BUILDING

Building

Ryan Seavy

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Master of Architecture
in
Architecture

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Frank Weiner
Bill Galloway

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Building for concrete is temporary. The building of wood and steel stands against the concrete to give form and then gives way, leaving a trace of its existence behind.

Concrete is not a building material. One does not build with concrete.

One builds for concrete.

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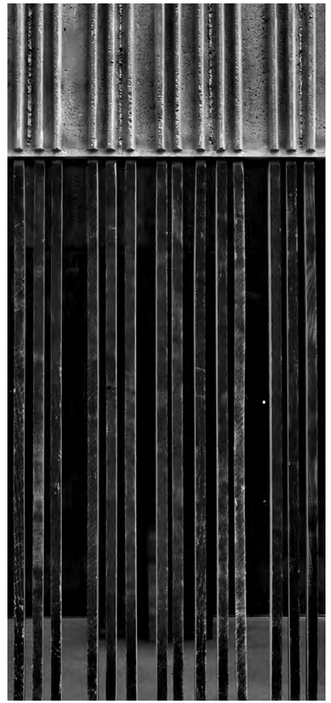

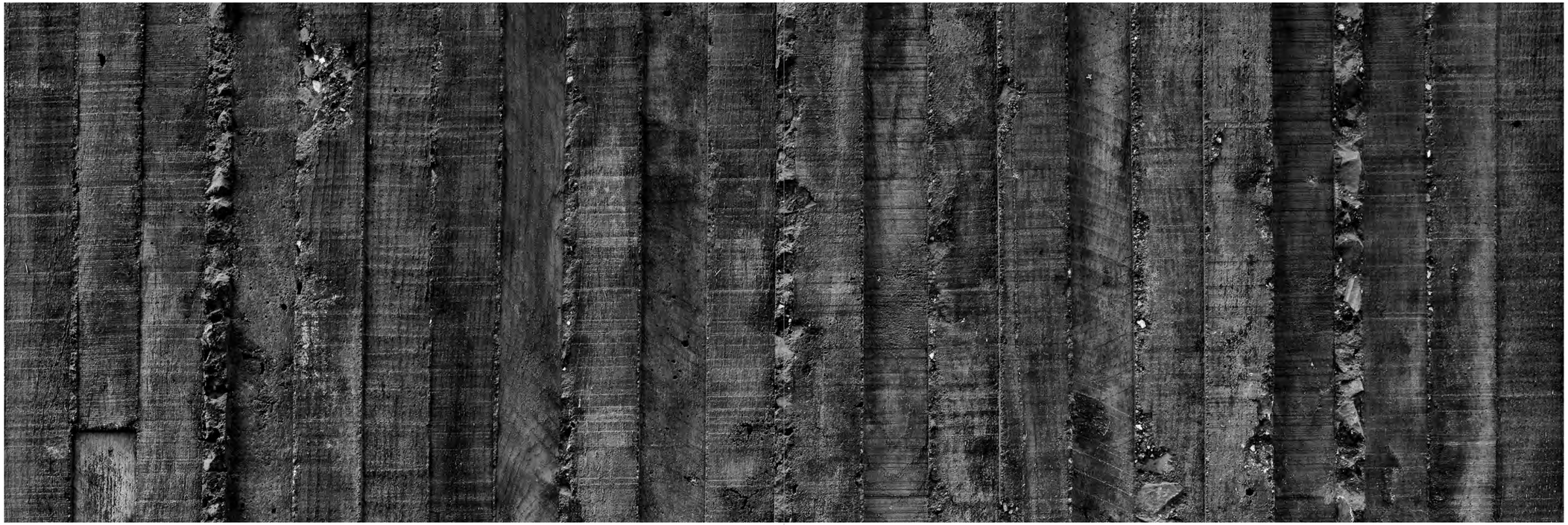

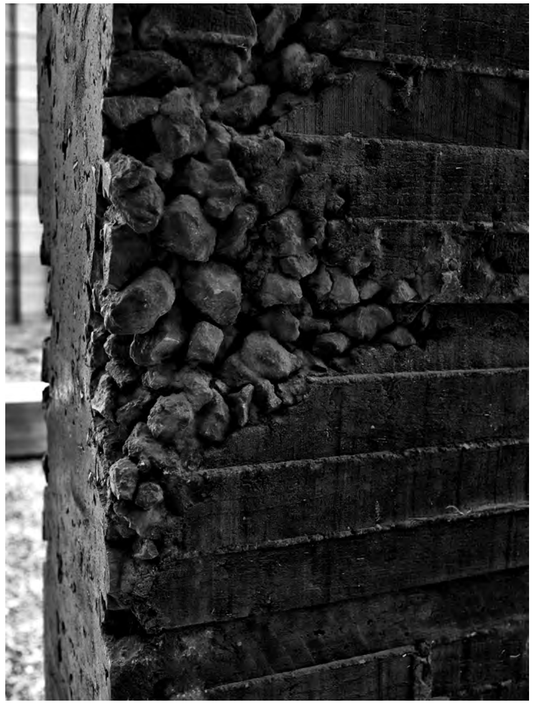

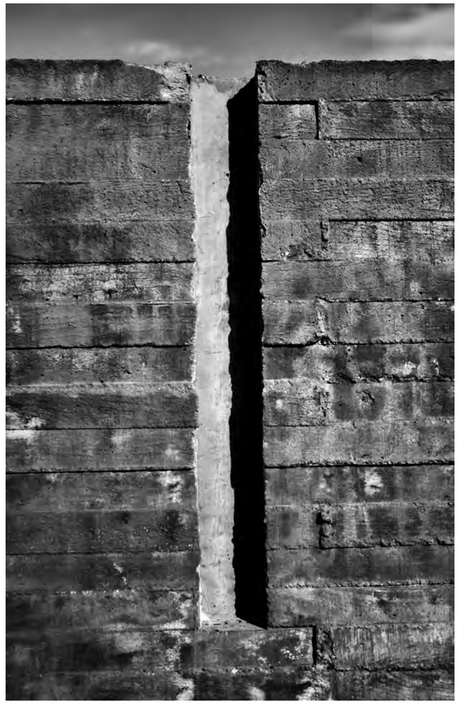

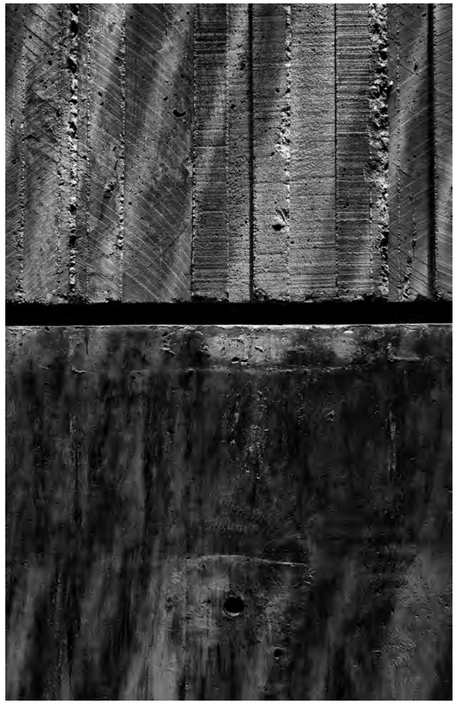

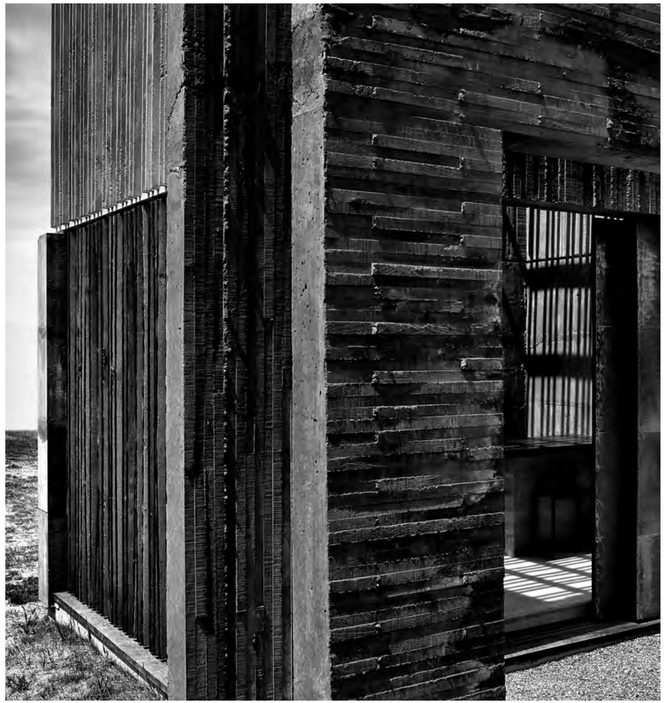

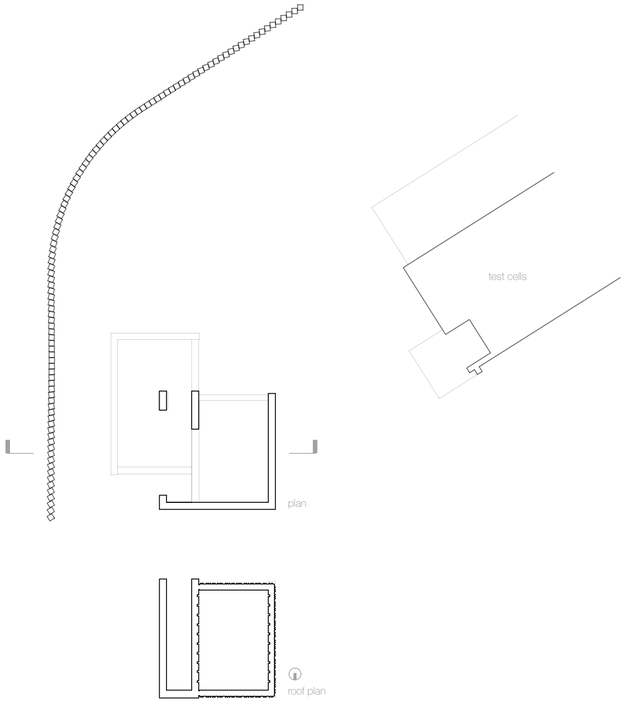
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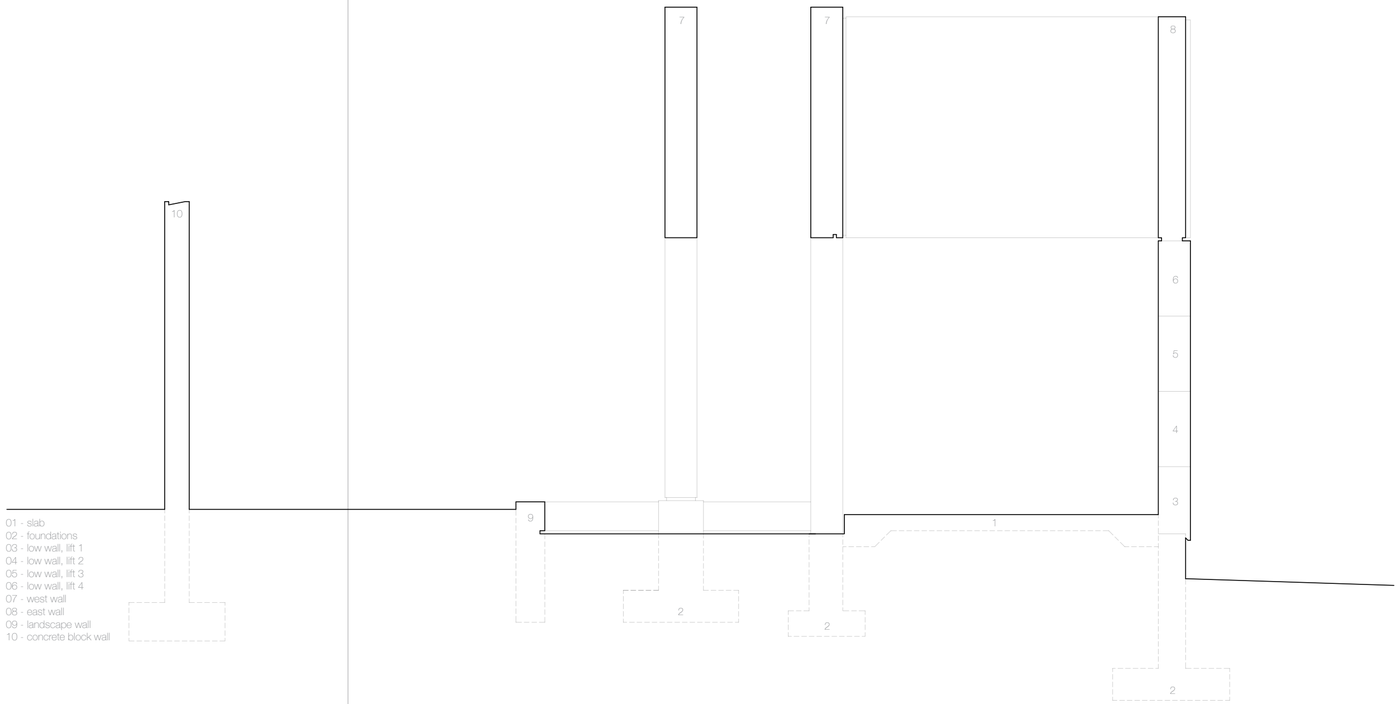
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project credits

Building Materials Class 2009/10
original project design
formed + poured slab

Building Materials Class 2010/11
formed + poured foundations

Building Materials Class 2011/12
formed + poured low wall lift 1,2

Building Materials Class 2012/13
formed + poured low wall lift 3,4

Building Materials Class 2013/14
poured landscape wall

Gabe Oliver
concrete block wall
master's thesis, 'A Wall Building'

Ryan Seavy
final project design
formed + poured east, west, and landscape walls
design + fabrication of fixtures

