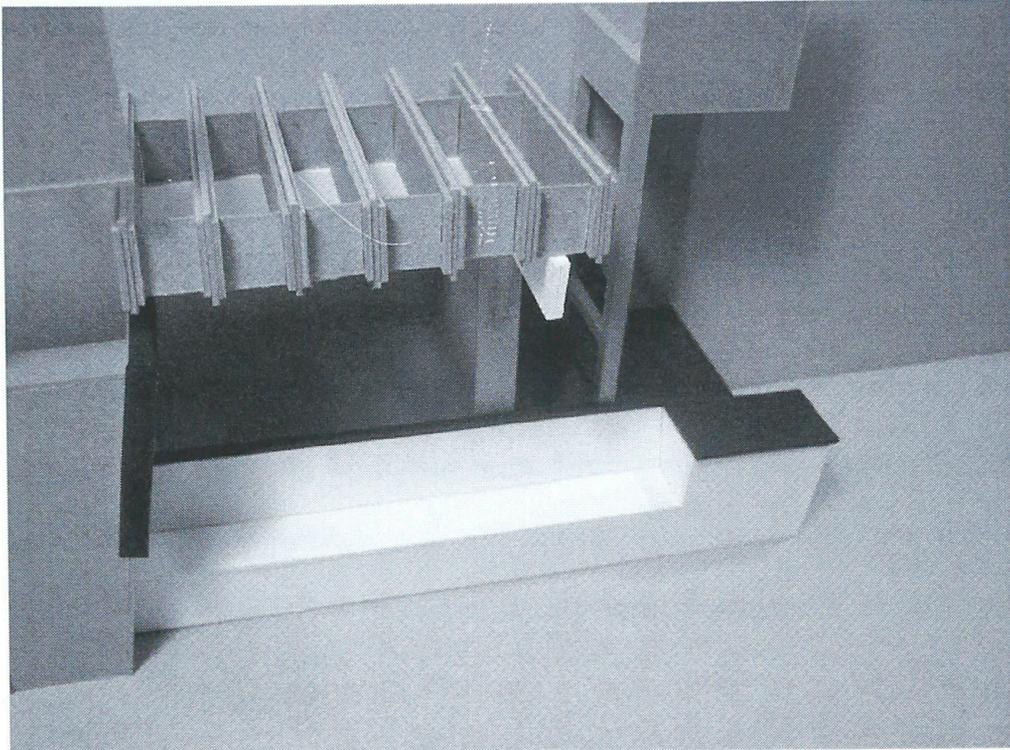


Figure 8 – Photo – Part of Model of *Key architectures*

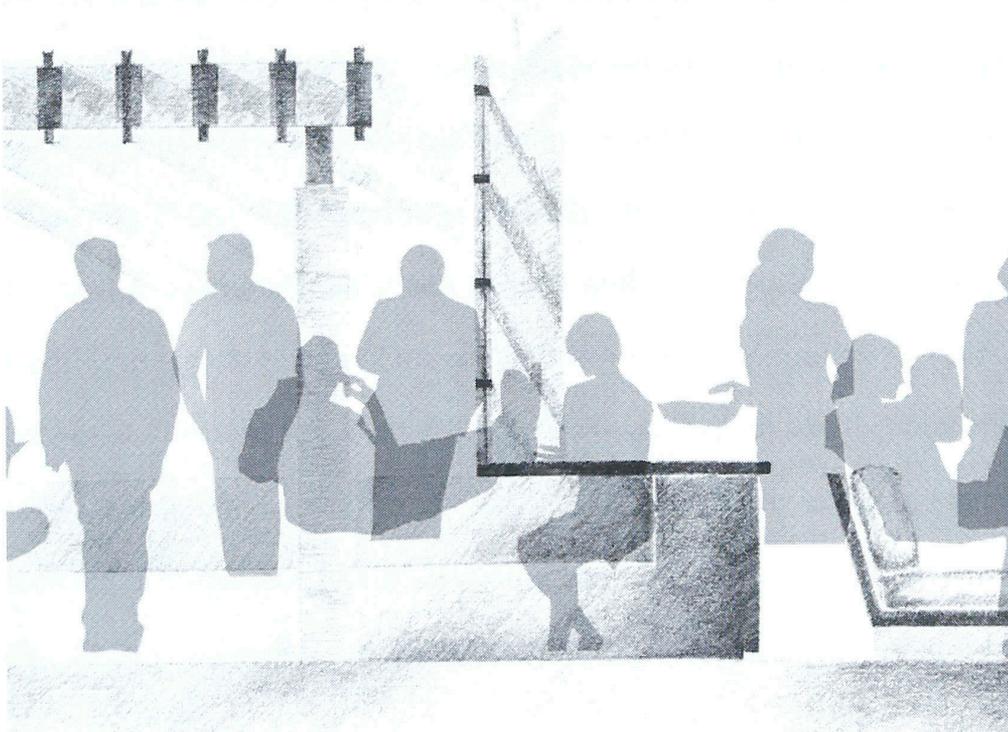


Figure 9 – Drawing – Part of *Key architectures*

Figures 8 and 9 demonstrate the shift from a strictly sectional understanding of interpenetration to one that is more tectonic. In figure 8 we see where the counter is displaced to create the continuation of the banquette seat. In figure 9 the person holding the frying pan and the one reading the book both share this space; as defined by the edge of the window and the edge of the counter. A lightly rendered shadow suggests the placement of a seat for the person reading and perhaps enjoying a glass of wine. These temporal connections to the client's daily routines suggest that both *key actions* occur around the same time of day. Figure 8 suggests a direct translation of this connection into space.

The model presents some spatial irregularities that are more common to a storyboard articulation of space, rather than an accurate depiction of space. This spatial irregularity results due to the displacement of the counter by the banquette which is the result of the event of sitting as influencing the event of preparing dinner. This banquette also slips past the window representing a connection between interior and exterior and is reinforced by the banquette extending past the trellis of the garden. In this area of figure 9 we can see a man sitting with his feet up talking on the phone and behind him a group of figures in conversation. These figures are intended to correspond to the seated woman to bridge the connection between the banquette and the garden. Here, both through the section and model, we pair the temporal extensity with a tectonic one.

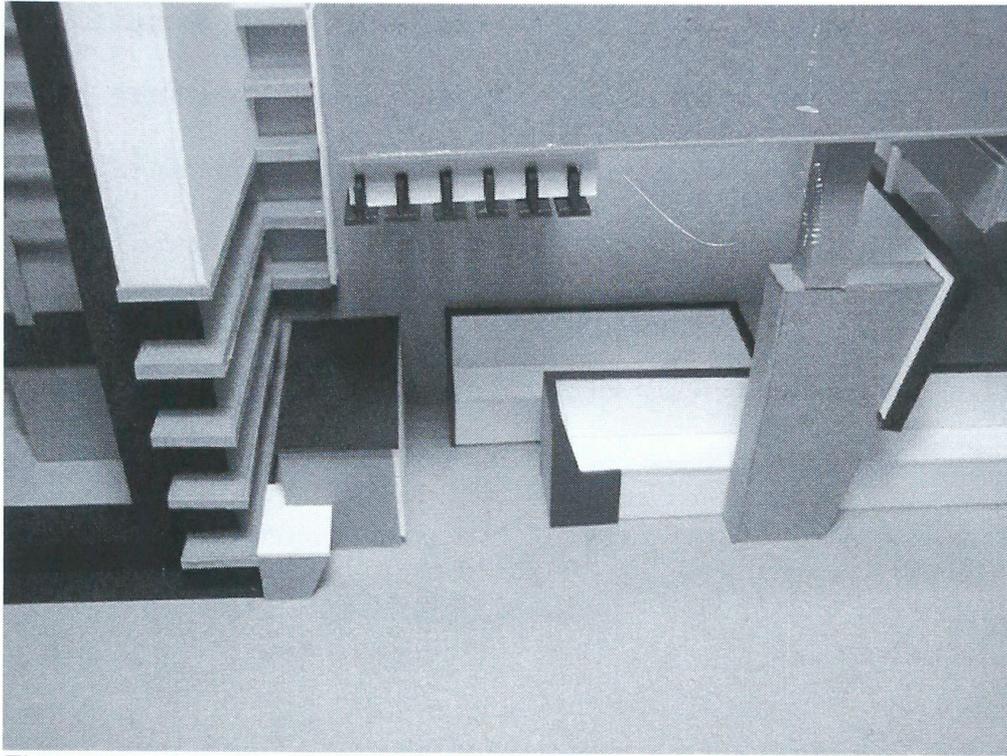


Figure 10 – Photo – Part of Model of *Key architectures*

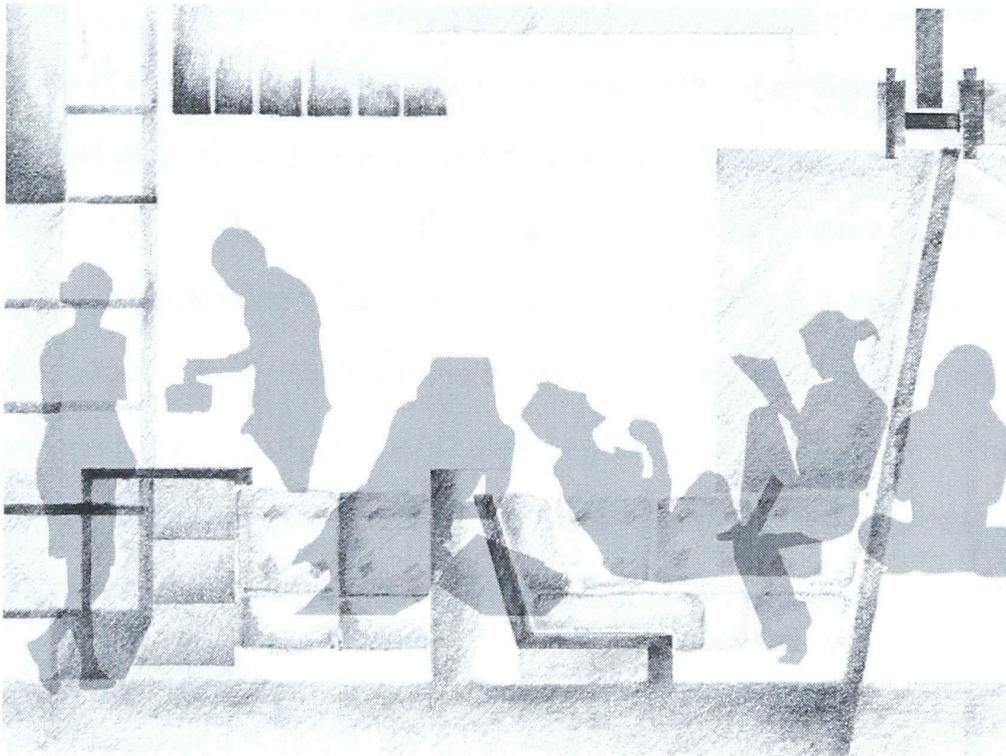


Figure 11 – Drawing – Part of *Key architectures*

In both figures 10 and 11 we enter a space that is even more spatially irregular. This is suggested by the three figures reading in the centre of figure 11. In the model the three figures are represented as spatially separated. This separation results from the individual act of reading with each person engaging in their own distinctive reading activity. The figure on the right, leaning against the tilted wall, is reading a newspaper, the central figure is reading on his laptop and the figure just left of him is reading a book on her lap. Here displacement is used to highlight each of these figures and interpenetration functions through the similar formal articulation of each distinct space.

