

*THE CHOREOGRAPHY OF CONSTRUCTION*

OR

*HOW TO PERFORM A BUILDING*

by

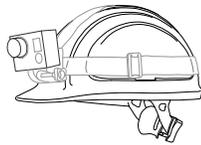
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A thesis submitted to the Faculty of Graduate and Postdoctoral Affairs in partial fulfillment of the requirements for the degree of

MASTER OF ARCHITECTURE (Professional)

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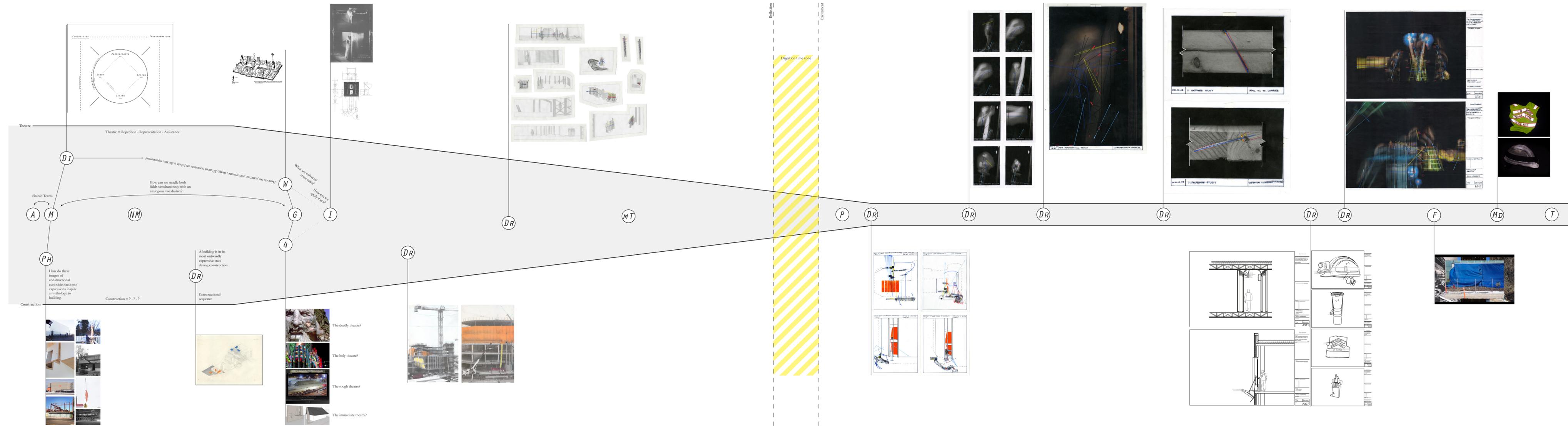
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For those distracted enough to look,  
for those curious enough to watch,  
and for those interested enough to take a photo.

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**PROJECT TIMELINE**  
 The project begins with a Gantt Chart that lays out the project's timeline. Much like a construction project, this thesis will stick to a strict timeline to ensure that the project

arrives on-time and on-budget. The project begins as an exploration on the terms theatre and construction. As the shape of the timeline suggests, the goal over the course of the project will be to proximate the two fields. The works

sprinkled within will provide the exploration necessary to do this. As things are created, they will be updated on the timeline, and near the end of the project we will be able to reflect on the timeline's intricate matrix of association.



*Fig 1:* 1305 Abbot Kinney Blvd Venice, CA 90291, USA under construction (2013)

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## ABSTRACT

Much of today's constructional process lives to serve a completion timeline. A project's design is developed towards something that can be built, and it is then constructed until substantial completion at which time it is introduced as a finished work to be evaluated, admired, occupied, or ignored.

This thesis strives to imagine a choreography of construction as a reclamation of this constructional period creating a time of further enrichment with performative expressions, a developed operative vocabulary and practicable repertoire.

Reunderstanding the constructional process as an amorphous performance allows for an observation and interaction with the project's fabric, space, and material at its most formative stage. The constructional sequences of a building have the responsibility to be dependable and functional, but now their curious nature introduces a sense of playfulness and theatricality to the project as a whole.

The choreography of construction ties an audience to the participation of performing a building by creating varying narrative experiences that further develop the mythology of the project. This in turn opens the completed project to new ontological meaning.

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*THE PROJECT'S DICTIONAL BRIDGE*

The Gantt chart outlines the beginning of this thesis as an exploration that bridges theatre with construction. To do so, we are employing a number of words that aim to shift our understanding and perspectives of our theatrical ideas and opinions nearer to those that we hold about construction. This glossary will serve as the project's dictional bridge. The glossary should be used as a constant reference for agreed terms that, across the two subjects, may at times have dual, dualistic, or shared meanings.

## Performance

Performance (generally) is an enactment. Performance is an outward projection of an expression, transformation, mythos, or curiosity from one participant to another.

## Construction

Construction (generally) is formation. Construction is a manifestation of a work of imagination using physical components, and the culmination of architectural thought.

## Participants

Participants (generally) are everyone and everything involved in a performance. This includes, but is not limited to, actors, audience, props, units of set — but must interact with the performance in some way.

## Action

Action (generally) is doing. When a participant is activated they are completing an action, or an action is being imposed upon them.

## Story

Story (generally) is a record. Story is the chronological communication of the unfolding of events of interaction, enaction, and action.

## Siting

Siting (generally) is space. It is a factor of Euclidian geometry and intangible space and is a constantly shifting and developing structure. The performance is set in a space and time. Within that performance, stages emerge. Even within those stages the nodes of movement and action create space.

## Choreography

Choreography (generally) is interaction. As the operators of performance entangle themselves, they conduct choreography as formative exploration into interaction. Choreography can be prescriptive and directed, it can be improvisational, and it can be planned and unplanned. In this thesis, choreography will also be used in the place of dramaturgy.

## Curiosities

Curiosities (generally) are questionings. They exist in different forms; possessive curiosities are developed within about another object or event. Ontological curiosities are objects that beg us to question them. Curiosities are used to spark interest and critical thinking about the work overall.

## Transformation

Transformation (generally) is a modification from one state to another. These changes are considered significant, perceivable, and may be prescribed and improvised.

## Rough (Theatre)

Rough (generally) is revelation of the raw. When sterility and perfection do not offer anything to grasp, impact is made through the dirty and real.

## Expression

Expression (generally) is a conveyance. It is the outward promotion of a tacit message, mood, or intent.

## Immediate (Theatre)

Immediate (generally) is insertion. It stakes its claim within time and presents itself as a contemporary product that is both intentional and improvised.

## Mythology

Mythology (generally) is a history. It is built around an accumulation of purpose and meaning towards the forming of an aura or legend.

## Theatron (Greek)

Theatron (generally) is a place of seeing. The Greek theatre becomes a space to make visible the drama, and watch it unfold.

## Deadly (Theatre)

Deadly (generally) is repetition. If the original intent is lost, meaning is killed through repetition. If the original concept is lost purpose is killed through repetition.

## Techne (Greek)

Techne (generally) is a form of knowing. Through craft it structures and frames the complexities of physical existence.

## Holy (Theatre)

Holy (generally) is realization of the unseen. Fleeting moments of shared consciousness make gravity visible.<sup>1</sup>

## Mudras (Sanskrit)

Mudras (generally) is a gesture. This language of movement is inclusive of speech, expression, and action, but extends the realm of communication.

### Raga (Sanskrit)

Raga (generally) is tone. The melodic framework can be compositional, or a ruling order in which to improvise.

### Tala (Sanskrit)

Tala (generally) is pace. The rhythm and time kept in traditional and realistic ways.

### Non-Photo Blue

Non-photo blue (generally) is a tone of blue that renders itself invisible in greyscale replication. Non-photo blue is used in annotative exercises to be both visible and invisible.

### Representation

Representation (generally) is a stand-in. Representation is a useful tool in the conveyance of an idea or expression when enaction is not possible, required, or advised. Its creation necessarily brings forth a dialogue between the representation and that which it intends to represent.

### Enaction

Enaction (generally) is the bringing forth of a world. Enaction is the goal of performance which associates representation with copying and a hierarchical balance/imbalance between the representation and the thing it intends to represent.

### Specification

Specification (generally) is a predetermination about what should happen within the performance. It is laid out in the drawing and expected to be completed as such.

### Speculation

Speculation (generally) is a departure from what is specified. It often occurs on the job site when a trade decides there is a better way of achieving something. It is improvisational.

### Stage Dressing

Stage Dressing (generally) are the objects that make up the set. These objects set the context and contribute in their own way to the performance.

### Prop

A prop (generally) is an item of stage dressing that is directly interacted with by another participant. It is this interaction that sets it apart from all other objects in the performance.

<sup>1</sup> Brook, *The Empty Space*.

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*THE PROJECT'S DRAMATIS PERSONAE*

Characters begin to emerge as participants as a performance is composed. Characters are the substrate for which we can express, emote, act, and transform. These characters become the absolute essential tools used to create the performance, and to convey our creative intentions. The characters must interact throughout the performance, developing relationships of all types.

These particular characters come from jobsite stereotypes. Their constructional myths have been developed through time, independent of this project, and culminate here as an aggregated character. The performance is a work of fiction and all characters in this performance are used fictitiously. Any resemblance to actual persons—living or dead—is entirely coincidental.

### The Ghost Light

The Ghost Light (generally) lights the stage when it is not in use or would otherwise not be lit. The Ghost Light casts long dramatic shadows and is intended to maintain visibility for safe work.

### The Juliet Balcony

The Juliet Balcony (generally) allows a full-height window to safely open. The Juliet Balcony, without much complexity or added special requirements creates a unique interior/exterior threshold whose definition sits somewhere between window and door. The Juliet Balcony facilitates the ruminations of forsaken love, and the conveyance of constructional directions.

### The Welder

The Welder (generally) joins two pieces of metal together. The Welder has a very expressive task which creates a blinding light that is dangerous to un-masked eyes. The Welder wears a brown hard hat.

### The Crane Operator

The Crane Operator (generally) is responsible for moving material and participants around the site. The Crane Operator has the largest reach and can carry the heaviest loads. They sit atop the site and pee in plastic water bottles. The Crane Operator wears a yellow hard hat.

### The Carpenter

The Carpenter (generally) crafts wooden constructions. In a timber building, they are responsible for a large amount of the construction. On a steel building the Carpenter smokes three packs of cigarettes a day, recounts sporting events, speculates on the weather. The Carpenter wears either a navy or yellow hard hat.

### The Mason

The Mason (generally) is a fraternal (or transition[ed/ing] fraternal) brick-layer. The Mason has professed belief in a supreme being, yet objects to the discussion of religion or politics. “He [sic] is tied to a beautiful system of morality, veiled in allegory and illustrated by symbols.”<sup>1</sup> Allegedly. The Mason wears a yellow hard hat.

### The Tin Basher

The Tin Basher (generally) crafts light-gauge steel structures. The Tin Basher always carries a supply of Band-Aids and Ozonol. The Tin Basher wears either a navy or yellow hard hat.

### The Plasterer

The Plasterer (generally) hides the work of the rest of the contractors. Their hands move with incredible smoothness and precision. Their legs are long, and yet they wear stilts. The Plasterer rarely brings a hard hat and is often issued a grey one.

### The Electrician

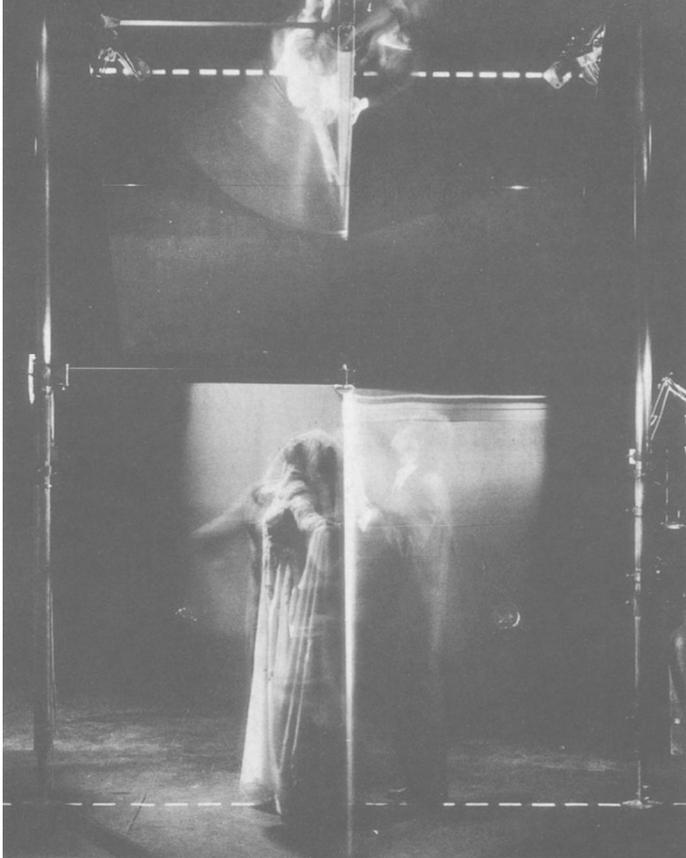
The Electrician (generally) is in charge of electrification of the site and project. The Electrician makes connections and complete circuits. They are the bringer of light. They battle with The Plumber and The Mechanical Installer for agency over mechanical chases. The Electrician wears a blue hard hat.