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2013/14 Building Materials and Construction Class led by Professor Bill Galloway and Ryan Seavy
Peter Baron, Kelsey Bixler, Cecilia Camuzzi, Maria Castro, Weiran Cheng, Erin Conner-Diven, Daniel Darvishi, Danielle Deyoung, Michael Ervi, Cong Guo, Andrew Gutierrez, Scott Hambrick, Asti Jackson, Benjamin Kaplowitz, Bradley Kaufman, Miriam Keane, Yuqing Lin, Asli Meric, Meera Murali, Herman Nadal, Justin Newsome, Neda Norouzi, Thanaporn Raungphungthong, Robin Rodowsky, Jia SOng, David Speedlin, Jiazhen Sun, Sartita Vongpradhip, Samantha Weller, Di We, Xiaowan Yang

project description

The Cube, standing 13'8" x 13'8" x 13'8" and enclosing a 12' x 8' room, is located at the Virginia Tech College of Architecture and Urban Studies' Building Research and Demonstration Facility on the campus of the Virginia Polytechnic Institute and State University.

The project is composed of three cast-in-place concrete walls. Each wall is formed differently, yielding unique characteristics. Within these concrete walls, four wood and steel fixtures are installed - a table, a door, a ceiling and a screen.

project history

The Cube began as a class project for the Building Materials and Construction course at the Virginia Tech School of Architecture + Design. Led by the course professor, Bill Galloway, a group of graduate architecture students initially designed the project in the fall of 2009; the next spring they broke ground and poured the slab. Over the course of the next three years, three different groups of students formed and poured the foundations and the four lifts of the low wall. In the fall of 2013 the project was taken over by Ryan Seavy as his Master of Architecture thesis. He redesigned the project, utilizing the existing wall and foundations, formed and poured the east, west, and landscape walls, and designed, built, and installed the fixtures.

project advisors

Patrick Doan, Thesis Committee Chair
William Galloway, Thesis Committee
Frank Weiner, Thesis Committee

project sponsors

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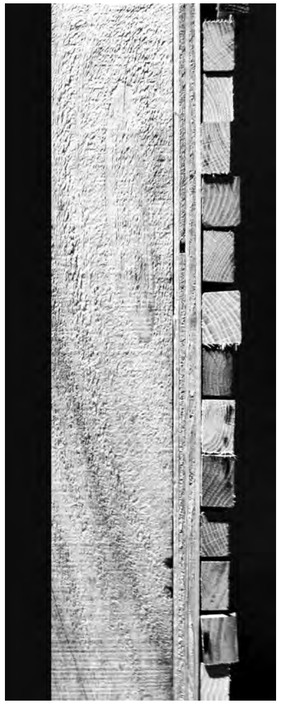

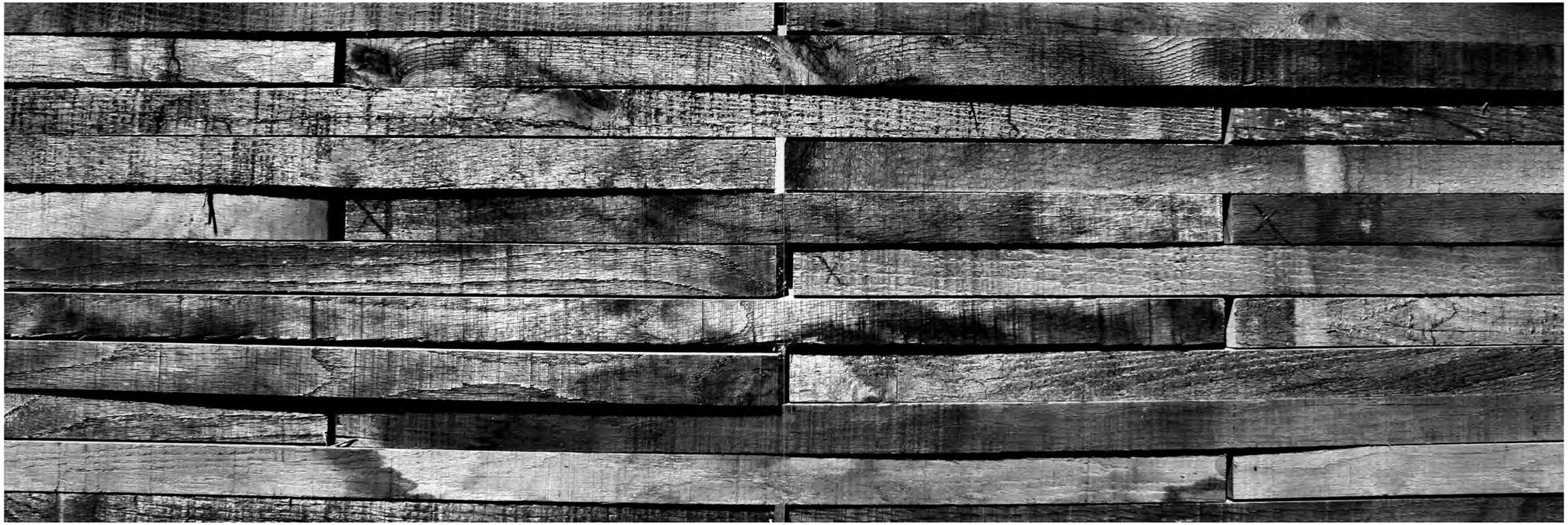

what is called building?