The concept of interpenetration is reinforced with the banquette. In this space it slides past the nook where the woman on the right is reading her newspaper in order to connect with the banquette that was depicted in figure 8. This extension of the banquette suggests a connection in the event of reading from client one to client two. Client two reads earlier in the afternoon while client one reads when they arrive home from work. This space of the banquette in the model is elongated to exemplify this connection. It is a shared event, each person receiving their own spatial articulation, yet this spatial articulation in the conceptual model does not necessarily mean that we will have an extremely long banquette in the house. The resulting events could be collapsed into the same piece of millwork.

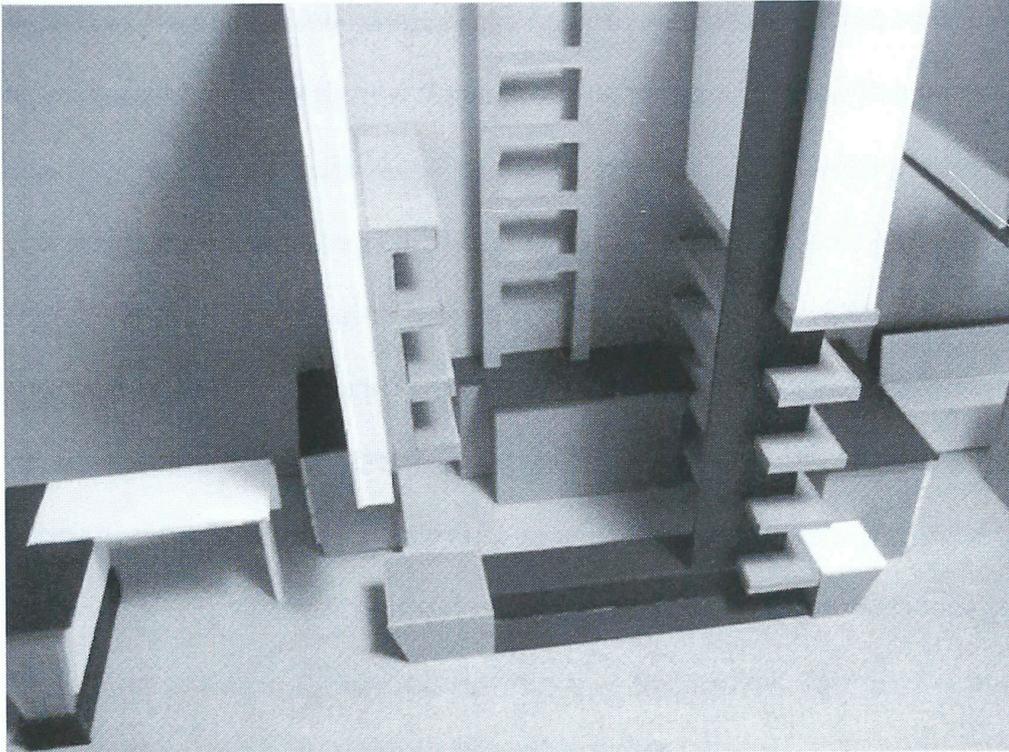


Figure 12 – Photo – Part of Model of *Key architectures*

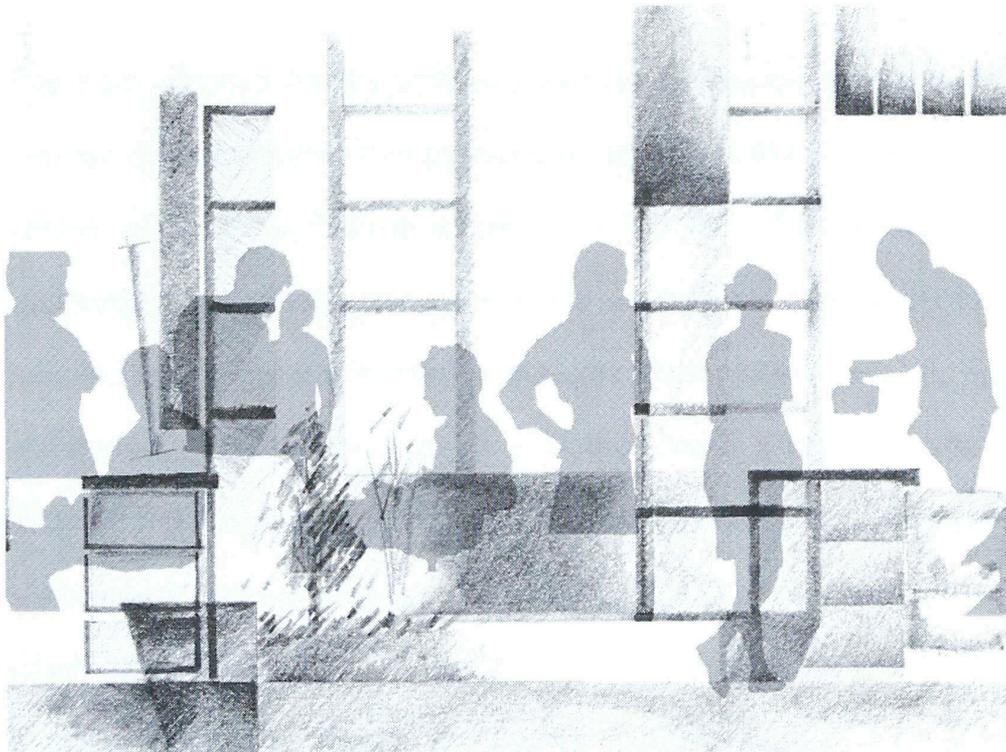


Figure 13 – Drawing – Part of *Key architectures*

In figures 12 and 13 we have an overlap, rather than a displacement. The two figures to the furthest right in figure 13, one making tea, and the other approaching from a bookcase toward the counter, represent a spatial relationship that is displaced between the viewer and the surface of the image. The *key architecture* of one figure is in front of the other. This collapsing view constructs the concept of interpenetration further through the idea that these spaces are separated, but connected through events and, thus, through time. Here we have a *key architecture* that is extremely overlapped and to make sense of the fragments we must realize that temporality is extensive and what we represent here is not necessarily spatial. However, as in previous figures, the spatial irregularities lead to temporal connective-ness.

The model depicts the *key architectures* from the same plane reinforcing the overlapping connection. This temporal arrangement ties the figures together and yet leaves the architecture in a state of overlap. Here the connection between the counter and the bookcase is not resolved spatially but is suggestive of a potential relationship, temporally. Further to the left in figure 13 we have two figures, one is standing and talking on a phone while the other is sitting and looking to the left. These two figures are situated in a space that is bound on three sides by shelving and that also overlap the garden space. This produces an improbability which causes us to question whether these two figures are working from outside or inside the house. This *key architecture* is subtly connected to the inside by the solid shaded band that starts around the waist of the standing figure and

continues downward to their mid calf. This feature continues from the surface of the counter top and fades behind the garden area. This would suggest a spatial relationship between the office and the kitchen type *key architectures*. Returning to our client's daily routines, these spaces are spatially close to one another, since client two tends to frequent both spaces during the day. Added to this relationship is the small garden that the client uses to take breaks and we can see the connection between the daily routines; the three-way overlap of space and the two-way overlap of events represented by the figures. This interpenetration occurs programmatically through the layering of these fragments together into an interpenetrated space and, temporally, through the connection between the spaces and their tectonic formation.