### The Mechanical Installer

The Mechanical Installer (generally) sets up the conditioning systems for the project. They battle with The Plumber and The Electrician for agency over mechanical chases. The Mechanical Installer wears a yellow hard hat.

### The Plumber

The Plumber (generally) says shit flows downhill. They create networks that maintain this adage. They also create networks of water supply. They battle with The Mechanical Installer and The Electrician for agency over mechanical chases. The Plumber wears a yellow hard hat.



*Fig 2: The Rotary Notary and His Hot Plate by Susan Mosakowski. Set by Elizabeth Diller and Ricardo Scofidio*

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*PERFORMANCE/PERFORMATIVE*

The Oxford English Dictionary defines performance as “the accomplishment or carrying out of something commanded or undertaken; the doing of an action or operation.”<sup>1</sup>

This definition holds performance as a response, and thus as something that is dependent on expectation, or prospect. The word performance however has also been used to describe a variety of acts, enactments, procedures, and relationships. The word has not lost meaning but, like many subjects, our understanding has shifted and implicated performance in new ways. The first step in a project that addresses a subject with such an array of meaning is to expand our current understanding of the history of its use, and to devise a web of definition in which to place the project.

Artist and author Chris Salter introduces his book *Entangled* in a very similar way, and many of his

sources need to be considered in an attempt to form this basis of understanding. “[*Entangled*] has been written to be broad and far-reaching in order to capture the resonances between different practices that may have been overlooked in their original historical contexts due to disciplinary and other constraints.”<sup>2</sup> We can consider Salter’s *Entangled* for the very reason that it seeks these resonances between fields, and perhaps discovers some forms of dissonance at the same time.

How then do we establish and/or acknowledge the true depth that performance holds? Salter describes performance as “one of the major paradigms of the 21<sup>st</sup> century.”<sup>3</sup> He references the array of fields that are speaking to the “embodiment, situatedness, presence, and materiality”<sup>4</sup> of their professions. All of these fields are borrowing from aspects of performance or performativity to activate their studies in some way.

“There are certain characteristics of performance that distinguish it from other forms of knowledge making, namely: an interest in enaction or doing, real time, dynamic processes over static objects or representations, engagement with the temporal moment of the present, embodiment and materiality, immanent experience, the effect of both human and nonhuman presence, and transmutation and reconstitution.”<sup>5</sup>

While Salter has the space in his volume to allow these types of resonances to reveal themselves, we will have to carefully define where our examination is slotted within the context of performance as it has been defined thus far. It will be a challenge to modulate between achieving the requisite depth in our examination and

staying on topic as we grasp at the endless interpretations of performance and their eventual application to architecture. In the next two chapters, these definitions will be selected in consideration for their application to our specific conversation on architecture and the constructional performance.

### Performance and Expectation

The Oxford English Dictionary uses George Chapman's translation of Homer's *Iliad* as the provenance of the word's direct use towards artistic performance. Performance is used here in association with plays, pieces of music, ceremonies, and rituals. As this shift occurs, the word retains a degree of its responsibility towards expectation and the performance itself. We can understand performance in this context as a "rendering," or "interpretation" whereby the evaluation of the performance is based on its ability to meet the viewers' expectations of what this performance should be. But, as David Byrne says, we need to broaden our idea of what culture is. Is a Japanese tea ceremony ritualistic habit, art, or perhaps something else?<sup>6</sup> The perspective of the West is likely very different from the perspectives from within Japan and these expectations change the performance and the way we interact with it.

This relies again on an expectation or a perception of how and why it should be performed. It is also interesting to see the word's use for artistic performance sits alongside behavioural fits and exaggeration, such as natural human dramatization, another form of play against expectation and perception.



Fig 3: Tom Sachs - *Tea Ceremony*

Claire Voon, "Drinking Tea with Tom Sachs," *Hyperallergic*, April 11, 2016, <https://hyperallergic.com/286702/drinking-tea-with-tom-sachs/>.

The Greek word *theatron* directly translates to “place of seeing.” Salter views this space as a work of construction, setting and craft (*techne*) that orders the synthesis of the world (*logos*). In the East, the *Natyashastra* decomposes Sanskrit performance and begins to lay out some of the mechanics of the art. The Gestural language (*Mudras*) Melodic analysis (*raga*), and the rhythmic cycles (*tala*).<sup>7</sup> Artistic performance in both of these cases are attempting to order the surreal, or reveal the latent.

These are renderings and interpretations, as previously outlined. The audience surely comes with their perceptions or expectations for these embodiments and will decide if they are convinced or not with how the performance relates to these expectations.

### Performance and the Performative

Art, as it relates to performance, started as a dematerialization of the art object. Performance, as it relates to art, attempts to proximate itself more to the body, or temporal practices.<sup>8</sup>

Around the same time, performance begins to work its way into other fields; always seeking the temporal aspects of study, or the corporeal ones. John Austin’s linguistic performative was developed out of this, with respect to creating acts or forming realities. Judith Butler then used the word performative to describe the development of our own genders through our actions, habits, and idiosyncrasies.

This shift towards the word performativity is a development of performance that in turn shifts its meaning. We can see the use of the suffix –ative which shifts towards relating to, connected with, or tending towards performance. The suffix –ity then also creates a state or condition. How do these suffixes transform the meaning of the word? Do they work in antistasis to shuffle this meaning between existence and approximation? Between enaction and representation?

This shift then helps remove the word performance from the performance itself and allows us to use it as a qualifier. This is how we talk about the performativity of a thing, and how we will describe the performativity of architecture. The performance of architecture, however, is a different conversation—one that this thesis will look to the constructive process to inform.

## Diagramming Performance

To move forward in this discussion, a diagram has emerged as a way of leveling our understandings of artistic performance and the theatre. The diagram is formed around the relationships between words and concepts which were chosen for their importance to performance and theatre. This diagram is an attempt to introduce the fundamentals of performed work, and contextualize the emerging work within the constantly revolving matrix of the performed art. The completed matrix can be used as a production tool to explore the possibilities of concept interaction and development to service the formulation of the performance.

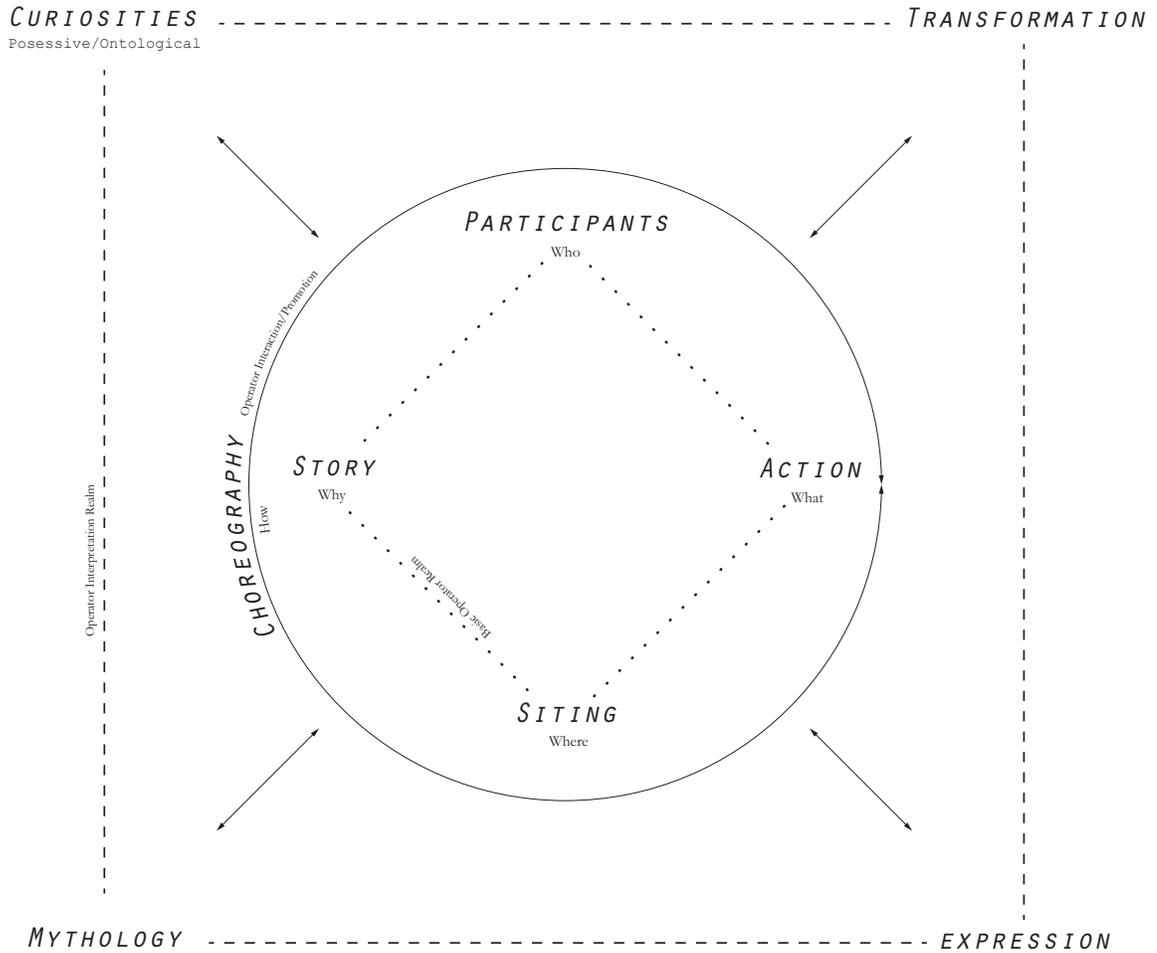


Fig 4: Performance Diagram

The diagram forms around the Basic Operator Realm. In this zone lives the words Participants, Action, Story, and Siting. These words are the basic operators and are the performance distilled to its most basic elements. These elements can be seen as correspondent with four double-U's – who, what, why, and where. The fifth double-U (when) is a component of siting and is so intrinsically tied with 'where' that apart from journalism and historical account might as well be one word.

Participants in this case are anyone or thing that is participating in the performance. These could be performers or viewers alike. The word also accommodates non-human participants and non-living subjects as a way of opening considerations of expression, language, and transformation to people normally relegated to chairs, or to objects only previously considered set-dressing. The inclusion of the audience among the participants has the effect of drawing in their response as part of the performance. This also highlights the importance of having someone to perform to as a key for the art. Including non-living objects is equally important as they often have interactions with other participants based on each other's actions and reactions. Andrew Pickering describes the interplay between the participants as a Dance of Agency. As participants act and react to each other, there is an oscillation between them and their interrelation.

When a participant is activated they are completing an action, or an action is being imposed upon them. The action gives us movement and it is choreographed to create the performance. Participants are involved, and they are witnessing what is happening. Action is the critical 'what' of the performance and is a part of the word enaction—a critical qualifier of performance that separates it from representation.

The story and its telling is why these actions are being performed, and why these participants are present. The story is the driving force behind the performance and dictates much of its intentionality. We can perhaps consider this to be a simple artistic framework because when we look at artistic performances, many

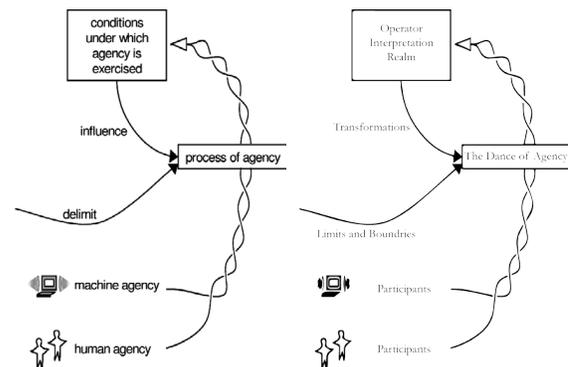


Fig 5: The Dance of Agency

Fig 6: The Dance of Agency adapted for our use.

of our stories have been told multiple times. Every year the local ballet company offers a rendering of *The Nutcracker* and every year the local paper writes a review about it. These types of stories have a high likelihood to become ‘deadly theatre’ as described by Brook,<sup>9</sup> but every rendition attempts to defeat that fate and emerge with something more. The story, however, is what binds the performances together and gives directors this space to flex their creative skill.



Fig 7: *The (Deadly) Nutcracker*

Every performance is sited, and whether or not the performance purposefully engages this siting, it remains an important operator in the performance. This siting exists in an ever-expanding vacuum of relationality that explodes outward from a section of the stage where a participant may act: to the whole stage; the theatre; the city block; the city; and beyond. It also includes less physical contexts that form around time, political and cultural climate, as well as other media.