This essay deals with problems of building and its relationship to philosophy. I do not believe what I have written to be novel – quite the opposite – when finished it should seem rather obvious. Therein lies the problem. We take the things of the world for granted. We give little thought to the different modes of making and what is made. We pass quickly by the word ‘building’ using it to describe any and every structure. It is rare we use this term with precision, and even rarer that we build.

In this task, I do not give traditional sources, but rather notes in which relations can be drawn – if I am clear in my thinking and one understands that thinking, one will understand its place within the lineage of architectural theory and philosophy. The line of questioning posed in this essay is inspired by a series of lectures delivered by Martin Heidegger in the early 1950’s and later published in book form under the title, ‘What is Called Thinking?’ I have reformulated Heidegger’s question to ask:

What is called building?

There are two types of buildings.[1] Those that stand in the background and those that stand against the background. Those that are not given a second of thought and those that give thought. Those that say nothing and those that say everything.[2]

The first we will call construction. The second we will call building. Construction is of concern here only in so far as it will help elucidate what we mean by building, our primary objective. We ask, ‘what is called building?’ Within this question are two related questions:

i – what is it that we call building?
ii – what is it that calls us to building?

We must take up the first question and find our way to the second.

The word ‘building’ occupies an ambivalent space within our use of the English language. In everyday speech it is used simultaneously as a noun and verb to signify both an object and an action. The two are connected in that the verb form, building, is the action which results in the noun form, a building. This seems like a relatively simple relationship: a building is made by the act of building. This, however, is not how we use our language. We point and say, ‘there is a building under construction,’ ‘there is the construction site,’ and when construction is complete, we point at the object and call it a building: a building made though the process of construction. In both instances, we find an action-result relationship. There are the means – building or constructing – used to achieve an end, a building.[3] In this confusion, we have lost the nuance and therefore the meaning of building. Building[4] is not a means to an end, or an end in itself.

Building is the two-fold forming of the world.

1
I use building here in the common everyday sense.

2
Paul Valery in ‘Eupalinos, or the Architect’ would say there are three types: those that are mute, those that speak, and those that sing. The first two are in essentials different orders of the same type – those that speak are better versions than those that are mute, but neither are building.

3
Both statements [a building made by building and a building made through construction] are incorrect, but the first is less so in that it logically follows. Our confusion with the word may stem from our language evolving in such a way to give a logical statement importance, rather than staying with the word’s actual meaning.

4
I ask that as we go forward in our discussion we try to forget the common usage of the word building. In order to learn building and to think on building, we must be ready to learn and think – to be ready we must forget what we think we know.

5
We use the term man in this discussion not to refer only to men, but to all humans, men and women, generically, as it was traditionally used*. We have chosen the term man because it refers to itself – one man or woman – and the whole – all of humankind – simultaneously.

*Man is the English equivalent of the French l'homme and German mensch.

6
'The dialectic of activity and passivity in human cognition is manifest particularly in the fact that in order to know things in themselves, man has to transform them into things for himself; to know things as they are independently of him, he has to subject them to his praxis; to find out how they are without his interference he has to interfere with them. Cognition is not contemplation. Contemplation of the world is based on the results of human praxis. Man knows reality only insofar as he forms a human reality and acts primordially as a practical being.' Kosik, Dialectics of the Concrete

7
The Greek terms poiein, from which the term poiesis is derived, means to act. In Book VI of 'Nicomachean Ethics' Aristotle distinguishes between the two notions of this word – to produce and to act. Poiesis is the former – to produce or bring into being:

'Now since building is an art and is essentially a reasoned state of capacity to make, and there is neither any art that is not such a state nor any such state that is not an art, art is identical with a state of capacity to make, involving a true course of reasoning. All art is concerned with coming into being, i.e. with contriving and considering how something may come into being which is capable of either being or not being, and whose origin is in the maker and not in the thing made; for art is concerned neither with things that are, or come into being, by necessity, nor with things that do so in accordance with nature [since these have their origin in themselves]. Making and acting being different, art must be a matter of making, not of acting...[art] is concerned with what can be otherwise.' Aristotle, Nicomachean Ethics, Book VI, 1140a

In 'Building, Dwelling, Thinking,' Heidegger interprets this passage of Aristotelian philosophy using a different Greek term, techne. Techne, like poiesis, is associated with art and making; though it is more related to notions of craft and knowledge of making, of how to make. These notions are imbued in Heidegger's interpretation of Aristotle and techne as a letting appear – that in order to let something appear, one must have the knowledge, the technique, to let it appear as this or that:

'The Greek for 'to bring forth or to produce' is tikto. The word techne, technique, belongs to the verb's root tec. To the Greeks techne means neither art nor handicraft but rather: to make something appear, within what is present, as this or that, in this way or that way.' Heidegger, Building, Dwelling Thinking, 157

8
'[The] table of drama, agitation, lucidity stands in opposition to other scenes and movements that we call nature or the world. But we can do nothing with this natural world except to distinguish ourselves from it, and then immediately replace ourselves within its frame.' Valery, The Method of Leonardo Da Vinci

9
To use up or to lay waste is the opposite of building. If we return to our opening lines, there is building and there is construction. To use up or lay waste is construction. Construction is not concerned with the world or preserving that world. Construction is a purely pragmatic endeavor – an attempt to solve problems of shelter and survival*. In this attempt to solve these problems, construction uses up material and lays waste to the world. What is made through construction is not lasting, it is not made to stay in the world, but rather to serve a purpose and when that purpose has been fulfilled to be discarded. Construction commodifies the world; it stands over the world. As we build less and construct more, the world falls further and further away from man. With the world farther away, there is less to stand against and therefore the possibility of building shrinks. This leaves the danger that without building, man will be left lost upon the earth.

With that said, we are not saying construction is unimportant, but rather that simply it differs greatly from building. Many things we use on a daily basis are constructions and we should strive to make these things as useful and beautiful as possible,

*Building is clearly also concerned with these issues, but in building they are not a problem to be solved, but rather a fundamental part of the situation. Building is meta-pragmatic in a similar sense to that of meta-ethics. [Meta-ethics asks questions such as 'what is good and evil,' while normative ethics asks 'is this or that good or bad'] Building is not concerned with simply providing space for man to bide his time on earth; building is concerned with the fundamental nature of man's existence.

i.
The world is where man dwells.[5] To dwell is to stay or to be. The world is where man stays, where he exists, where he is. This world exists for man a priori – because man exists, the world exists. This world, however, is not present to man simply because he is and the world is. Man can only know, experience, and understand that which he has formed for himself.[6] Therefore, for the world, man's dwelling place, to be present for man, he must form it himself. Building is the forming of this world. Forming is not a creating ex novo, nor a type of imitation; forming is a making apparent in the sense of the Greek words poiesis and by relation techne.[7] In this sense, forming is making the world apparent to man as his world. This world, man's world, the built world, stands in contrast to the world which is given a priori.[8] The phenomena of the world, the earth and sky, rain and wind, sun and moon, exist regardless of man's existence. Man cannot dwell in this world because its phenomena are not apparent to him; they have not been formed by man for himself.

In forming the world for himself, man is appropriating this a priori world, but this appropriation is not a laying waste or a using up of the world, but a preserving. To lay waste to the world is to commodify its phenomena for some use – to use them up.[9] To dwell in the world is to preserve these phenomena by making them apparent. This making apparent through preserving is also not an imitation of the natural world, its phenomena are not preserved through recreation or copying. To attempt to recreate the natural world is to commodify its phenomena, to objectify them, and as a result lead them to fall away from man. To preserve is to give man the sky as the sky, the earth as the earth, the sun as the sun, and man as man. To make apparent through preserving is to stand against the a priori world. This standing against is not a type of domination; standing against implies a dyadic relationship – that there is something to stand against, something which pushes back, something to withstand. If this standing against was a dominating, a standing over, there would be nothing to preserve.

In standing against, there is that which stands and that which it stands against. That which stands is building. Building stands against in its stayingness and lastingness – building stays and building lasts.[10] In staying, building stays in the world – that is preserving the world, making it apparent. This staying and preserving is a gathering of the world. In its standing against, building gathers the earth and sky. Building is not gathering a generic earth and sky, but a specific earth and sky. Building is the making apparent, through gathering, of this earth and this sky, as opposed to another earth and another sky. This gathering is also a joining. In gathering the world, building is joining man with the world, placing man within the world. This placing is another type of preserving, a clearing of a place for man. Through this clearing, a place for man is preserved. For building to place man within the world, to join him with the world, building cannot be temporary – to stand against is to last in staying in the world, to withstand in the world. This lasting is a preserving of the place cleared for man.