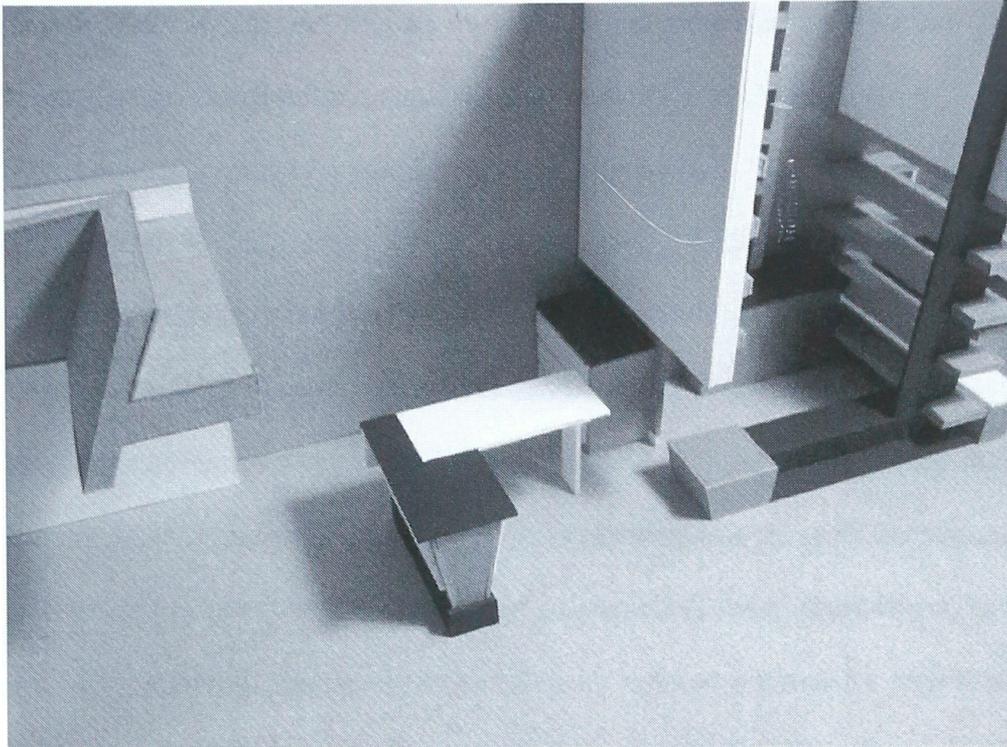


Figure 14 – Photo – Part of Model of *Key architectures*

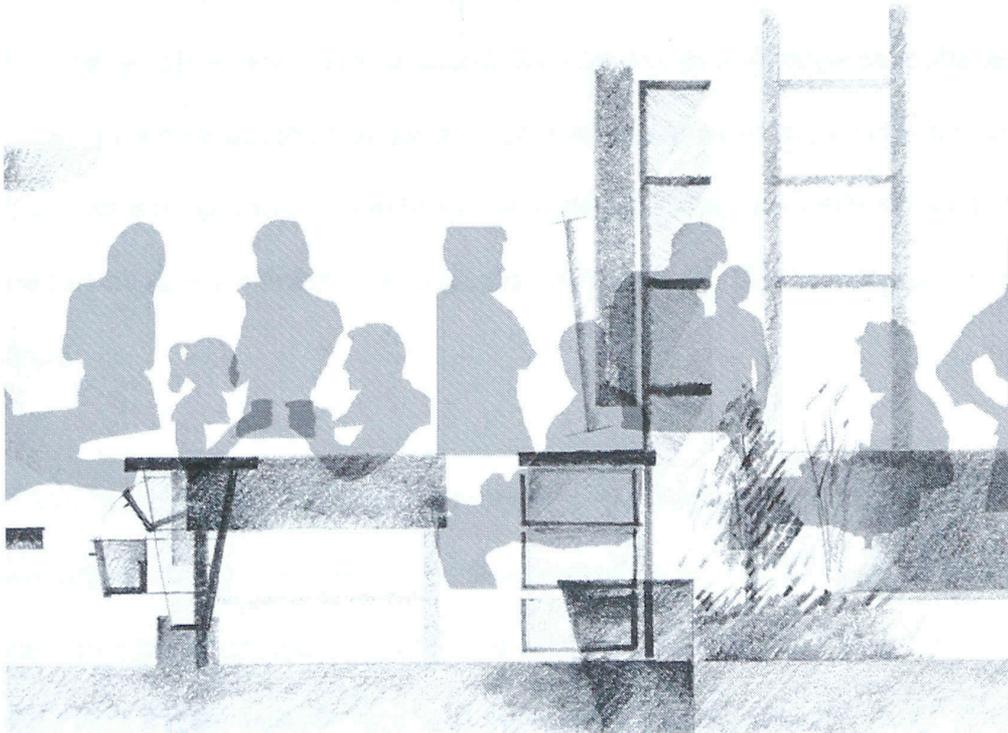


Figure 15 – Drawing – Part of *Key architectures*

The final set of images, figures 14 and 15, describe interpenetration through the centre on an event and its resulting *key architecture*. This centre is the table/counter around which are situated four figures. Two, sitting, are depicted centred on the table with the two other figures standing around them. These figures represent the morning routine of our clients. Here we see them share a cup of coffee and engage in conversation. Temporally, this space acts as an event centre around which two or more events connect. Previously we had discussed a counter as an example of multiplicities acting on architectural form and this table presents another good example of that phenomenon. In Chapter 4, we had described the dining room table as not just a place for eating a meal, but as the centre of a host of other events that might take place throughout the daily routine of the clients. This spatial object then is the host of an extensive temporal interpenetration. Here in one object we can link connections to multiple other spaces throughout the house; the table as overflow of work from the office; the table as a preparation surface for the evening meal; the table as entertainment centre hosting a card or board game; and even the table as a place to eat a meal.

From these four readings of the conceptual model and the *key architecture* section we have provided several examples of how spatial and temporal relations can be interpenetrated. This interpenetration is never truly direct and it cannot be said that the temporal image and the spatial object are equivalent. There is a translation that occurs and it is first read in the form of some of the spatial

irregularities listed above. We have seen this reflected previously in the works of both De Chirico and Boccioni. Time and space can never be fully connected and as we have seen through Bergson, space is a fixed understanding of things, where time flows and can never be tied down. The same is true with architecture. We build space, so irregularities between time and space will occur. If we focus, however, on the temporal as the guiding principal for our design we can arrive at a different understanding of space. In space interpenetration is the shadow of actions occurring in time. It is the potential connections between event centres, or across space, that is important with regard to any durational architecture.

From this exploratory work we designed the house. It is situated between the temporal and the spatial. As a building, the house is spatial and as a durational architecture, it uses events as its source for design decisions. From this point of view, we get a house that is spatially and temporally connected. This house exhibits the characteristics of interpenetration and extensity that we have investigated to this point and does this in a manner that builds a bridge from time to space.

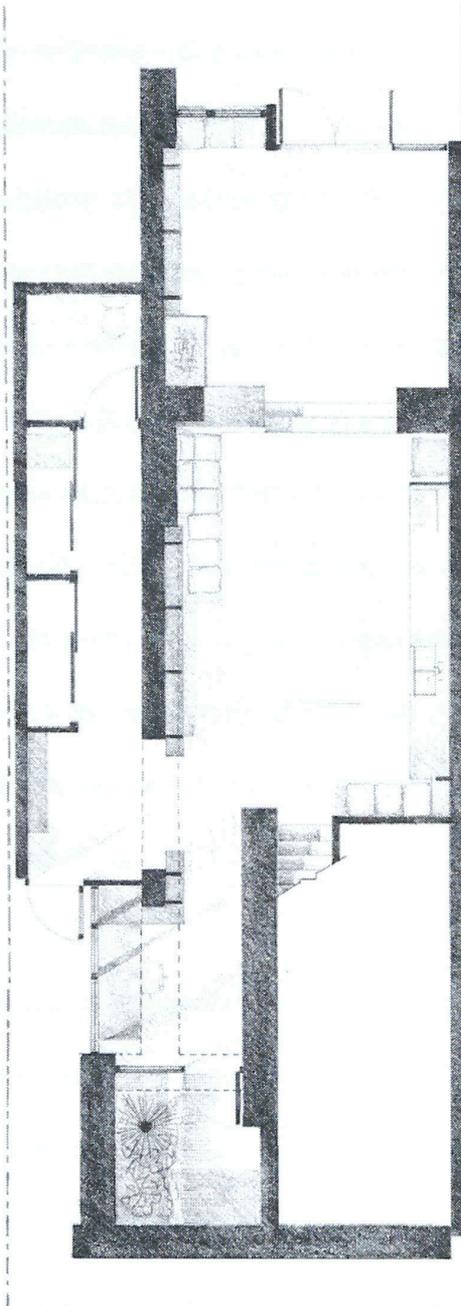


Figure 16 – Drawing – Ground Floor Plan  
Size: 11" x 42" – graphite drawing  
(Note: Right margin is North)

Figure 16 depicts the layout of the ground floor of the house. The design is centered on a large central space with a big table. Around this table there is, to the north, a galley kitchen with the refrigerator and stove to the west and east of centre is a double sink. Above the counter is a series of cabinets. To the east of this space is a small banquette with shelving on the north wall. The south wall of this space is a large stone wall with recessed shelving which is integrated with another banquette to the southwest. West of the central space and down a series of steps is a living room with a fireplace built in the same stone as the large south wall. This fireplace has one sloped side that relates to the banquette in the central area. Along the south wall of this space the same recessed shelving that was in the central area continues. To the south west another banquette has been built into its own nook with a large window at its back. Just to the north are patio doors with transom windows and a side light to the north. This doorway gives access to a patio and to the yard.

It is in this central space that we attempt to respond to the spatial concept of interpenetration. This response is mainly achieved through the table, which is not just a singular use object in the house. Here we exemplify its role through the design's use of it as a central feature of the home. This table acts as the focus of a large number of *key events* and *key architectures*. Employing it as a central feature supports our re-examining of programme through Mitchell, by allowing for a majority of the *Continuous Adjacency Diagrams* programmes to be situated here. Around this table we have cooking, dining, reading, conversation,

relaxation/contemplation and sleep, etc. The table is the centre of a continuous multiplicity since these events occur at it, yet they also occur in other places throughout the house. It is here that the central space, as designed, reinforces what we discussed in figures 14 and 15, that temporally and spatially we have an event centre. This is an example of a durational architecture.

Returning to central space and following the stone wall to the east we enter a small office area. Here shelving continues along the wall jutting into an opening slightly. This occurs on both sides of the opening and frames the entry between the central space and the hall. The shelving continues east, warps around a column and turns south to terminate at a window where every horizontal mullion lines up with a shelf. One of these shelves becomes the surface of a desk running east to west with a window looking out onto the front walk to the south. The ceiling of this space is split in two with the large stone wall forming an opening that is as large as the space is long (east to west). This ceiling appears like a stone beam. A wall of glazing, to the east of this space, overlooks a garden with a low front wall. Above the glazing the beam of stone intersects with another that frames the opening made for the glazing.

This office area is designed in such a manner as to interconnect with the rest of the house through overlap. As designed, the office space is a semi-private area, but through its tectonics it manifests itself much differently. This overlap is present in the surface of the desk, occupying the same height and materiality of

the shelving. It is present in the shelving being of the same design as that used throughout the central space. It is present in the manner in which the stone beam splits the ceiling into two spaces, reinforcing that this is not one room, but an alcove off the main space. The final overlap is through the views. The office looks out both the front walkway and into the garden. These spaces associate themselves to the outside world but also to the house. The garden is a shared viewing space for both the office and the mid level bedroom. Through these extensive spatial connections we approach our continuous multiplicity through the sharing of both spatial form and the overlap of events.

On the other side of the large stone wall to the south of the central space is a series of small rooms. To the east of them is the front door of the house, recessed from the street by a walk. The series of rooms to the west of the front door begin with a closet, then a laundry room with a folding table and end with a powder room to the furthest west. This part of the house is set back from the rear to allow for an exterior stair to the basement.