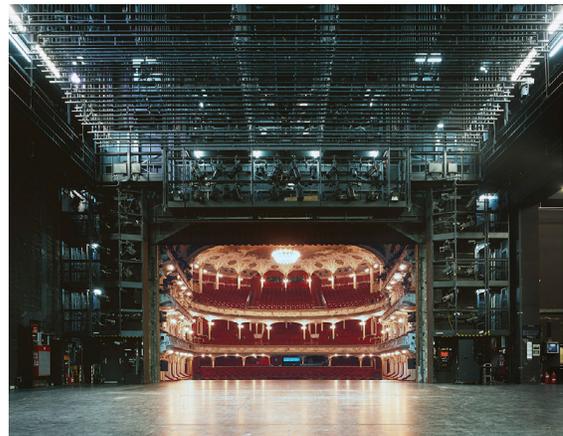


Fig 8: Klaus Frahm - Deutsches Schauspielhaus, Hamburg, Germany.

The operators within the Basic Operator Realm are in constant interaction. The often forgotten ‘double-U’ (how) is here defined as choreography. Choreography is the act of beginning to outline how these operators are working together to create the more complex operations of the performance. When a production sets out to render a performance, they ultimately seek to discover how they want to choreograph these basic operators. Choreography tumbles the basic operators and they modify each other. They are then promoted to the Operator Interpretation Realm.

The Operator Interpretation Realm is where the new enhanced operators land. These operators include, but are

not limited to, curiosities—ontological and possessive, mythologies, transformations, and expressions. These operators are more complex developments of the basic operators and they often manifest themselves as very clear combinations. For instance, a choreography of participants in siting can modify the participant into a curiosity. Perhaps, as in *Red Earth*, we have scientists colonizing Mars by raising lab-babies. This can be seen as a myth choreographed from story and siting. Further, perhaps one of our team members becomes pregnant.<sup>10</sup> This transformation to one of our participants is choreographed as a tool for the performance and further develops our understanding of the performance and the story.

Considering this story, we can see that the complex operators do not remain in the operator interpretation realm. When they are promoted, they open themselves up for interpretation and response. In this case, the Martian baby-lab myth returned to the choreographic interaction and one of our participants' actions, (impregnations) re-promoted them as a transformation coinciding with a new myth.

The diagram incites movement, and the intention is that through a performance we can start to watch the flow and development of the concepts and devices that are creating it. Likewise, throughout this thesis, the diagram can become a foundation in which to program an architectural performance. We can use the diagram to draw our own performative flow, and to test it as well.



Fig 9: One Trunk Theatre - *Red Earth*



Fig 10: One Trunk Theatre - *Red Earth*

## Creating Performance

The performance can come out of the ether, so to speak, but what is more common is for the performance's creation to be extremely laborious and thoroughly thoughtful. While we take these concepts from the diagram into our application, we need to consider the way in which we introduce them.

We can consider another diagram for this process, borrowed from landscape architect and teacher, Lawrence Halprin's *The RSVP Cycles: Creative Processes in the Human Environment*.<sup>11</sup> Similar to the diagram of terms outlined here, Halprin's *RSVP Cycles*, (or PSVR, VRSP ...) creates a tumbling space in which to form a creative process where each node has equal influence.

*R* are the resources inclusive of physical tools or materials, or contexts and existing understandings. *S* are the scores which describe the process leading to the performance. For this, musical scores come to mind, but Halprin also includes "grocery lists"<sup>12</sup> and "calendars"<sup>13</sup> as other examples. *V* is a term Halprin coins, *Valuaction*. *Valuaction* is an action-oriented process of analysis in which the performance and its parts are considered and imagined upon. *P* is performance which is not necessarily the end product and is still open to a return to the other stages.

In the way it functions, this diagram of the creative process is very enactive in the same sense that Salter regards performance. It is a real-time dynamic process that engages with the embodiment and materiality of the performance.

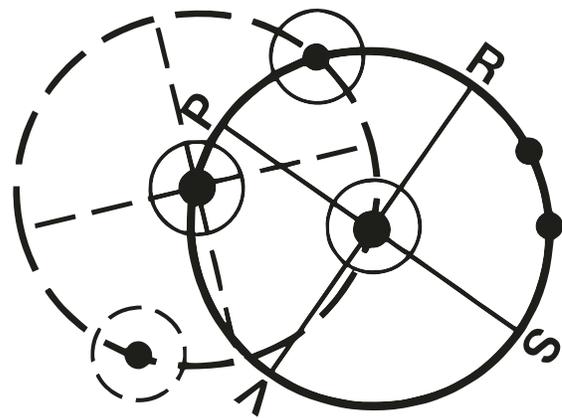


Fig 11: The RSVP Cycle

Throughout this thesis, we should closely consider performance against its counter-product, ‘representation’. To compare, representation attempts to display something by showing aspects of the thing itself. Salter considers Antonin Artaud in his critique of representation saying performance is the difference between copying life and emerging as life itself.<sup>14</sup>

One of the defining characteristics of performance, and the reason it holds so much theoretical value, is its enactive qualities and their implications. When we consider the performative, we need to consider this enaction as the separation from representation and a gesture to something real. The world of architecture employs both representation and performance, and we need to use both with careful intention as the performance begins to form.

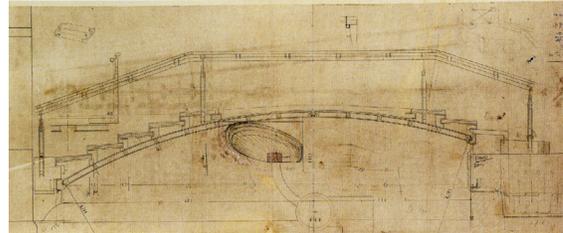


Fig 12: Representation - Section of bridge at Querini Stampalia - Carlos Scarpa



Fig 13: Performance - 1:1 Structural detail model

- 1 “Performance, n.,” in *OED Online* (Oxford University Press), accessed November 10, 2019, <http://www.oed.com/view/Entry/140783>.
- 2 Chris Salter, *Entangled: Technology and the Transformation of Performance* (Cambridge, Mass: MIT Press, 2010), xiv.
- 3 Salter, xxi.
- 4 Salter, xiii.
- 5 Salter, xxiii.
- 6 David Byrne, *How Music Works*, First Three Rivers Press edition (New York: Three Rivers Press, an imprint of the Crown Publishing Group, a division of Penguin Random House LLC, 2017), 322.
- 7 Salter, *Entangled*, xxii.
- 8 Salter, xxiv.
- 9 Peter Brook, *The Empty Space*, 6. print, Atheneum 237 (New York, N.Y: Atheneum, 1984).
- 10 One Trunk Theatre, *Red Earth*, May 2019, May 2019, <https://onetrunktheatre.com/upcoming/mars/>.
- 11 Lawrence Halprin, *The RSVP Cycles: Creative Processes in the Human Environment* (New York: G. Braziller, 1970).
- 12 Halprin.
- 13 Halprin.
- 14 Salter, *Entangled*, xiv.



Fig 14: The crane on the tip of Crazy Horse's finger.

#### 4 CONSTRUCTIONAL PERFORMANCES

As a preliminary exploration into constructional expression, we will look at 4 specific projects. We will deconstruct their performative narratives in an attempt to better understand them from the eye of an observer. These four projects use their own constructional procedures to an ontological purpose, and as a way to further root themselves in time. Each project is unique in time-scale, and architectural intention. In a way, each is choreographed for its own performance, despite not truly being intended as theatrical performances. Peter Brook says, “A man [sic] walks across this empty space whilst someone else is watching him, and this is all that is needed for an act of theatre to be engaged.”<sup>1</sup>

In *The Empty Space*, stage director Peter Brook outlines four different theatres as a way of understanding how performance supports four contrasting modalities and meanings. These four theatres are the *Deadly Theatre*, the *Holy Theatre*, the *Rough Theatre*, and the *Immediate*

*Theatre*. The *Deadly Theatre* is a product of repetitious tropes that lose their impact from over-use, and more specifically, the loss of any semblance of the original intention. The *Holy Theatre* has the chief responsibility to make visible the invisible. The *Rough Theatre* is indeed rough in construction and production, but also has a responsibility to make visible; in this case, make visible everything that is visible. Finally, the *Immediate Theatre* revolves around the principal of the ‘now.’ These four interpretations exist metaphorically as much as they do physically, and create for Brook a series of readings for the theatre.

We will adapt and extend these descriptors in the evaluation of forms of construction. Necessarily, these building sites will need to hold performative attributes such as enaction, temporal presence, and immanent experience (to name a few). As we proximate construction to this new constructional theatre, we will consider the performance of building against extant theatrical tropes as Brook describes. *The Empty Space* can provide us with an established framework of criticism and understanding and we will use Brook’s four theatres to examine and contextualize our four unique works within this established framework.

### The *Deadly Theatre* - Korczak Ziolkowski’s Crazy Horse Memorial®

The first project is the Crazy Horse Memorial® in South Dakota, USA. This project has been ongoing since 1948 as a memorial to Tȥašúnke Witkó, a Lakota warrior of the Oglala Band.<sup>2</sup> The project began as an effort of Chief

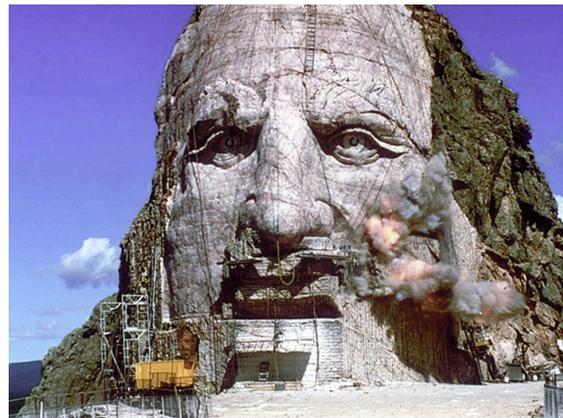


Fig 15: Crazy Horse Memorial®

Henry Standing Bear to preserve the Indigenous presence in the landscape of The United States of America, and as a counter-monument to Mount Rushmore. Through the project's history, which begins in 1939 with communications between Standing Bear and the sculptor Ziolkowski, the true benefactor is in flux. What began as pure monument to an historical figure of the Dakota people has developed into a complex enterprise that has grown and remained under the Ziolkowski family's control.<sup>3</sup> Jim Bradford is quoted in *The New Yorker* article, "It kind of felt like it started out as a dedication to the Native American people, but I think now it's a business first. All of a sudden, one non-Indian family has become millionaires off our people."<sup>4</sup>

As a whole, this tourist attraction is a product of the timescale of the project. Unlike other architectural tourism, this project is ongoing without a client, and sources all of its funding from visitors and donors. In a sense, this project is unique because it has a direct correlation between (in)completion status and audience size. Moreover, the drawn out repetitious nature of the construction leads to a project that is making money regardless of whether or not it is completed.

This is a *Deadly Theatre*. The project as it exists today, guarded by its 40 000 square foot Welcome Center, has lost the initial meaning. Much of its current representational material centres around, or unnecessarily involves, Ziolkowski and questions the memorial's true purpose. The construction process has been long drawn out and its tasks have become repetitive and devoid of any initial creative intention. The project has slipped from any

critical development into a construction site that exists solely for tourism's sake.

Brook considers the *Deadly Theatre* as a theatre that has lost the true meaning of what it is performing. He applies this to Shakespeare and many of the well-represented classics. When representing these classics honestly, “the only way to find the true path to the speaking of a word is through a process that parallels the original creative one.”<sup>5</sup> Ziolkowski was certainly impassioned by the project's initial gravity and purpose. While he was alive, he put the project before everyone, even his wife and family.<sup>6</sup> All of this has waned since his death, and the performers have lost the true intentionality behind the work.

Take, for example, the night blasts. These are explosive shows that occur throughout the year to celebrate special occasions. They are pure ceremonies—ceremonies of performance, but performances without context and meaning. Rather than orient the blasts towards any intentionality of the monument, the blasts are scheduled on the birthday of Ziolkowski and the birthday of his second wife, Ruth Ziolkowski.

“In a living theatre,” Brook writes, “we would each day approach the rehearsal putting yesterday's discoveries to the test, ready to believe that the true play has once again escaped us.”<sup>7</sup> But a performance ongoing for 80 years (50 years beyond projected timelines) has lost all sense of a living theatre, and all memory of the originally intended performance.



Fig 16: Korczak Night Blast

## The *Holy Theatre* - Antoni Gaudi's *Sagrada Familia*

The Crazy Horse Memorial® outlines the dangers of having an extended constructional performance. The danger is clear, and yet it is not damning. A long project does not need to be deadly, and a deadly performance does not need to be repetitive. Our second project is Antonio Gaudi's *Sagrada Familia*. This project has been ongoing for 136 years and has also attracted a large influx of tourism. Much like the Crazy Horse Memorial® a project of this scale constructed over a period as long as this exposes itself to the reinterpretation of the creator's design, and also to the failure to distil the same vigour and vision that drove the original project.

With the advent and exposure to new building technologies and construction techniques, we see the aforementioned risk grow.<sup>8</sup> Surely, Gaudi could not have foreseen this project being executed with the technologies that are now available, which ultimately changes the performance of the project. However, in this case, we see the use of technology being used not as a way of simplifying the construction process, but to realize some of the surreal and unconventional architectural and formal language Gaudi was projecting. This realization tactic is a strategic way of enacting an incredibly complex constructional principle.