This cleared place holds man to the world. To hold is to have boundaries and to have boundaries is to define the place between. The boundary is the beginning of that place, the point at which that place begins to presence.[11] Building is the forming of these boundaries – walls, floors, ceilings, and roofs – by man, the builder. Forming [poiesis and techne] is making apparent, this making apparent is through taking measure. In forming these boundaries, the builder is taking measure of his place in the world. This taking measure is manifest in the measure of the boundaries, in their dimensions, in their making. In giving dimensions, the builder works with numbers.[12] The making of walls, floors, ceilings, and roofs is giving them each a measure, but also giving measure to their relationships. The cleared place is formed by the making of its boundaries by the builder. These boundaries must be made in a way which joins man to the world. This joining is found in the relationship between the boundaries and the world, between earth and sky. In joining man to the world, the boundaries gather earth to sky and each to man as earth and sky. To gather, a set of boundaries must exist together as

10
‘It is therefore reasonable to think that the creations of man are made either with a view to his body, and that is the principle we call utility, or with a view to his soul, and that is what he seeks under the name of beauty. But, further, since he who [builds] has to deal with the rest of the world and with the movement of nature, which both tend perpetually to dissolve, corrupt, or upset what he makes, he must recognize and seek to communicate to his works a third principle, that expresses the resistance he wishes them to offer to their destiny, which is, to perish. So he seeks solidity or lastingness.’ Valery, Eupalinos, or the Architect

11
This notion of a boundary comes from the Greek word horismos [or horos] meaning definition and boundary. In ‘Posterior Analystics’ Book II 90b Aristotle makes a distinction between demonstration and definition, that definition is the beginning of demonstration. In ‘Building, Dwelling, Thinking,’ Heidegger further interprets this notion:

‘A boundary is not that at which something stops, but, as the Greeks recognized, the boundary is that from which something begins its presenting. That is why the concept is that of horismos, that is, the horizon, the boundary.’ Heidegger, Building, Dwelling Thinking

Our notion of boundary [as well as Heidegger’s] also comes from the Greek word peras meaning limit. The notion of peras in relation to number was important to the Pythagoreans:

‘...[peras] begins to play a formal role among the Pythagoreans for whom, on Aristotle’s testimony, it was, together with the unlimited, an ultimate principle of reality, standing behind even number.’ Peters, Gk. Phil. Terms

Aristotle’s testimony is found in the ‘Metaphysics’ [986a]. In our discussion, building is the limited and the world is the unlimited. Therefore building is the giving of limits, and in order to give limits, or boundaries, one must use numbers. Measure and dimensions are based on the notion of limit.

12
In ‘Eupalinos, or the Architect,’ Phadreus tells Socrates stories about the building of Eupalinos, which was made by ‘nothing other than order and numbers, that is by measuring’ [Cacciari, Eupalinos or Architecture, 111]. In building, working with measure – with order and numbers – is not abstract, as it is in mathematics, but rather is grounded in material. To work with numbers, to give dimension, is to understand the possibility of materials, their potentials, and relationships. It is giving dimension not only to a set of boundaries, but to each part and parcel which make up walls, floors, ceilings, roofs, doors and windows. In building there are no details [to steal a sentiment from Valery / Eupalinos]; that is, no part is insignificant, each and every part plays an equal role in the making of the whole.

While building is ontological, in its fundamentals it is physical, tangible, and concrete. It is the dimensioning and ordering of materials into a whole and through these materials it achieves in staying and lasting in the world. To achieve this, the builder must be a master of the qualities of materials and how to best utilize them in building. That is, he must be a master of the multifarious ways of making and composing* walls, floors, ceilings, roofs, doors, and windows. These elements are the concrete manifestation of building.

This notion of how the builder works and what he works with is very different from how many architects would describe their work. It seems that in contemporary architectural discourse the main concern is on space – that architects make space and spaces, that space is the medium in which architects work. Space is not a medium; it is not tangible. Space is infinite, it is Cartesian extension in all directions. It is an abstract notion. What is presented here is that the architect’s role is in determining and designing how a wall, floor, ceiling, roof, door, or window is; that is, how it is made, and further to bring these fundamental elements into a unique harmony.

*This word ‘composing’ brings up a similarity between building and music. In the ‘Poetics of Music’ Stravinsky, while not explicitly stating this, develops a notion that music is less about notes, and rather about the relationship between notes – that is the rhythm and cadence of the music, the distance between notes. Without this distance, a particular note would be indiscernible; every note would fall on top of another. Like building, music is developed through measure. And in both cases, this measure implies a harmony between all its pieces and there measurements. Music must be developed in key, and likewise the elements of building must be developed synchronically – that is they must be developed with the whole in mind, despite the fact that they are individually distinct.

13
In the previous note we discussed space. One could say that a better word to use in its place, and to better describe what architects do, is room and that architects make room. In Kenneth Frampton's introduction to Sverre Fehn's work, he speaks to this distinction between room and space:

'Fehn prefers to employ the word room rather than space simply because he finds that the connotations of the latter are altogether too vague. Like Louis Kahn, for whom he has affinity, Fehn feels that the word room, as opposed to the modern abstraction space, implies a sense of tactile closure.' Frampton, Thought of Construction

14
This word bold [boldy] is important here not only because of its connotations with courage, but because of the etymology of the word. In Old English, bold was the word describing a house or dwelling. The Old English byldan, to build, or building, is derived from bold. That this word, 'bold,' has come to stand for courage and bravery is intriguing. While this is purely my own interpretation, this evolution of the word does not seem to be a coincidence. Building and dwelling are the most fundamental form of the contemporary meaning of bold - fearlessness and courage, standing against and standing out. Building is the setting of oneself against the world, placing oneself in front of their finitude, in front of their mortality. Building is to stand boldy.

one. This oneness of the boundaries which form the cleared place is building.