Looking at figure 18, from the central space there is a staircase leading up to the east. At the landing we can either keep going up or enter the master bedroom. To the south of this stair is another stone wall. This stone wall continues into the bedroom and is recessed to provide space for a built-in dresser and wardrobe. The south and east walls of the bedroom have full height glass windows. The bed is against the north wall with access to the bathroom on the west wall of this space. The bathroom is glazed from counter height to the ceiling. The east wall

of the bathroom has an overhead track mounted door. On the other side of this wall, a similar door is mounted in order to close off the bedroom for privacy.

Here, like the office space, we use tectonics as a method in interpenetration. In this space, surface and transparency are used to reinforce the connectedness of the duration. The south wall of this space echoes that of the central space. In the bedroom the wardrobe and dresser exhibit the same design sensibilities as the main wall of the house. The recess of the stone wall is highlighted through its reuse as a design element. The idea of displacement that was discussed in figures 8 and 9 returns with regard to the stone wall and the recessed millwork. This recess can be seen as the displacement of one material/construction method by the needs of an event much like the counter was displaced for the insertion of the banquette. Here we have the temporal surpassing the spatial in terms of importance. The solidness of the wall becomes subverted to support the housing of items required for other events, such as reading or getting dressed.

In the bedroom we have made the events of sleeping and bathing private, yet they are still connected to the rest of the house. This is achieved through the use of frosted glass on the bathroom walls. The bathroom connects to the rest of the house from its elevated position. This position gives it a place of prominence in the space of the central room. The use of the overhead track doors reinforce the connection that the bedroom and bathroom are tied to the house, rather than rooms separated and distinct.

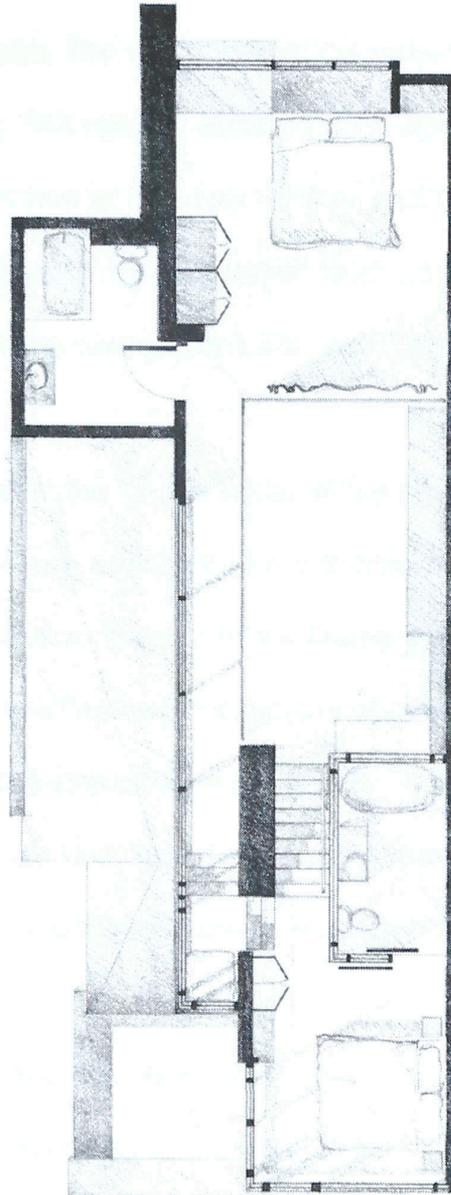


Figure 17 – Drawing – Second Floor Plan  
Size: 11" x 42" – graphite drawing  
(Note: Right margin is North)

Continuing up the stairs is a small nook with windows looking out to the front of the house. This nook has a banquette large enough for one person to sit comfortably. The stairs continue up from here and end at a catwalk that looks down into the central space. The south wall of this catwalk is glazed to provide light to the central space. The catwalk leads to a loft bedroom that is above the living room. The bedroom has its own bay window and banquette seating. This bedroom has its own bathroom that is situated over the powder room on the main level. A curtain can be drawn across the loft to provide privacy.

This final series of spaces in the house speak to the idea of both a continuous multiplicitous space as well as spaces that are interpenetrated. The loft space provides a visual connection to the rest of the house and is an example of this tendency. The bedroom existing as a mezzanine above the central space and living room connects all the events of dwelling within one greater space. This type of space expresses the qualities of a durational architecture, but in a way that is more tied to overlap temporally and to explicit sharing of space.

The following figures, 18 and 19, demonstrate the sectional nature of the house. It is designed in such a manner as to have not two floors but rather one that overlaps the other. From the living room at the lowest level the house shifts up and around in a spiral manner. This is not a literal spiral but one that can be seen in the shifting of events from public to private.

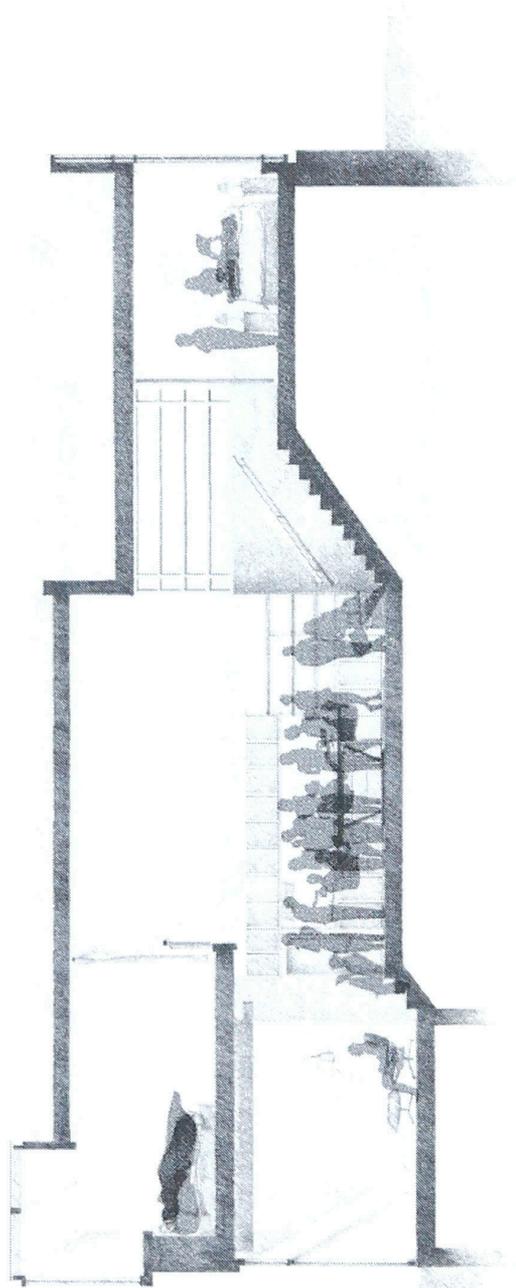


Figure 18 – Drawing – Section Facing North  
Size: 11" x 42" – graphite drawing

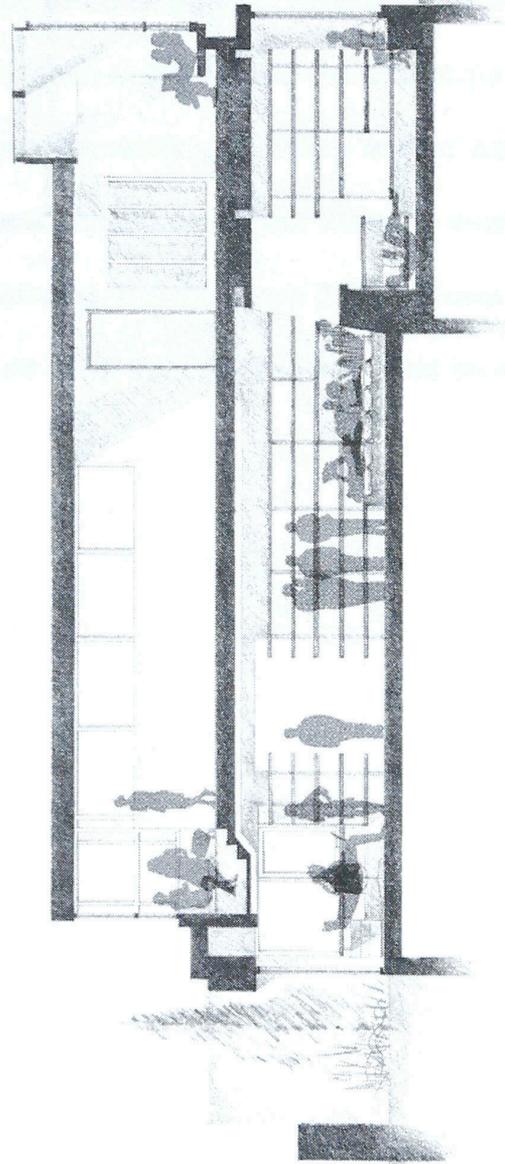


Figure 19 – Drawing – Section Facing South  
Size: 11" x 42" – graphite drawing

In the design of the house it has been shown that durational architecture can be tied to lived time. This tie, although not direct, acts more like a shadow of duration. The events of the house are designed to be cast into the surfaces of the building. Places to sit and read are built into the walls and places to study or contemplate are built into the fabric of this house. Relationships between activities in the house are seen discretely, not hidden behind walls. These connections between the event and the space are what we deem to be interconnected and interpenetrated. But these are just shadows of the events in the home. For any architecture to be truly durational it must be lived in, in lived time.

## Chapter 7 – Conclusion

---

This dissertation has investigated the concepts of duration and multiplicity as presented by Henri Bergson. It is through these concepts that we have come to the realization that temporality can be used as a part of the design process, helping connect our designs to how people engage the spaces they use. From our consideration of Bergson's ideas we have learned that the temporal is extensive. This relation is based in qualitative relationships called multiplicities. From these multiplicities we have demonstrated that the qualitative experience of time is without bounds.

It was through our investigation of actions and events that these fragments of time would not fit in the Bergsonian temporal paradigm. They need to be event centres rather events with bounds. Davidson tells us the *key actions* are those that instigate a new event.<sup>43</sup> We countered that if this were to be true, then the temporality of the event would have bounds and thus not be a part of Bergsonian temporality. This brought us to the programme as it applies to the architectural project. Looking at the adjacency diagram we formulated a new diagram, the *Continuous Adjacency Diagram* that combined the insights found in the works of Bergson and Davidson to reformulate programme from a temporal standpoint. This reformulation required us to conceive of programme through event centres or what we termed *key actions*.