The *Holy Theatre* is the *invisible made visible*. It is the manifestation of the qualities that escape our understandings.<sup>9</sup> This visible invisibility can be experienced in the fleeting moment of shared consciousness between participants within moments of

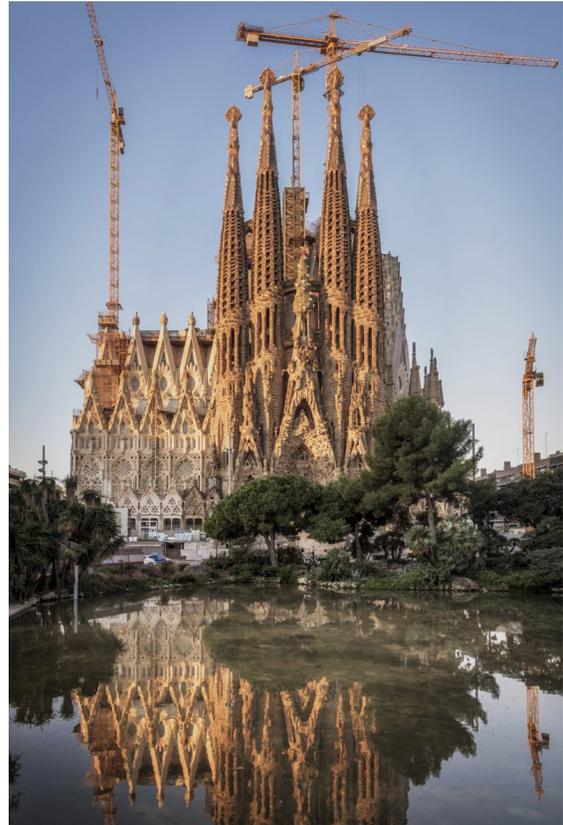


Fig 17: Cranes over Sagrada Familia

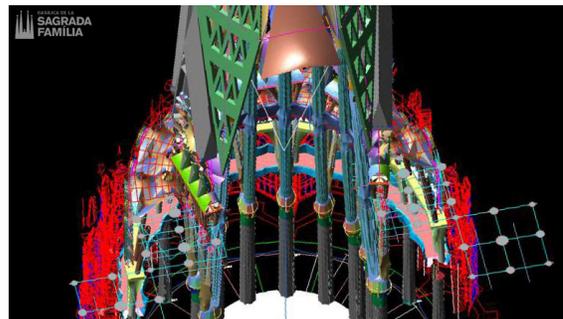


Fig 18: New Technology

gravity being made visible. This is described by Brook in a toast to William Shakespeare on what would have been his 400<sup>th</sup> birthday; “At that moment the glasses clinked ... For a breath of time the silence deepened, a touch of meaning was there – an instant later it was brushed away and forgotten,”<sup>10</sup>

There is certainly something surreal in Gaudi’s work, and this is while it is still being realized. Over a 136-year period we have witnessed an unprecedented devotion to the intention behind this grand scale and complex form. This project demonstrates to us the hidden potential in grand architectural thinking, and the possibilities for constructional technologies to reinforce the project’s intention and success. Gaudi’s manifestations of the surreal and imagined architectural forms come together to create a project with an unprecedented atmosphere. Neil Spiller points out that “every surface of the Sagrada Familia is telling a story”; Gaudi is “[attempting] to capture the essence of living systems as design inspiration.”<sup>11</sup> Can we not say that Gaudi has created a living and *Holy Theatre* of biological expression manifested through ever-changing unfinished structural elements?

### The *Rough Theatre* - Aecon’s 417 Bridge replacement at Kent, Ottawa

Our third project is the replacement of the 417 overpass at Kent Street on October 24<sup>th</sup> and 25<sup>th</sup>, 2015, in Ottawa, Canada. This project is a pure representation of the *Rough Theatre*. This performance intends to be nothing more than what it is, but does employ phenomenal amounts of planning, experience, and showiness. It is simply the



Fig 19: Ottawa’s Highway 417 overpass at Kent Street

demolition, removal, and replacement of an expressway bridge, but condensed in a 48-hour timeline.

The *Rough Theatre* is not sterile and is not perfect. And so the City of Ottawa says, “As with previous replacement projects, the MTO will have bleachers in place for bridgework buffs to watch the weekend construction. A less-chilly option is to watch progress online at the *mtobridges* website.”<sup>12</sup> The roughness is present in the brutal demolition of the existing overpass, feeling the dirt hang in the air. The roughness is also uncannily present in the choppy 480i resolution webcam feed being watched remotely, for example, in Winnipeg.

In the *Rough Theatre*, according to Brook, “obscurity is joyous,”<sup>13</sup> and “belching is prayer.”<sup>14</sup> Is this not the most comfortable any construction site could be in artistic performance? But despite the dirt and the grime, the performance is and needs to be ever more scripted and precise to ensure excitement as the last act comes to a close.

We now have bridge replacement and demolition chasers. Darrel Damude was there to watch it and exclaimed: “This was my second rapid bridge replacement viewing in Ottawa and from the bleachers AECON worked like a well oiled [sic] machine.”<sup>15</sup> As the city of Ottawa continues to replace overpasses and bridges along the 417 Highway, what keeps these performances from becoming deadly? What are the unique qualities to each bridge and how can architecture truly be repeated to death? Brook confesses in his book that anything done in defiance, such as the *Rough Theatre*, can become posture,



Fig 20: Ottawa's Highway 417 overpass at Kent Street



Fig 21: Webcam feed

and lose the very roughness it initiated. Replacing the bridge in this fashion is certainly more exciting than closing streets but what is going to keep participants like Damude coming back?

In 2019 the City of Ottawa approved a plan to acquire five local businesses adjacent to the 417 Highway near the Rideau Canal. These will be used as construction sites for more replacement bridges, and as staging areas for their performances.<sup>16</sup> If we consider Brook's works on the *Rough Theatre*, "the most vital works occur outside of the spaces made subject for them," perhaps we should look to recontextualize these adjacent bridge replacements. Rather than dispossessing local businesses, could these constructions and replacements be constructed on the canal in an even rougher theatre?

### The *Immediate Theatre* - | Gimli Cottage Proposal<sup>17</sup>

The fourth project is the project that initiated this exploration. While working at design-built, a design and construction firm in Winnipeg, Manitoba, I designed and built a cottage near Gimli, Manitoba. The preliminary design for the cottage originates in a monolithic concrete member that houses a multi-room hearth and bares the entirety of the structural loading. The intention for the project is for this strange architectural artifact to become a curiosity for curious members of the community that would watch the member being built.

Witnessing this strange artifact promotes a unique sense of curiosity around the project. The rest of the project

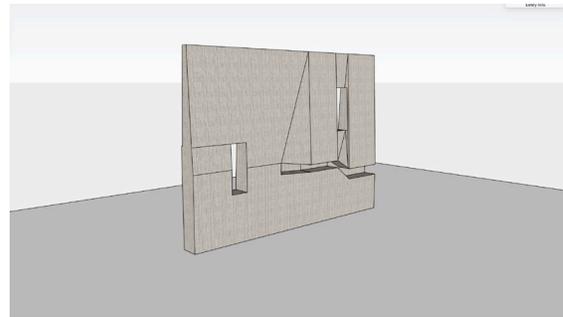


Fig 22: Foundational architectural artifact

is understood to onlookers only as it relates to this artifact. The construction of the rest of the house begins, transforming again the perception and understanding of the object, as the building components are hung off of the artifact.

Eventually the artifact will be completely covered by the rest of the building. It will still be fulfilling its role of the core structural element of the project, but its visible performance and outward expression is only visible for a short period of time.

In a sense many architectural projects that involve a skin will necessarily go through a variety of layerings where some performances and core elements are gradually concealed. The difference with the Gimli project is the crucial importance of this constructional member's performance for the whole project and the facilitation of its own obfuscation. Here, as was discussed in the *Immediate Theatre*, is a theatre in the now. It exists in time, space, and activity. In response to Brook, Rusty Guinn writes; "*Immediate Theatre* is dynamic theatre—responsive to time, responsive to venue, and most importantly, responsive to the audience."<sup>18</sup>

Participants are critical to this performance. Only the participants know the criticality of the artifact, this concrete member, as it pertains to the architecture. Their understanding will be continually changed within the time of the performance and this understanding will be constantly challenged by the amount of engagement the core element has with the rest of the architecture. By the end of the performance(s) they may have a quiet smirk knowing full-well what is under the skin of the building.

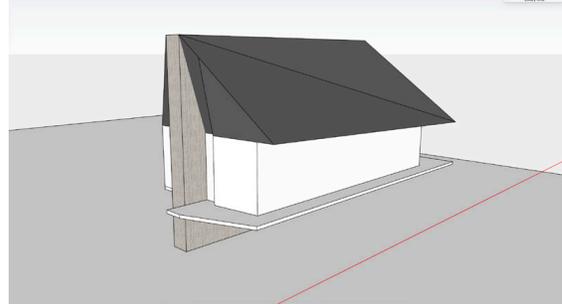


Fig 23: The cabin's form

These four projects demonstrate manners in which the act of construction variably becomes a performance to observe and interact with as a way of further understanding and situating one's self within a project as it takes form; the deep ties to audience participation, the necessary adaptability in the performance of building, and the curiosities of constructional members not entirely understood. These projects serve also as examples of the different theatres outlined in *The Empty Space*. These theatres, as Brook explains, are sometimes standing side by side, or hundreds of miles apart, and sometimes they are metaphoric, mixing together within one performance or act.<sup>19</sup> We will strive to keep these theatres in mind as we continue to evaluate construction as performance and as theatre.

- 1 Peter Brook, *The Empty Space*, 6. print, Atheneum 237 (New York, N.Y: Atheneum, 1984), 9.
- 2 Brooke Jarvis, "Who Speaks for Crazy Horse?," September 16, 2019, <https://www.newyorker.com/magazine/2019/09/23/who-speaks-for-crazy-horse>.
- 3 Jarvis.
- 4 Jarvis.
- 5 Brook, *The Empty Space*, 13.
- 6 "The History : Crazy Horse Memorial®," accessed November 18, 2019, <https://crazyhorsememorial.org/story/the-history>.
- 7 Brook, *The Empty Space*, 14.
- 8 Josep Gomez Serrano, ed., *Sagrada Familia: Gaudi's Unfinished Masterpiece : Geometry, Construction and Site* (Shenzhen: Oscar Riera Ojeda, 2014).
- 9 Brook, *The Empty Space*, 42.
- 10 Brook, 46.
- 11 Neil Spiller, "Inspiration: Sagrada Familia, Barcelona," *Building Design*, August 13, 2010, 14.
- 12 Robert Bostelaar, Ottawa Citizen Updated: October 25, and 2015, "48-Hour Queensway Closure Means Weekend Traffic Headaches | Ottawa Citizen," October 25, 2015, <https://ottawacitizen.com/news/local-news/48-hour-queensway-closure-could-snarl-weekend-traffic>.
- 13 Brook, *The Empty Space*, 68.
- 14 Brook, 71.
- 15 *Kent Street Rapid Bridge Replacement By AECON Group Inc.*, accessed November 19, 2019, <https://www.youtube.com/watch?v=Lz9Kk49gHc8>.
- 16 "'Our Business Is Built for This Area.' Construction along Highway 417 Will Mean the End for Five Local Businesses," OttawaMatters.com, accessed November 19, 2019, <https://www.ottawamatters.com/local-news/our-business-is-built-for-this-area-construction-along-highway-417-will-mean-the-end-for-five-local-businesses-1727093.2019>,
- 17 Scott Normand, *Cabin Proposal*, n.d.
- 18 "Deadly. Holy. Rough. Immediate.," Epsilon Theory, September 26, 2018, <https://www.epsilontheory.com/deadly-holy-rough-immediate/>.
- 19 Brook, *The Empty Space*, 9.



*Fig 24:* Sliding a steel beam into a renovation project.

— *AN INTRODUCTION INTO  
THE PERFORMATIVE NATURE  
OF CONSTRUCTION.*

When we think of construction from a more general perspective, we are faced with a series of qualifiers that determine the success of a project. Building projects begin with a budget, put forward by the clients, who also have a timeline that they would like to meet. These are the two most crucial metrics of a project and, as such, are consistently monitored to give peace of mind to the client. The building, at the end of the day, will either be successful in meeting these metrics, or it will not be. Along the same lines, the building will likely also be measured in its ability to meet the client's and architect's expectations for energy use, weather-proofing, comfort, longevity, and beauty. Typically, architecture must meet these basic qualifiers to be considered for critical reading which we can consider the most subjective level of qualification. At this stage the critics decide if the finished work is good or bad.

As the Oxford English Dictionary defines it, performance is a direct response to these qualifiers. “The accomplishment or carrying out of something commanded or undertaken; the doing of an action or operation.”<sup>1</sup> This definition is derived from Diodorus Siculus’ *Bibliotheca historica* in 1487 as he described the construction of a canal. We can see a direct link between this understanding of performance, and architecture’s need to fulfill our expectations of it. However, as we have outlined, our understanding of performance has shifted, and as we consider it for this thesis, we are expecting more from performance, and so too from our architecture.