Building, as boundary, must be solid. To bound implies solidity, but to bound also implies that there is something bounded, that something is admitted within the boundary. Building therefore must allow for this admittance, this gathering. Building gathers through openings in its boundaries, its walls, ceilings, and roofs. The builder gives these openings measure and through this measure these openings join the cleared place with the world. A cleared place, a void, is not empty, but rather has prepared itself to be filled. In this sense we can call the cleared place room[13] - in clearing a place for man room has been made for him. This making of room is the preparing to be filled. Building is the making of room for man in the world.

In its clearing, building is protective, not only in the preserving of the world, but also in its preserving of man. Building allows man to dwell, to stay. It gives room, a protected place, a place to stay, and a place man wants to stay, a place for man to be in the world.

ii.
This is what calls man to building: to find his place within the world, to find room in the world. In building we judge that position within the world, man is placed in front of his finitude, his utter insignificance and randomness. In building, man stands boldly[14] against the vastness of the world to claim his place. And even more than simply claiming his place, building is the overcoming of his finitude. Building is not random or insignificant. Building is precise. Building outlasts man. Long after he is gone, his boundaries, his building, continues to form the world of other men, continues to make room for man.

15
It is no coincidence that in both the title of this essay and Descartes statement we have swapped building for thinking. Building is one of the highest forms of thinking, or rather building is inseparable from thinking. To build is to posit an idea about the world, to say something about the world, about how the world should be for man. This idea, this statement about the world, is thinking. Building is the concrete manifestation of thinking. There is no building without thinking. Building is the forming of the world and without thinking about that world how can one possibly take part in its forming?

This thinking and building is more than just about the world, it is also about one's self in relation to that world – how one wants to stay in the world? To think about one's stay in the world is building; in building man is forming his self. Eupalinos understands this relationship between thinking and building:

‘“Phaedrus,” [Eupalinos] was saying to me, “the more I meditate [think] on my art [building], the more I practice it; the more I think and act, the more I suffer and rejoice as an architect – and the more I feel my own being with an ever surer delight and clarity.”

“I lose myself in long spells of expectation; I find myself again by the surprises I give myself; by means of the successive steps of my silence, I advance in my own edification; and I approach to such an exact correspondence between my aims and my powers, that I seem to myself to have made of the existence that was given me a sort of human handiwork.”

“By dint of [building],” he put it with a smile, “I truly believe that I have [made] myself.”’ Valery, Eupalinos, or the Architect

reading list

Aristotle
Nicomachean Ethics Book VI
Metaphysics Book I
Posterior Analytics Book II

Massimo Cacciari
Eupalinos or Architecture

Per Olaf Fjeld
Sverre Fehn: The Thought of Construction

Kenneth Frampton
Introduction, Studies in Tectonic Culture
On Reading Heidegger

Martin Heidegger
Building, Dwelling, Thinking
What is Called Thinking

Karel Kosík
Dialectics of the Concrete

David Leatherbarrow and Mohsen Mostafavi
On Weathering: The Life of Buildings in Time

Paul Valéry
Introduction to the Method of Leonardo Da Vinci
Eupalinos, or the Architect

Ludwig Wittgenstein
Tractatus-Logico Philosophicus

all greek term definitions from:
Greek Philosophical Terms: A Historical Lexicon, F.E. Peters

all english etymology from:
The Oxford Dictionary of English Etymology, C.T. Onions

Building is proving that I am, and that you are: I build, therefore I am; we build, therefore we are. In building, in the making of room, man, the builder, proves his existence not only to himself, but to all men. Unlike thinking, building is not a solitary endeavor. I think, therefore I am[15]; in this proposition I have proven nothing other than I am, that I exist. It says nothing of the world, or my relation to that world. It says nothing of other men, or my relation to those men. All men take part in building. All men experience building. In the stayingness and lastingness of building, all of mankind find their place within the world. Building is not isolated to one man, building is the relationship between all men and the world. Building is the forming of that world.

This call is the twofoldness of building. Building is at once defining the whole – the world – and at the same time defining itself – building, man [the builder], and the boundaries [and by connection the room made for man]. Building is the forming of the world, but is also the forming of each man in that world. In building man is making himself. As he makes the boundaries which preserve and gather the world and make room, and join him to that world, he is forming his relation to his world. Building holds this unique world for each man. It holds man to his world, allowing him to stay in that world, to be in that world. It continues to hold that world long after that man, that builder, is gone. He is held, that is, he continues to stay, to be, in his building.