---

43 Davidson, Donald. *Essays on Actions and Events*. Oxford: Oxford University, 1980. pp. 49.

To further our understanding of architectural form and representation we looked at the surrealist painting *Gare Montparnasse (Melancholy of Departure)* by Giorgio de Chirico, and the futurist sculpture *Development of a Bottle in Space* by Umberto Boccioni. From these two works we explored the phenomenon that spatial irregularities in representation lead to temporal shifts that are concurrent with Bergsonian duration and that interpenetration lead to connections between various depicted and alluded forms. From these two works we saw methods of representation that allowed us to engage with both the temporal and the spatial.

Upon considering the points brought forward through our look at Bergson, Davidson, programme, and both de Chirico and Boccioni we developed a temporal programme of a couple's daily routines, including a temporal depiction of that programme in the *Events of Domesticity* drawing. It was from these two representations of the events in the house that we were able to proceed with our *key architectures*. From the *key architectures* we began a process of engagement between time and space, with time as the constructing principle. Through a process of interpenetrating events we presented an early synthesization of both the temporal and the spatial. This was achieved through the modeling of the *Key Architectures* drawing and an exposition on the methods of interpenetration. These included displacement, overlap and centring. These methods of interpenetration gave us the tools necessary to design the house from a temporal point of view.

With these conceptual and design tools the house demonstrates the connection between the temporal and spatial. Here we have time within space using the concepts of the qualitative multiplicities and the interpenetration of those multiplicities. This is a house that uses the concepts presented by Henri Bergson and suggests methods by which those concepts can be realized in space. This space is then not a shadow of true duration, but an architecture that is durational. The house is designed with respect to the event and has spaces that relate to its occupants.

The consideration of time over space produces what Bernard Tschumi would refer to as an architecture that is more than just its facades.<sup>44</sup> A durational architecture is more than just the sum of its parts; it goes beyond walls, and floors, and ceilings, and windows and doors. The conception of time is the most important feature of a durational architecture. Without thinking temporally we cannot hope to design durationally.

---

44 Tschumi, Bernard. "Architecture and Disjunction". Cambridge: The MIT Press, 1994. pp. 122.

## Chapter 8 – Postscript

---

While the text of this thesis focused more on a hermeneutic of Henri Bergson, the discussion at the thesis defense revolved around the development of Bergson's theory into a pragmatic approach to the design of a work of architecture. This is not to suggest that we put aside the interpretations of the works of Henri Bergson. The pragmatic understanding that was developed stemmed from an interpretation of his works. There is a transition that occurs between this interpretation, hermeneutics, and the application of that understanding to an architectural design process, the pragmatic application of the developed theory. The transition is between the duration of our client's lives and the buildings they inhabit. Architecture is only part of the lived time of our clients when they interact with architecture. It is from this interpretation of the hermeneutic understanding of Bergson that led us to take the stance throughout the thesis that the space of architecture must be informed by programme. Thus we arrive at a pragmatic interpretation of our hermeneutic interpretation of Bergson.

Architectural representation is a paradox from the point of view of Bergson because it is spatialized temporally. This means that it generally looks forward in time, or presupposes. This presupposition is problematic since it is not part of lived time or duration. Any form of representation encounters this problem because it represents another time but it is not that time. This separation means that it is 'other' and not the lived time we occupy. Lived time cannot be represented; representation can only be a shadow of lived time.

From this point we found the spatial irregularities in De Chirico and the interpenetration of Boccioni to be helpful clues that illustrate to us the shadow of lived time in representation. This is done with the representation through the bleeding of events, one into the other. By bleeding events we can bring forth both the shadow of temporality and a connection to duration. This we achieved in the *key architectures* drawing (figure 7) by using displacement, overlap, centering and extension as part of a technique of interpenetration. This technique created shadows, or moments of displaced form that allowed us to see the possible connections between the events depicted. The technique was demonstrated in section drawings but is not necessarily restricted to any particular media. I would argue that any media in the architect's palette of representational techniques could work to connect us to shadows of duration. Thus, it is not dependent upon the media used but what is represented through that media. This is exemplified through the spatial irregularities of De Chirico and the interpenetration of Boccioni, works of art produced in different media that both show a connection to duration.

As another form of representation digital media pose unique issues with respect to temporality. Digital media produce an illusion of simultaneity that is different from the simultaneity of Bergson. This illusion occurs because we can use the tools presented by digital media to perform multiple tasks concurrently. This concurrences is not simultaneity in a Bergsonian sense since we are never doing more than one task at any given moment. We may do them so close to one

another that they seem simultaneous, but it is not so. The multiplicitous nature of interactions with digital media is similar temporally to that of cooking a meal. It is our interaction with multiple tools to perform multiple tasks in a small frame of time. Temporally speaking we are engaging in both circumstances with events that are multiplicitous.

From the outset of the thesis the goal was to find a connection between the temporality of Bergson and the temporality of architecture. The form of time we would deal with in architecture included renovation, decay and client interaction with space. Both renovation and decay have a time that focuses on the tectonic object of architecture rather than on the temporal. From our reading of Bergson this look at time was antithetical to his form of temporality. This led us towards the interaction of clients with architecture as a response to this concept of lived time.

Throughout our interpretation of Bergson the role of temporality was not to be defined as anything but temporal, thus it was a conscious decision to avoid defining the temporal through the spatial. This interpretation focused on the direct connection between events in space and their underlying connection to that space. This connection I found to be only semi-formed in the thesis. It would be helpful to develop a deeper insight into how people occupy space, temporally. To further this connection I feel that discussions with a client regarding how they wish to inhabit their space to be the most important part of any temporal design.

The resulting interpretation of those wishes or even their direct application to architectural space would be the result of a successful application of this concept.

## Bibliography

---

Apollonio, Umbro. *Futurist Manifestos*. Tran. Brain, R., R. W. Flint, J. C. Higgitt, and Caroline Tisdall. Boston: MFA Publications, 2001.

Aristotle. *Physics*. Book VI. Part 9.

Bergson, Henri. *Duration and Simultaneity – Bergson and the Einsteinian Universe*. Tran. Lewis, M. and Durie, R. Manchester: Clinamen, 1999.

Bergson, Henri. *Matter and Memory*. New York: Zone Books, 1991.

Bergson, Henri. *Time and Free Will: An Essay on the Immediate Data of Consciousness*. Tran. F. L. Pogson. Mineola: Dover, 2001.

Cherry, Edith. *Architectural Programming*. 09 February 2009. Web. 10 June 2010. <[http://www.wbdg.org/design/dd\\_archprogramming.php](http://www.wbdg.org/design/dd_archprogramming.php)>

Cherry, Edith. *Programming for design: from theory to practice*. Hoboken: John Wiley and Sons, 1998

Davidson, Donald. *Essays on Actions and Events*. Oxford: Oxford University, 1980.

Deleuze, Gilles. *Bergsonism*. New York: Zone Books, 1991.

Feinberg, Joel. "Action and Responsibility". *Philosophy in America*. Ed. Max Black. Ithaca: Cornell University Press, 1964.

Grosz, Elizabeth. *Architecture from the Outside – Essays on Virtual and Real Space*. Cambridge: The MIT Press, 2001.

Grosz, Elizabeth. "Thinking the New: Of Futures yet Unthought". *Becomings: Explorations in Time, Memory, and Futures*. Elizabeth Grosz. Ithaca: Cornell University Press, 1999.

Herbert, Daniel M. *Architectural Study Drawings*. New York: Van Nostrand Reinhold, 1993.

Herbert, Frank. *Dune*. London: Hodder and Stoughton, 1965.

Kwinter, Sanford. *Architectures of Time: Toward a Theory of the Event in Modernist Culture*. Cambridge: The MIT Press, 2002.

Kwinter Sanford. "The Plasticity". *Architectural Theory Since 1968*. Ed. Hays, K. Michael. Cambridge: The MIT Press, 2000.

Mitchell, William J. *The Logic of Architecture – Design, Computation, and Cognition*. Cambridge: The MIT Press, 1994.

Miutis, Joe. *Ether: The Nothing that Connects Everything*. Minneapolis: University of Minnesota Press, 2006.

Petrie, Brian. "Boccioni and Bergson". *The Burlington Magazine*. No. 852. Vol. 16. March, 1974. pp. 140–147.

Rubin, William. "De Chirico and Modernism". *De Chirico*. Ed. William Rubin. New York: The Museum of Modern Art, 1982.

Schaffner, Kenneth F. *Nineteenth Century Aether Theories*. New York: Pergamon Press, 1972.

Tschumi, Bernard. *Architecture and Disjunction*. Cambridge: The MIT Press, 1994.

## Glossary of Terms

---

Adjacency Diagram – illustrates the arrangement of spaces in the building in relation to their function.

Continuous Adjacency Diagram – presents potentials of overlap and interconnectedness that has more in common with lived time than with bounded space.

Continuous Multiplicity – see Qualitative (or continuous) multiplicities

Discrete Multiplicity – see Quantitative (or discrete) multiplicities

Distinction – is the process by which we separated one from another. This process is most easily represented through the act of counting. Counting in order to be effective must separated things/moments to say that is one and this is another.

Duration – as a concept, formulated by philosopher Henri Bergson, is conceived such that all we experience in time is connected. This is referred to as lived time.

Extensity – is the concept that any moment moves outward from its centre to join with other moments. Bergson defines this as representative sensation of pure quality.

Feature of the Event – is the *key action* that relates to an event.

Feature of the Description of an Event – is understood as the collection of its actions.

Interpenetration – is a concept that suggests all things temporal and spatial are connected.

Key Actions – are actions that conclude one event and start another from Davidson. His defining moment for the event is the beginning. We interpret the centre of events as the defining moment allowing one event to bleed into the next.

Key Architectures – are architectural responses to *key actions*. They have some spatial significance, but are used to translated time into space

Multiplicities – are a conceptual device through which time is melded together but they are not simultaneous. They are centres of activity (events) in architecture rather than spaces.

Programme – in the durational sense, is that which moves beyond bound space. It is a moment, an event that shapes our interaction with space.

Qualitative (or continuous) Multiplicities – are events sharing in themselves a similarity which allows them to be recognized as the events, but allows them to also be combined to produce an extensity.

Quantitative (or discrete) Multiplicities – are the separation of events and the production of distinctions. The separations are instants.

Simultaneity – suggests that two events are occurring at the same moment.

Spatialization of Time – is the process by which we take temporality and remove it from time by quantitative analysis.