If the period of the building project that we have come to understand as construction is subservient to the meeting of these metrics and qualifiers, then construction becomes a necessary process in the fulfillment of the construction documents and the making of a building. This commits construction to the state of fulfillment, only motivated by its pursuit of these qualifiers. Contrarily, we can consider many of architecture’s virtues are truly motivated by creating beautiful and meaningful work.

How then, can building reproach these architectural sensibilities, and reposition its very own artistic value? Performance art is an avenue that has much potential for expression. In *Entangled*, Chris Salter proposes many ways in which architecture can be performative. His primary venture is to seek ways that a building can move, or transform.<sup>2</sup> He also recognizes Bernard Tschumi’s movement-derived forms,<sup>3</sup> and David Leatherbarrow’s suggestion that all buildings weather and thus are performative through an implication of time.<sup>4</sup> These

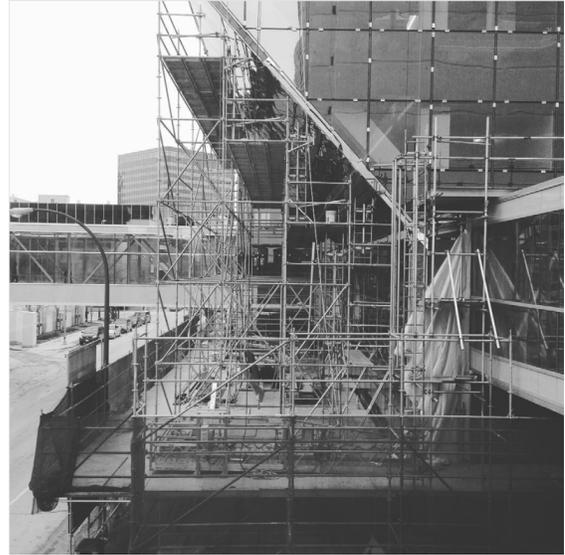


Fig 25: Scaffolding at 330 St Mary Avenue in Winnipeg, Manitoba



Fig 26: The Michigan Theatre remains within The Michigan Building in Detroit, Michigan

examples of architectural performance are incredibly enactive and thought provoking, but they ignore a chunk of the project's life that is purely enactive, and full of life.

A building is in its most comprehensively and outwardly expressive state while under construction. Can we say that, although incomplete, the architecture under construction is in some cases more beautiful and evocative than it ever will be? Can we also say that a project is more integral to the urban surroundings and site than it ever will be?

This thesis strives to reframe construction as an act of performance to reclaim this constructional period. It attempts to choreograph and frame the performative tools we have as builders so that we can begin to imagine these enactments as methods of architectural expression in the form of a practicable constructional repertoire. The thesis will also reframe a way of talking about construction from a more subjective and critical way, creating an operative vocabulary to approach performance and the theatre.

Recontextualizing the constructional process as an amorphous performance allows for an observation and interaction with the project's fabric, space, and material at this truly formative stage. The constructional sequences of a building are expected to be dependable, efficient, and functional, but now their curious natures introduce a sense of playfulness and theatricality to the project as a whole. The artistic direction of construction ties an audience to the participation of performing a building by creating varying narrative experiences that further develop the conceptual narrative of the



Fig 27: 1450 Waverly Street Winnipeg, Manitoba under construction.



Fig 28: 1450 Waverly Street Winnipeg, Manitoba completed facade

*Construction need not be committed to the act of fulfillment.*



Fig 29: Crane-controlled tarp marionette

project. This in turn opens the completed project to new ontological meaning.

In our exploration of performance and performativity, we have outlined ways of thinking about performance upon which we can build as we align it with construction and architecture. We have discussed performance and its associated expectations, we have discussed the words themselves, and we have presented a diagram which will help us codify the performative inquiry. We have also explored some more precise subjects such as the dance of agency, and performance's relationship with representation.

We can begin to construct bridges from these concepts to specific moments in a project where they manifest in building, or in the space of a project under construction. The dance of agency is what connects relationships in space. As we are designing the building, we have a dialogue with the project in which we enact our ideas, and the ideas respond to us. This dialogue is only amplified in the constructional process. As we build, the building is still inspiring us and we see the space of the project differently through the evolving stages of the performance. This is the dance of agency within construction. When we consider representation with building, we can say that up until when we break-ground, we have only been representing the building. We have produced renderings, drawings, models, videos, and virtual realities, but only now will we start to enact space. This is our first opportunity to promote architectural expression to truly enactive performances. Through these two examples, we can see how construction and performance can mesh together.



Fig 30: The drywall stage is often the most dramatic spatial shift.

*When we consider representation with building, we can say that up until when we break-ground, we have only been representing the building. Construction is our first opportunity to promote architectural expression as truly enactive performances.*

We have also explored four construction projects that are particularly performative. These are projects that beg to be watched. Some are continuous construction sites, and some are more ephemeral or hidden, but they all ask to be watched and experienced from different perspectives. Construction projects are, for the most part, very visible in the city. We have described them as outwardly expressive, and the more we understand this, the more we can see the potentiality to script these to incite more interest in our drama and meaning.

To further expand the conceptual context of the performance/performative, we must view the overtly and subtly active/interactive/enactive qualities of the four projects we have looked at. In doing so we can deconstruct the performances to their choreography, story, siting, participants, action, and how this network of intra-acting begins to enact the operative interpretations such as curiosities, transformations, mythologies, or expressions. These will be resources for the performance we propose. They are important objects of record for the performance of construction and can act as benchmarks for our performance.

From here, the thesis will attempt to apply some of the highlighted conditions. It will attempt to create very precise responses for the potentially performative spaces that have been discussed at the beginning of this work. Through drawing, and through our own performative methods, the project will attempt to not only discover and explore these potentials, but enact the responses themselves, and promote a way of scripting construction that reinforces the project's architectural



*Fig 31: Visible but concealed*

expression into the finished building. This production will ultimately circle back on itself, as an assembly of its own recorded traces, for use as resources in future performances and projects.

1 “Performance, n.,” in *OED Online* (Oxford University Press), accessed November 10, 2019, <http://www.oed.com/view/Entry/140783>.

2 Chris Salter, *Entangled: Technology and the Transformation of Performance* (Cambridge, Mass: MIT Press, 2010), 82.

3 Salter, 84.

4 Salter, 83.

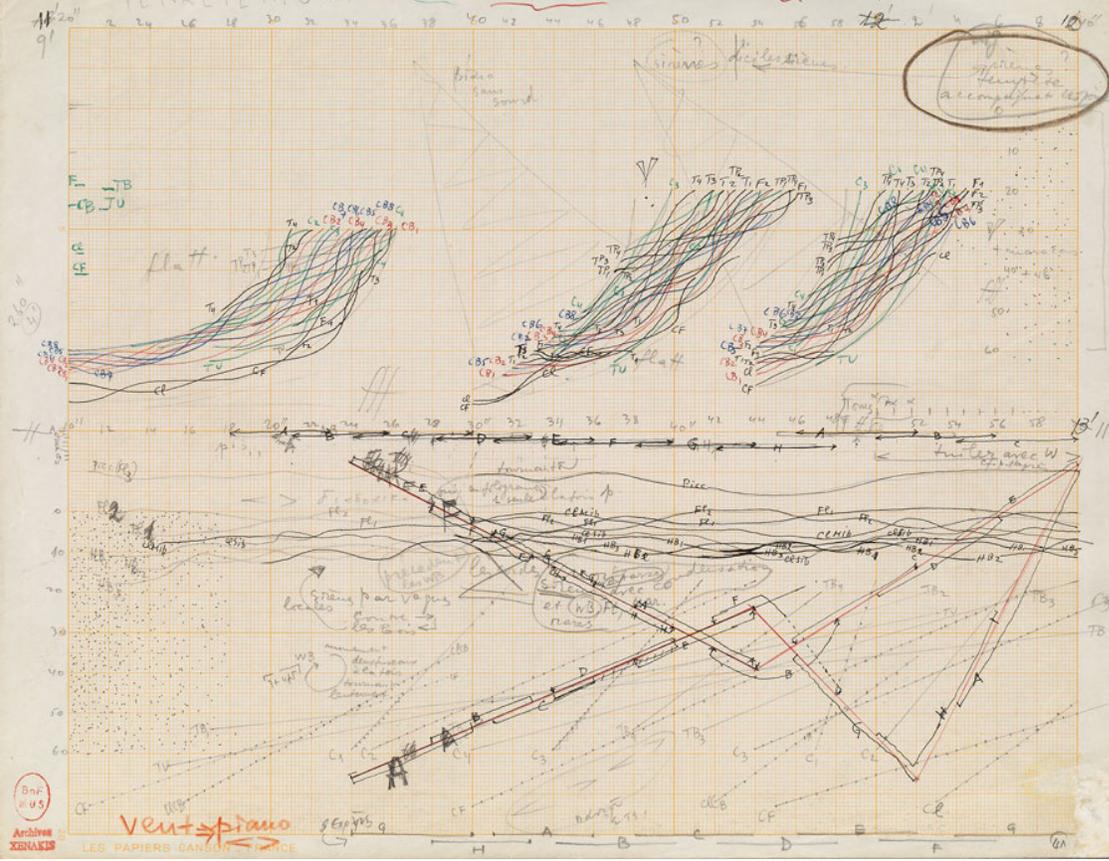


Fig 32: Iannis Xenakis notation

REPRESENTATION

The research methodology for this thesis includes a continual exploration in drawing and making. These initial explorations are a series of representation drawings that attempt to visually integrate the notion of performance into the construction site. In doing so, the intention is to develop a proprietary notation system similar to those used in dance by Merce Cunningham<sup>1</sup> and Rudolf Laban,<sup>2</sup> or in music by John Cage<sup>3</sup> and Iannis Xenakis.<sup>4</sup>

As outlined in the introduction, we can say that up until the moment we break-ground, we have only been representing the building. Renderings, drawings, models, videos, and virtual realities all produce a representation of the space we intend to build, but only when we begin building do we begin to enact space. We must closely consider performance against its counter-product, 'representation.'

Inevitably during the course of the project we will need to create visual representations to communicate the intentions of the project and unfurl the performativity discovered in construction. These visual works, though representational, can be active and performative in their own way. We will use the notational systems we create to enact construction in drawing and transition from representation to *enaction*.

If we consider *enaction* as a principal characteristic of performance, then we cannot separate the two. Amid our search for possible languages of architectural expression in the constructional theatre, we need to consider *enaction* as we explore representation. We must research ways of realizing these explorations, and evaluating the active creation of our expressive reality.

While the medium and form may change, generally, media for the project will use two strategies to distinguish themselves from simple representation. In being careful about the process of drawing, and by considering the drawing as a relic of the project, we can begin to approach the goal of *enaction*.

Firstly, these representations will always be formed around physical processes. Drawing and making by hand offer unique benefits to the project by allowing the architectural procedural to unfold at a natural pace, and ensuring thoughtful and involved project development. This pacing and level of involvement is only attainable through physical mediums. The act of laying these lines and forming these objects is what ensures that the reflective practice of drawing develops the project, and in turn develops with the project.

*“There are certain characteristics of performance that distinguish it from other forms of knowledge making, namely: an interest in enaction or doing, real time, dynamic processes over static objects or representations, engagement with the temporal moment of the present, embodiment and materiality, immanent experience, the effect of both human and nonhuman presence, and transmutation and reconstitution.”*<sup>5</sup>

*-Salter*

In *Entangled*, artist and author Chris Salter uses *enaction* as a way of describing ‘doing’ in contrast to representing. He also emphasizes the importance of “real-time and dynamic processes” that help performance pull away from “static objects or representations.” The physical act of drawing is a dynamic act that requires presence and intention. Its immediacy makes it a performative act that creates for this project a real and effective sense of parity between the performative act of drawing and the performance that is being drawn.

Out of the notion of physical drawing mediums stems the second notion of *enaction* used in these representational methods. By employing physical methods in drawing, the pieces naturally become the artifacts of the project. As they develop, their own physical properties begin to create the qualities of the drawing. The traces of the hand in the graphite, and the qualities of the ink, begin to come together as records of the physical dialogue the project has with the drawing. In this sense, neither the drawing nor the project is hierarchically more prominent; they are both the thing in itself.

Revisiting Lawrence Halprin’s *RSVP Cycles*<sup>5</sup> we can consider how our physical drawing methods can become influential in all of the stages of the creative cycle. As a resource, we look to drawings as reference. Any drawing we care to remember has an influence on our architectural catalogue that we can pull from during our creative process. As a score, the construction documents are the comprehensive drawings that tells us what we are building. While on site, these documents can be debated and, by using valuactive sketches, can be adjusted. The physical medium that we have described also represents

All drawings from this point on have been reproduced at 100% scale unless otherwise noted.