Spatial Homogenous Medium – is the void between objects, the space that defines the things as separate. This is a mechanism for the comparison and distinction of things.

Temporal Homogenous Medium – is where we conceive of distinctions between events. This is a mechanism for the comparison and distinction of events.

Appendix: Model Photos

---

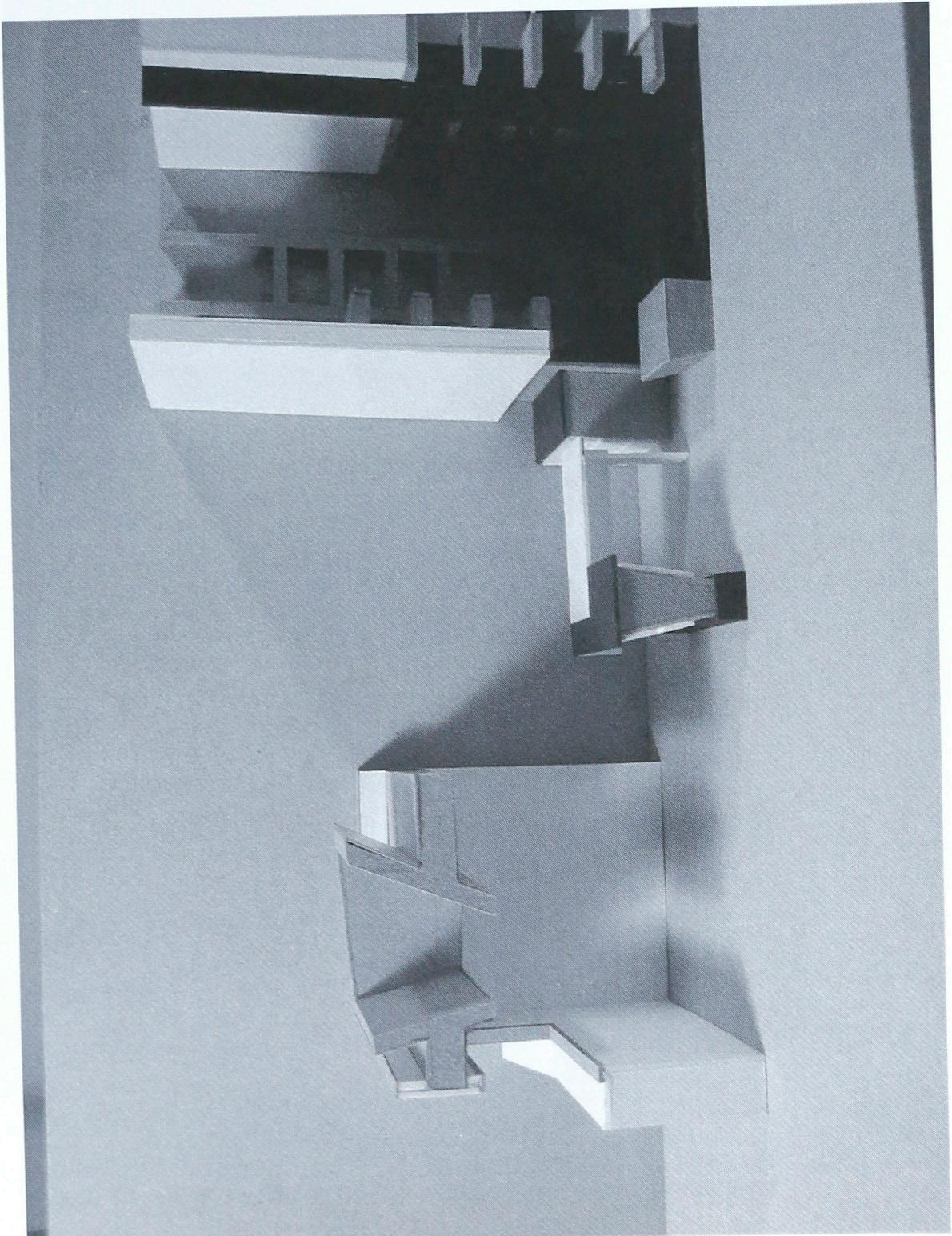