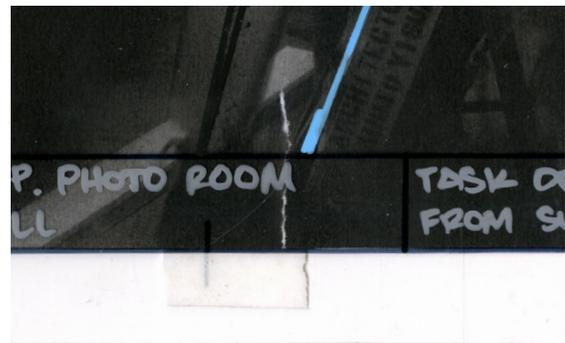


Fig 33: Traces of the hand

its own performance and the drawings become the creative process itself.

The physical act of drawing develops a feedback loop of development where the project and the drawing are pushing each other forward. This process is much like the creative process that Halprin is describing in *The RSVP Cycles*. We see a similar parity between the objects of the performance and the drawing itself becoming an object of the performance. As an artifact, the drawing is a record of the project; however, due to its own performative provenance, it is also an immediate improvisation. We are both drawing to predict the performance, and simultaneously creating the traces of the performance.

If we consider *enaction* as the principal characteristic of performance, then we cannot separate the two. In our search for possible languages of architectural expression in the constructional theatre, we need to be enactive as we explore through representation. We must, as we have said, research ways of realizing these explorations, and evaluate the active creation of our expressive reality.

## Explorations in Representation

25 Van Hull Way in Winnipeg, Manitoba, Canada was chosen as a site of initial exploration because of a personal connection. For a brief period, I worked as The Carpenter's aid on this project and saw the project in its most outwardly expressive state. As with many buildings, this is the period where all of the curiosities of the building are exposed and on-site activity is at its highest. This first drawing was made as an episodic axonometric



Fig 34: Satellite image of 25 Van Hull Way Winnipeg, MB taken on September 24th 2014

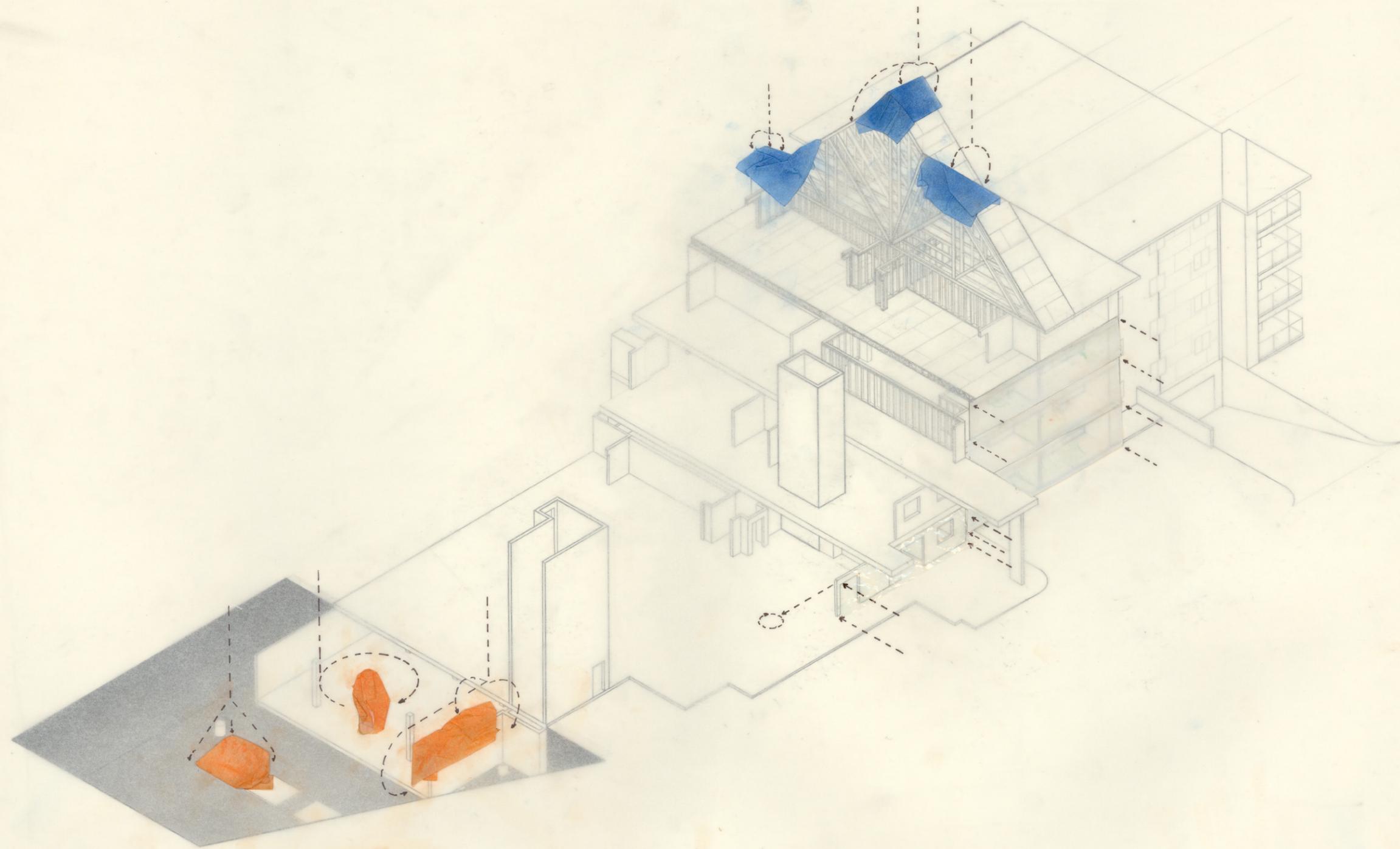


Fig 35: 25 Van  
Hull Episodic  
Axonometric.  
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scale to fit the page.

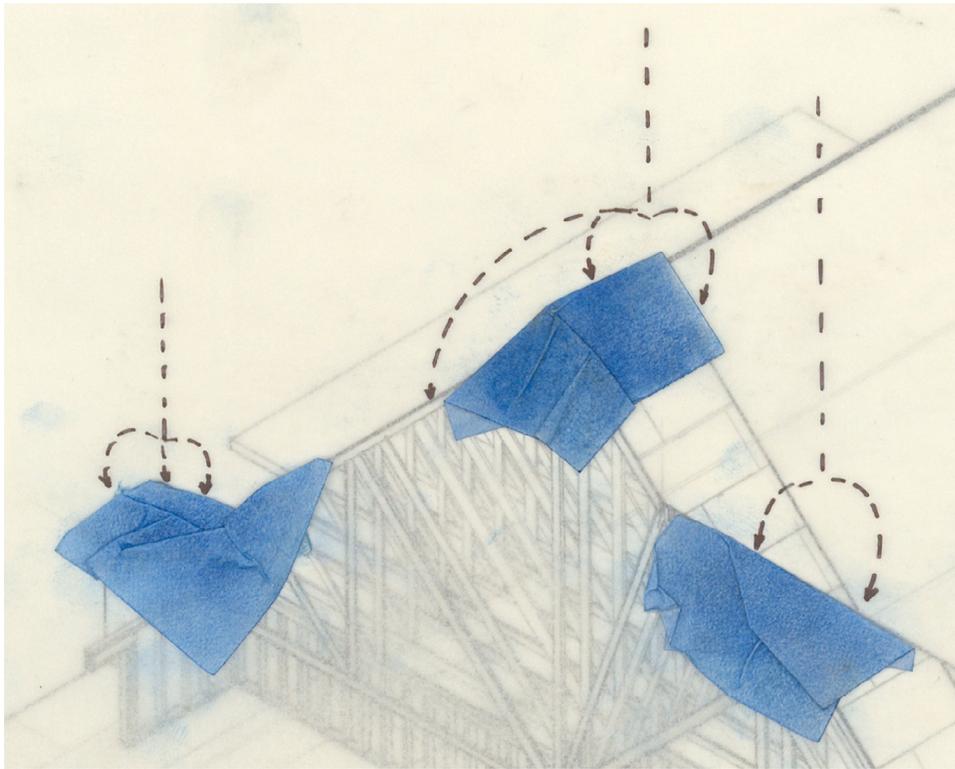


Fig 36: Blue tarp constructions

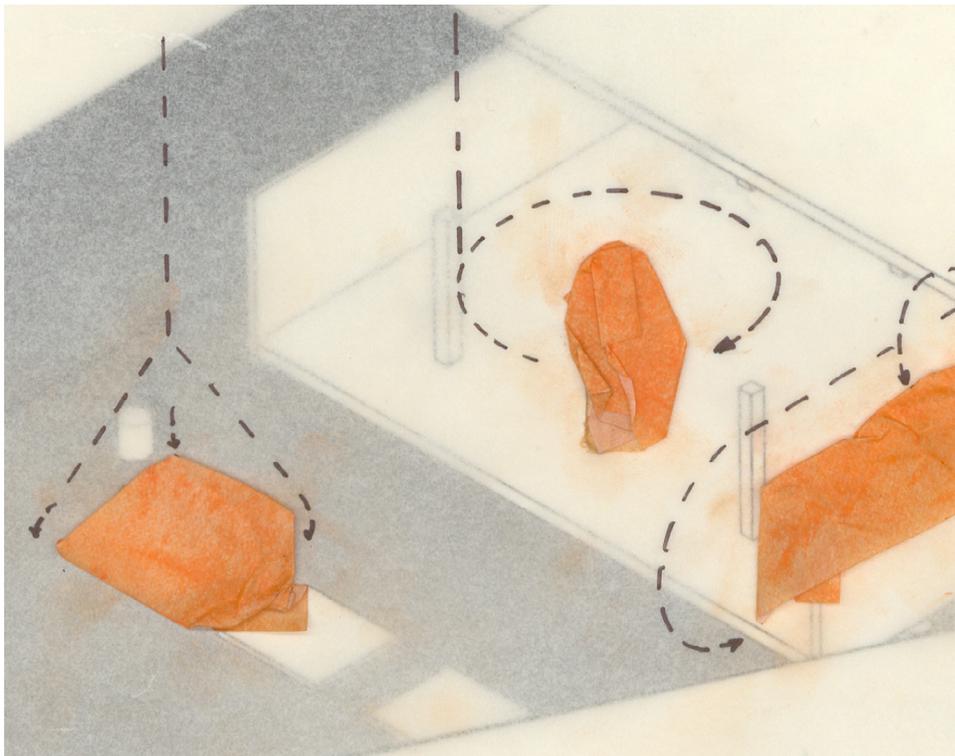


Fig 37: Orange tarp constructions

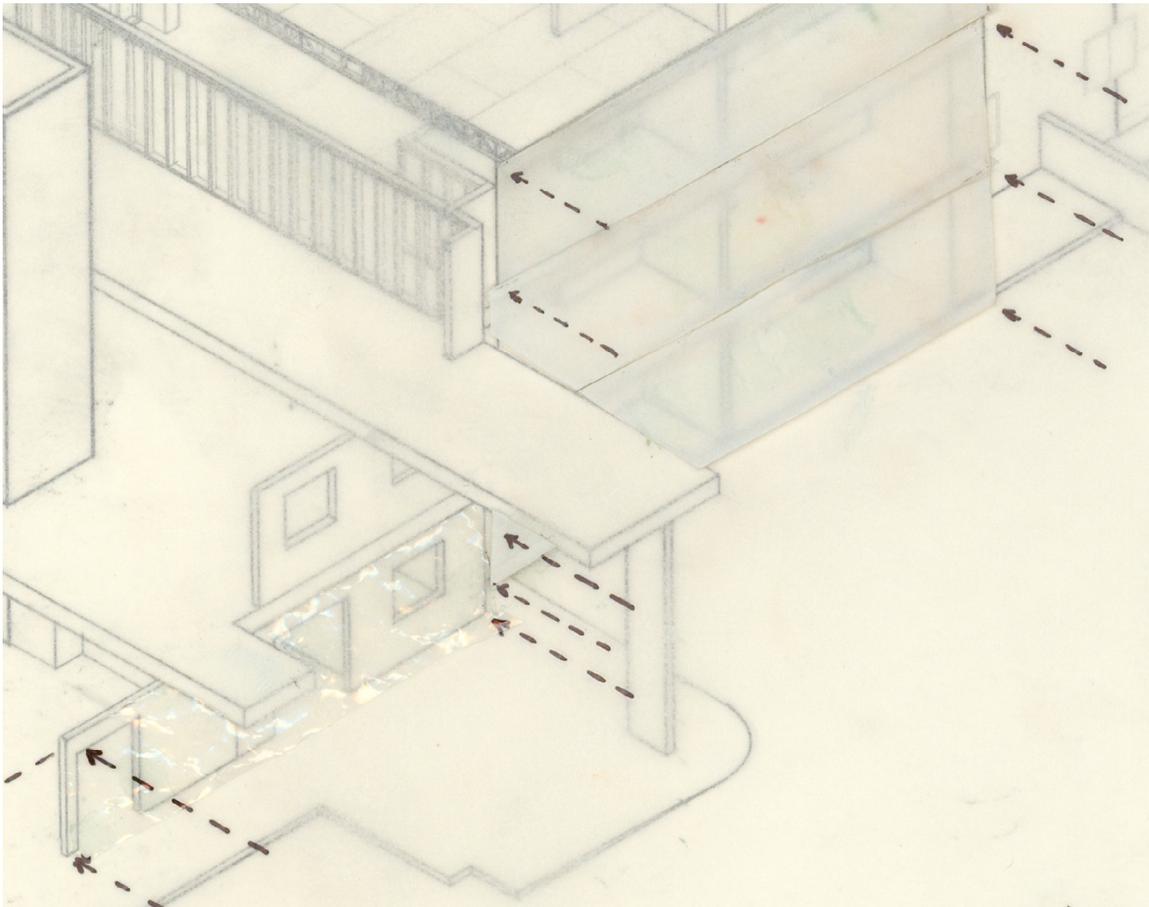


Fig 38: Clear and white tarp construction

of the building that attempts to stay the process of construction. Using intricate line-work, it represents the realistic constructions and building details; by layering the different stages of construction, the drawing captures a temporal representation of the process with extremely clear readability. To draw each architectural member is to build the structure in the space of the drawing. As we have determined, by using physical medium, this drawing becomes its own performance.