Figure 20 – Photo – Model of *Key architectures* – Left Side

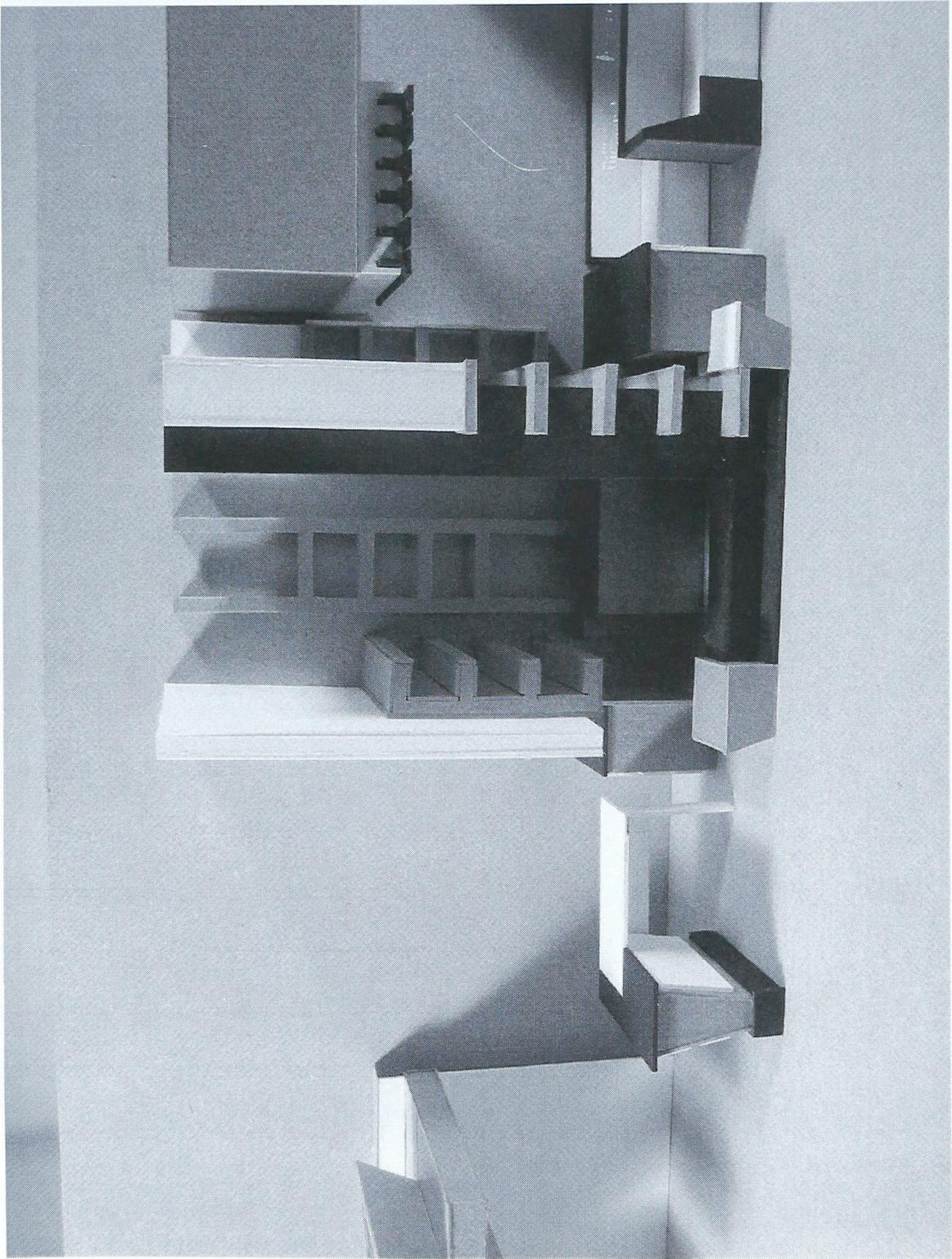


Figure 21 – Photo – Model of *Key architectures* – Left Centre Side

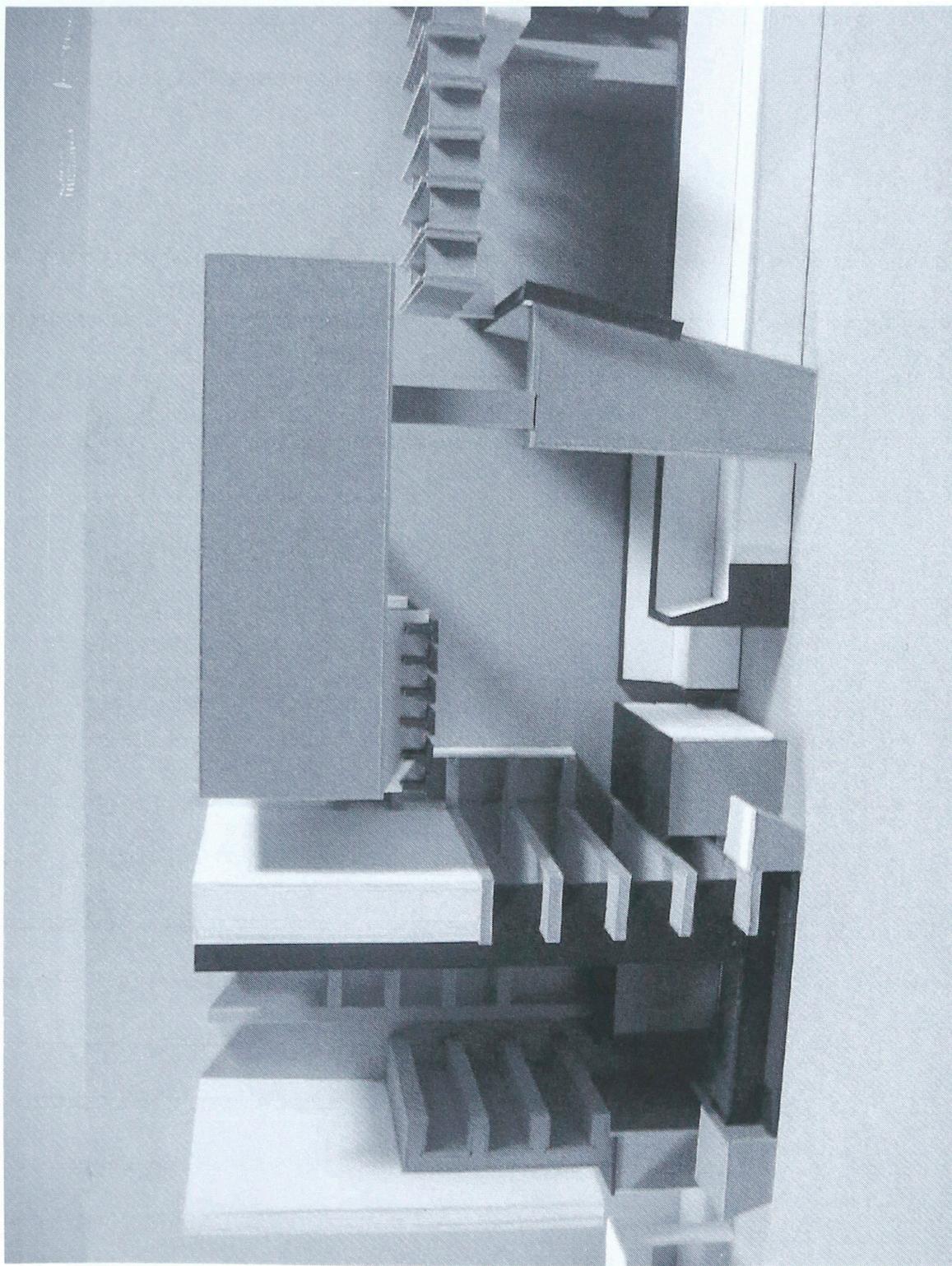


Figure 22 – Photo – Model of *Key architectures* – Right Centre Side

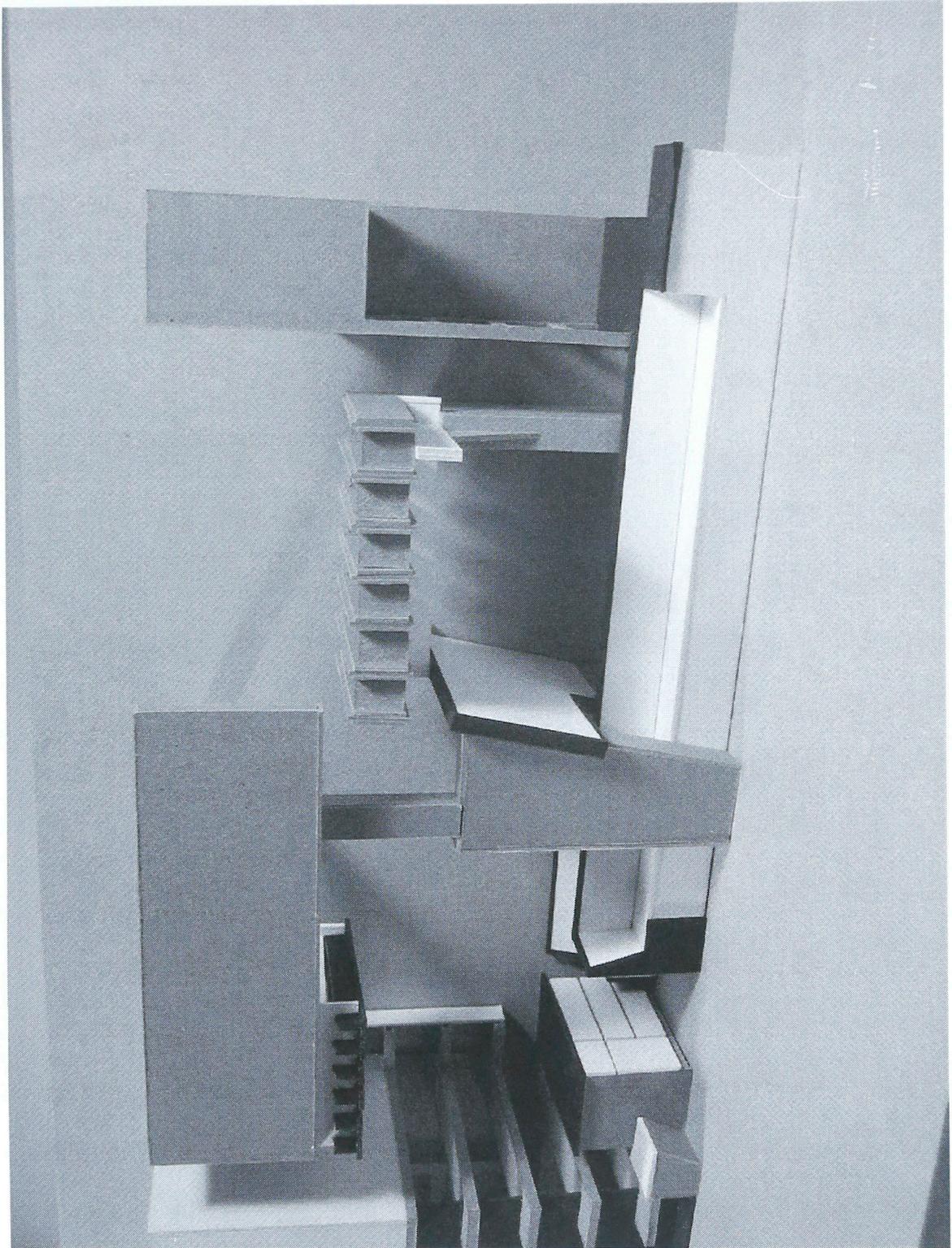


Figure 23 – Photo – Model of *Key architectures* – Right Side