On this drawing is another layer that begins to explore choreography. Here, we are choreographing the placement of tarps. The annotated arrows represent the actions clearly, and begin to hint at a certain

*The orange tarps retain heat.*

*The blue tarps repel water.*

*The clear tarps block wind.*

*The white tarps limit views.*

movement. This notation isn't yet encompassing all of the intricate actions that come together to become an installation procedure, but it is starting to draw attention to performative acts within the construction that are often overlooked. The tarps in the space of the drawing are constructed out of scaled pieces, folded to wrap themselves around the drawn building. These are active pieces in the drawing. By physically modeling the tarps themselves and folding them in the space of the drawing we elevate the tarp to being a more involved participant of the drawing, and a pivotal piece in the performance of the drawing. The embodiment and materiality of the drawn tarp is a request for a deeper reading of the tarp as a participant in the constructional performance.

The next performance is the Nichol Building on the Carleton University campus. The project, fortunately, is located close to the architecture building, and benefits from high audience attendance and engagement. Two photos (A004 and A005) taken from opposite sides of the building begin to pull out some of the dominant qualities of the construction site. Unlike the previous drawings these examine the performance frozen in time, but with the texture and candor of a photograph.

The drawing highlights the qualities of this performance at the time of record. Quite visibly, pastel is used to reintroduce the colours of the performance into the black and white photo. The colours of the performance are strictly emphatic. Like the orange tarp, they are hyper-present in the performance and should be in the drawing as well. These colours offer an air of curiosity to the objects that hold them.



Fig 39: Animation of disposal



Fig 40: A004 Nichol Building from Shawn Hayley's office in the Health Sciences Building. Reproduced at 41% scale to fit the page.

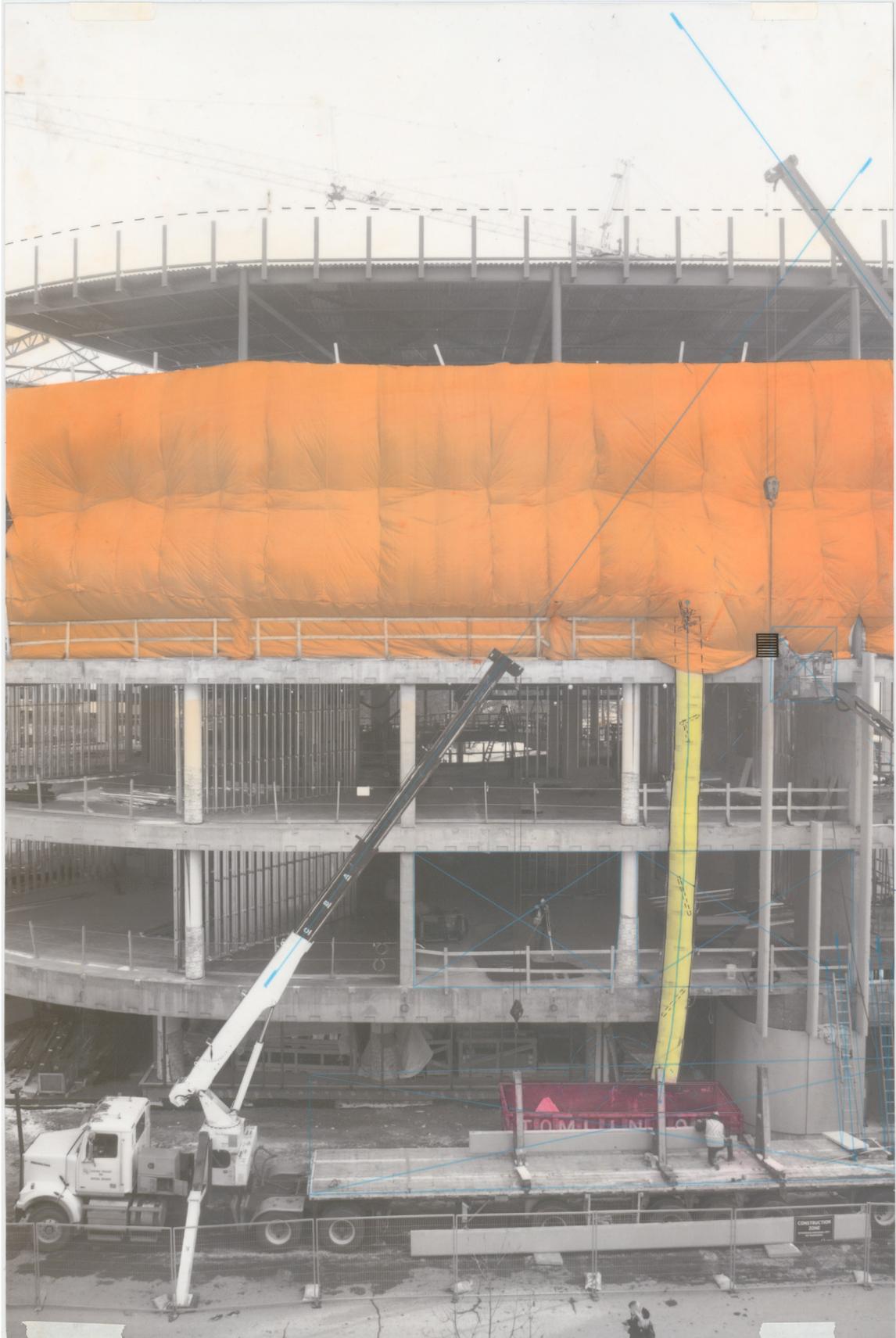


Fig 41: A005 Nichol Building from J S Whight's office in the Engineering Building. Reproduced at 41% scale to fit the page.

Other curious forms are also highlighted within the drawing by outlining their formal presence. Strange structural members that are emphatically sized, concrete projections that once started as tall monoliths, and unidentifiable forms are speculated upon and given a role as participants. This speculation plays its own role in creating the drawing and the constructional performance itself. Speculation on these objects opens the performance to the influence of otherwise passive contributors. In the construction, trades that are made to improvise are leaving their mark on the project through their speculation.

Facilities of movement are also considered here. These are inclusive of cranes, lifts, and ladders. In the drawing they are highlighted by non-photo blue coloured pencils tracing the perceived extents of their extension. These participants are important to consider because they have an unparalleled capacity to modify the limits of the performance. They have the unique ability to lift excessively heavy objects, to provide reach to remote areas, and to transform the human limits of movement.

One unique annotation in the drawings that will continue to be an element throughout the project is The Welder's curtain. The Welder has a uniquely hazardous job that implicates the audience to the performance. As dazzling as his work is, it can also damage the retinas of other participants. The drawing includes a curtain to shade the arc and protect the performance's viewer. Other annotations are also included that hint to the performance, such as the outline of the final extents of the building, alignment marks for supplementary items



Fig 42: An unidentifiable participant



Fig 43: The tarp, the garbage chute, The Welder, and their curtain

used to construct the drawings, and the beginnings of some notations of movement in the tumbling garbage.

Callouts are also present in the drawing, rendered in non-photo blue pencil. These are the performance's 'stages'; places within the drawing where human participants are acting. The stages are extracted from the drawing and become their own relics of performance. They are then scaled to equalize the corporeal size of the participant and rendered to distil the scene from the context of the photograph, leaving only stage dressing, participants, and props. In these stages we are developing the notation system for use in constructional performance.

### Notating Constructional Performance

These callouts or 'stages' are where most of the action occurs. The notation system needs to break down the participants' actions and expressions in systematic and scriptable ways. However, as we have used the frozen moment of a photograph as a method of close-reading within the performance, we must re-introduce the temporal context of the performance to consider these actions and expressions. From these moments we must again speculate on these actions and expressions and how they develop into the performance.

A041, for example, is taken from the photograph as an image of three people standing near two lifts of plywood. The depicted speculation is that this is a smoke break where two contractors are leaning against one lift of plywood and talking about last night's hockey game. A



Fig 45: Detail of stage A054



Fig 44: Detail of stage A046

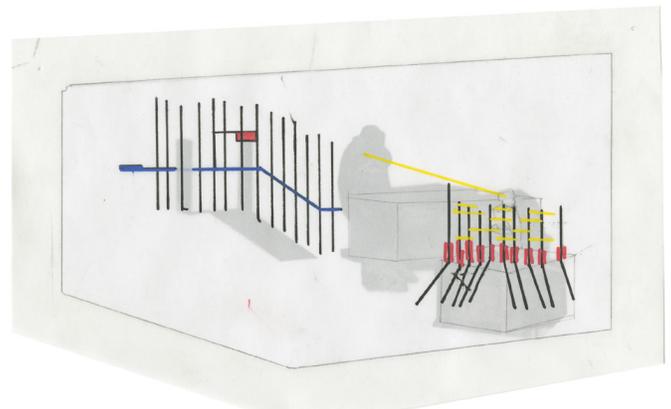


Fig 46: Stage A041. Reproduced at 51% scale to fit the page.

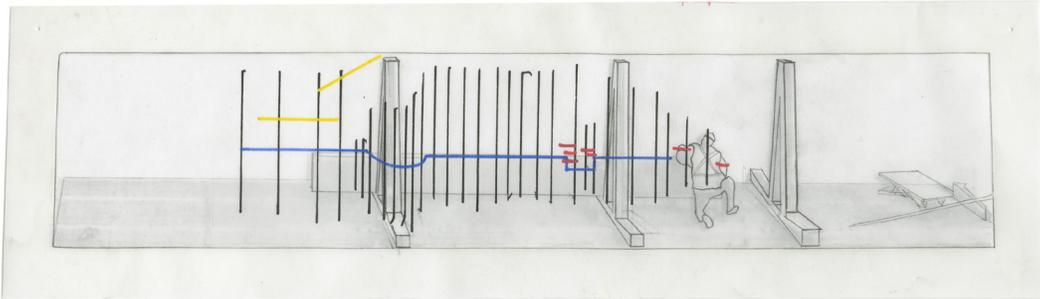


Fig 47: Stage A051. Reproduced at 51% scale to fit the page.

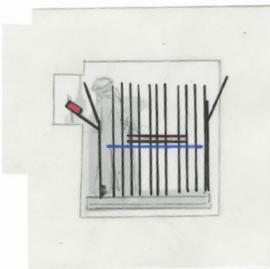


Fig 48: Stage A056. Reproduced at 51% scale to fit the page.

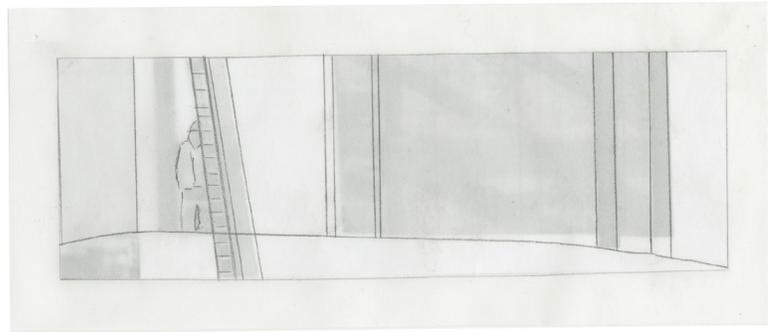


Fig 49: Stage A044. Reproduced at 51% scale to fit the page.

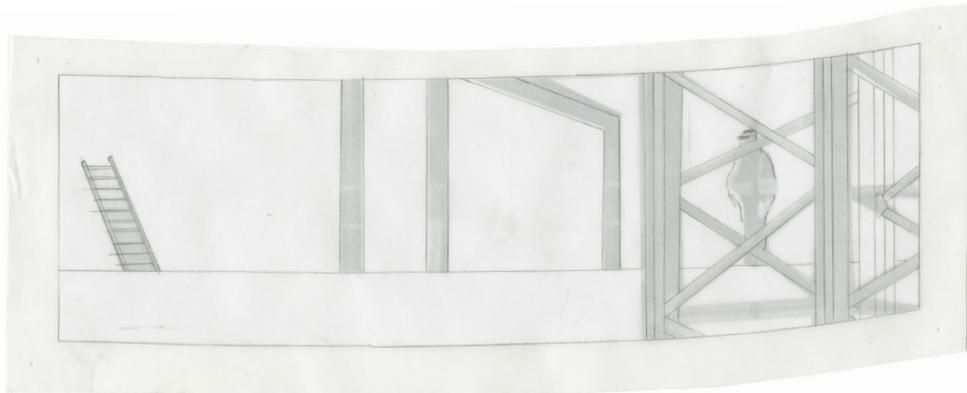


Fig 50: Stage A045. Reproduced at 51% scale to fit the page.