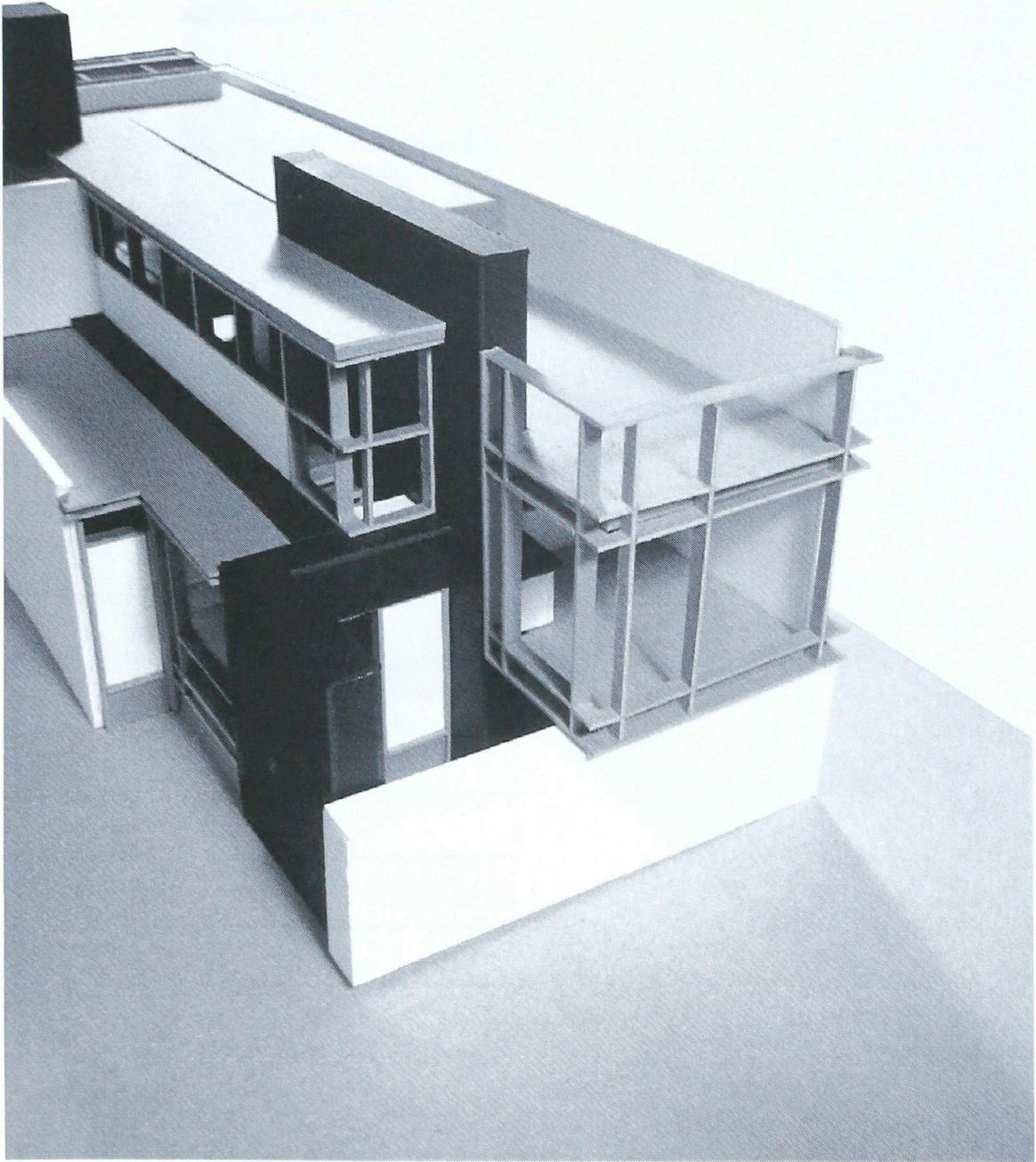


Figure 24 – Photo – Model of House – Front Façade

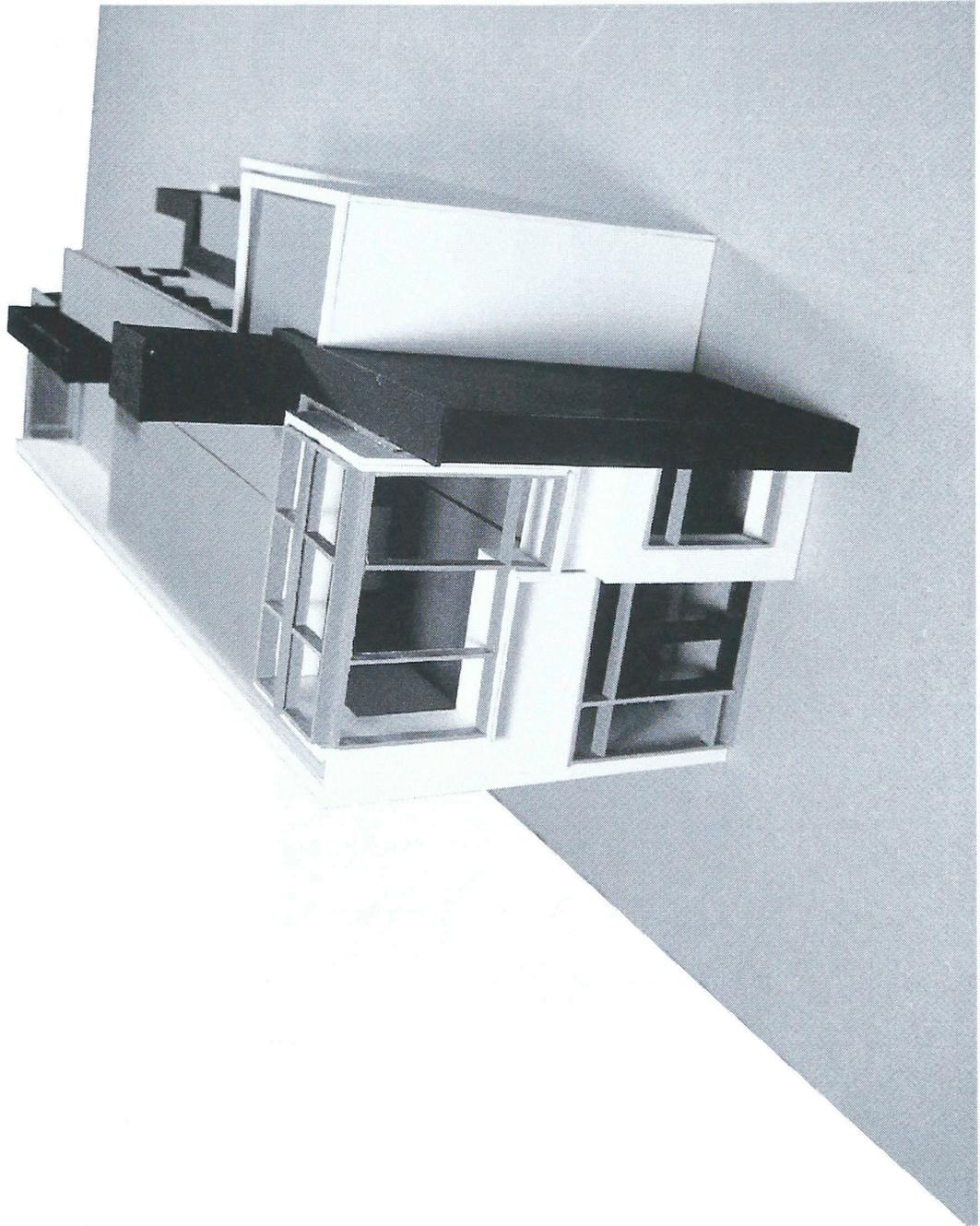


Figure 25 – Photo – Model of House – Rear Facade

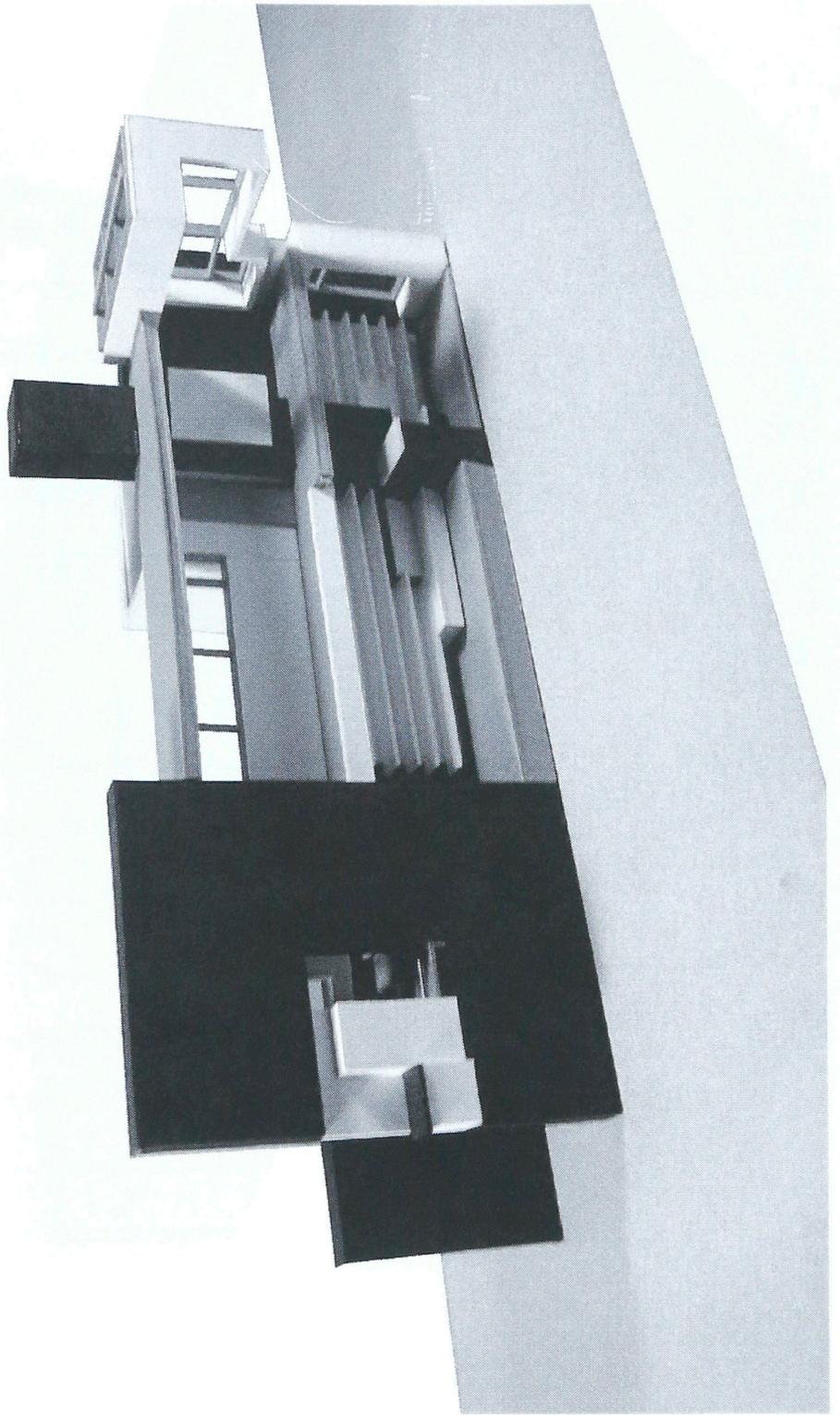


Figure 26 – Photo – Model of House – South Section Facade

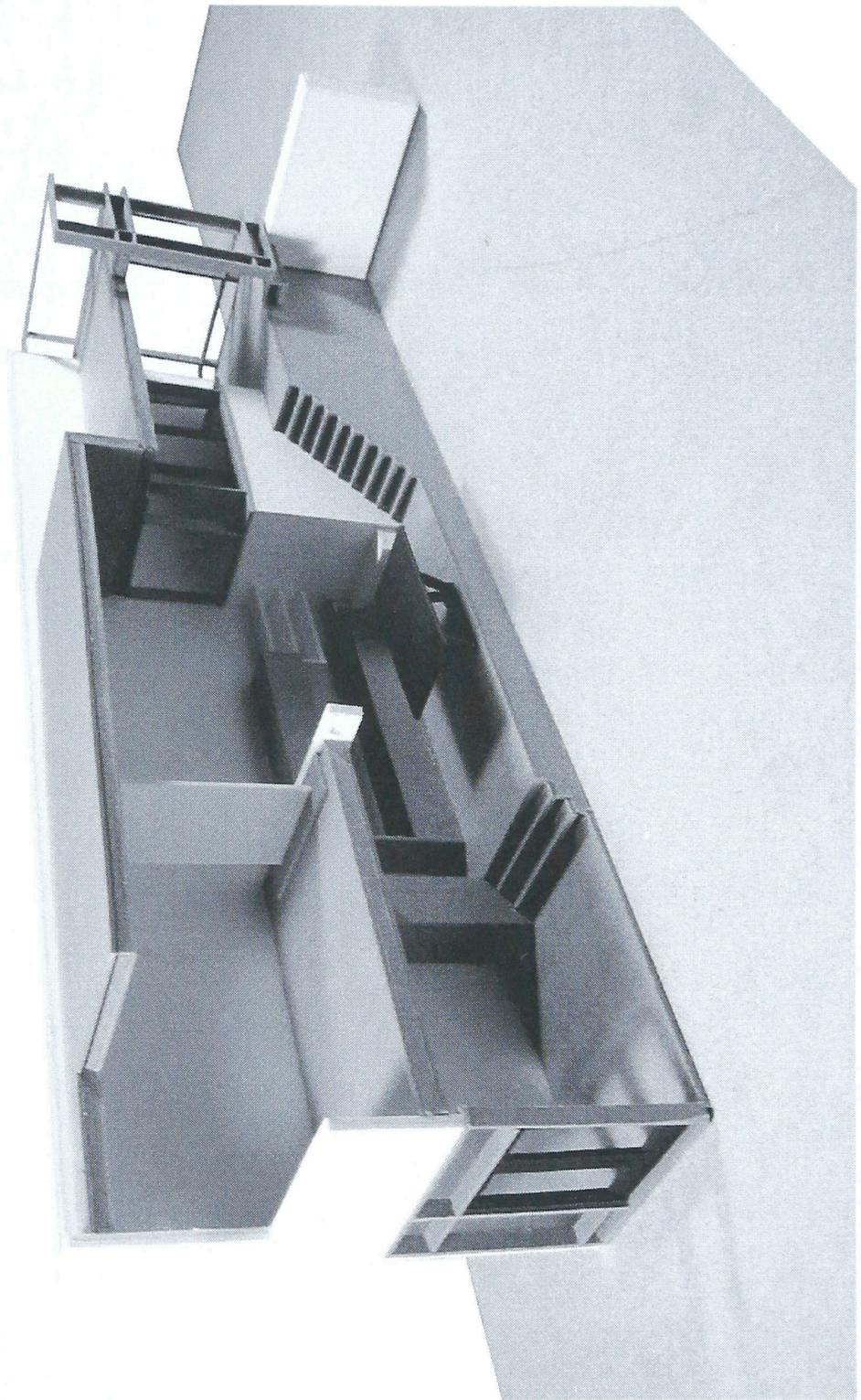


Figure 27 – Photo – Model of House – North Section Facade