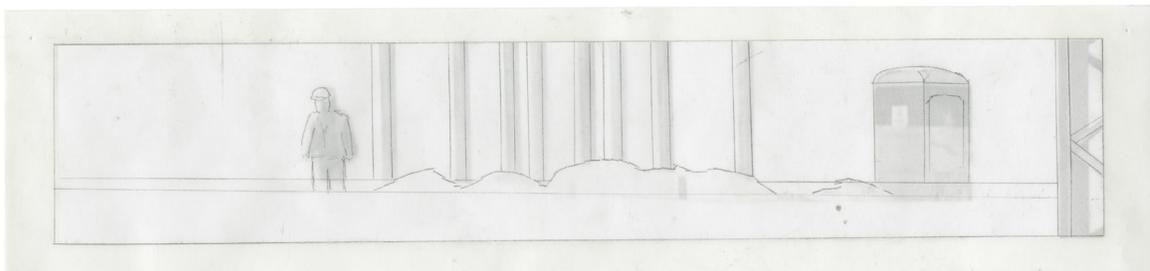


Fig 51: Stage A043. Reproduced at 51% scale to fit the page.

third contractor yells to them, “get back to work,” and exits stage right.

A051 captures a contractor rigging a crane to a precast concrete fin that sits on the bed of a truck. We speculate, based on the fact that the other side of the fin has also been prepared, that they walked on top of the truck bed from one end of the fin to the other. We also speculate the participant’s physical interaction with the piece and communication with The Crane Operator who is off stage right.

By implementing the notation system, three basic categories can be pulled from action and expression. Movement, grasp, and communication. These three are used to enact the building. In the drawing of the stages, we codify these with coloured notations. Movement is drawn in blue, grasp is drawn in red, and communication in yellow. The body in space is drawn in black, dynamically showing any relevant articulation depending on the scale of the drawing.

In A054 the water on the ground is a participant—its own body is drawn in black. Its form shrinks as it falls over the edge. The black lines in this case are helping the blue convey pacing and a more intricate specification of form. In A047 The Crane Operator is static, but his arms and his grasp are conducting the performance off stage. While much may be happening off stage, this is the performance on this particular stage. A052 and A053 tell the story of climbing a ladder; as the participant gets higher, their grasp increases in amplitude due to a fear of heights, and the red lines grow in size.

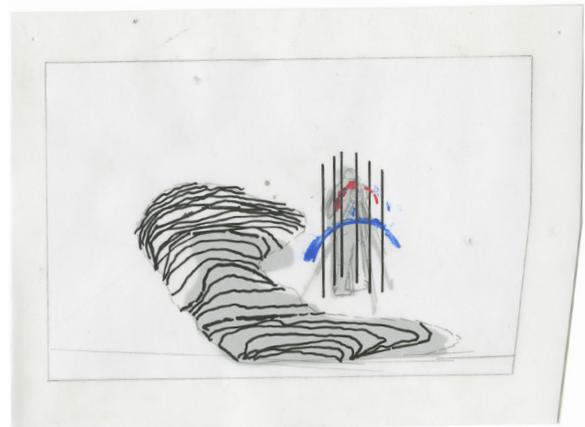


Fig 52: Stage A054. Reproduced at 51% scale to fit the page.

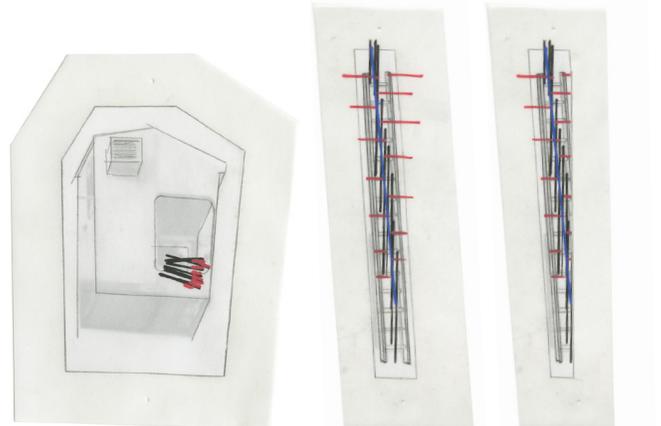


Fig 53: Stage A047. Reproduced at 51% scale to fit the page.

Fig 54: Stage A052. Reproduced at 51% scale to fit the page.

Fig 55: Stage A053. Reproduced at 51% scale to fit the page.

A042 captures three participants. One is rolling out and tarring a water membrane, telling their partner to go get a fresh roll. This partner, while turning around, is startled by an unidentifiable object from the photography tracing process. In this moment, though the two participants do not talk, there is an expression being performed. The form is almost human-shaped and for that moment is extremely present and active.

The notation system has a simple way of communicating action and expression. By implementing it into these fragmented moments, we have created a sense of performance and enactment. The root contributors' movement, communication, and grasp have a complex interaction with one another that culminate in forming a scene. Further, they can be scaled and drawn for many different constructional performances.

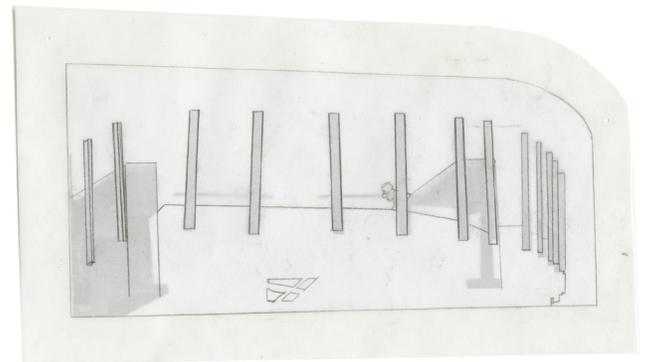


Fig 57: Stage A046. Reproduced at 51% scale to fit the page.

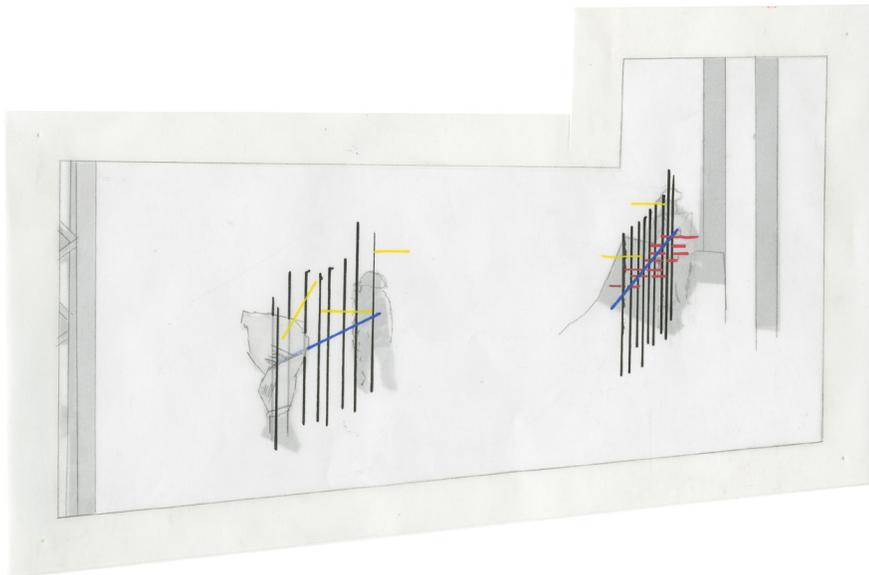


Fig 56: Stage A042. Reproduced at 51% scale to fit the page.

## Notation as Record

Scaling the notation up, we can look at larger acts within the performance. These acts may include multiple contractors working within their own stages. To precisely record this, a new process was adopted where real-time notations could record the actual events unfolding on site. By using transparency over windows, the drawings could be developed while the performance was ongoing. These drawings are at a larger scale than the stages initially suggested. They allow for a reading of these acts that accommodates more context of the site.

The first drawing is titled *A101 Installation of Precast Concrete Fins*. Essentially this act is a combination of scenes A051 and A056, but is set on the opposite side of the building. The crane spins in 360 degree rotations to pick up concrete fins. A second crane helps rotate the piece and then is disconnected, allowing the fin to be carried to the area where it is to be installed. In three teams of two, The Welders then install the piece, communicating with one another and with The Crane Operator. The middle team uses a scissor lift.

The second drawing is titled *A102 IGU Installation*. Glazing Installers prepare the opening as the crane is affixed to the pane of glass. The crane's grip here must be delicate. The crane lifts the glass straight up allowing two contractors with tag lines to gain control of the unit. The IGU is then taken into position where the carpenter uses a 2x4 to achieve the correct pitch on the unit to insert it into the opening. The tag line operators smoke a cigarette and prepare for the next unit. Two Glazing



Fig 58: Drawing in real-time

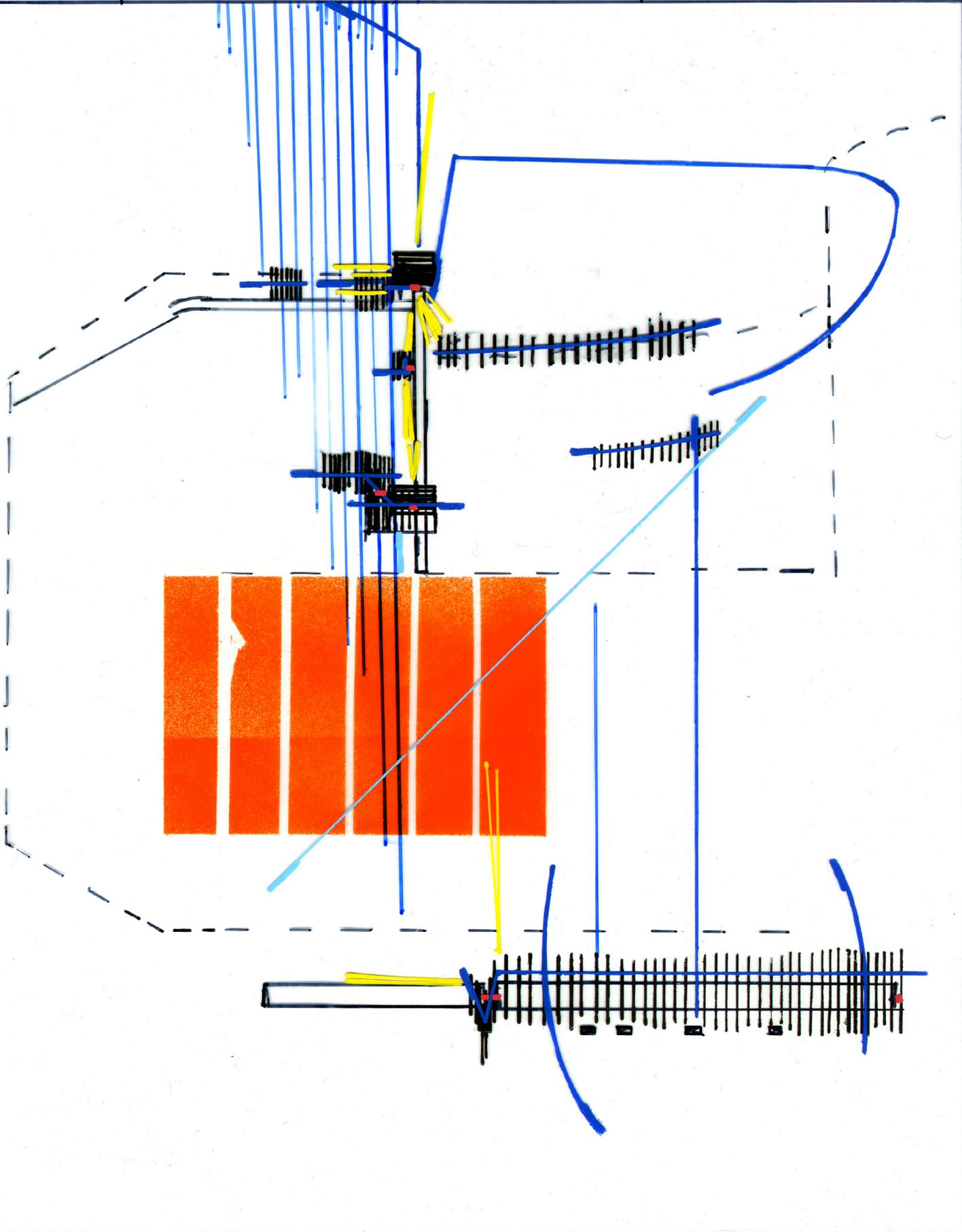


Fig 59: The drawn welder's curtain providing real-world protection

2020.01.13  
12:15

HEALTH SCIENCES BUILDING FLOOR 3

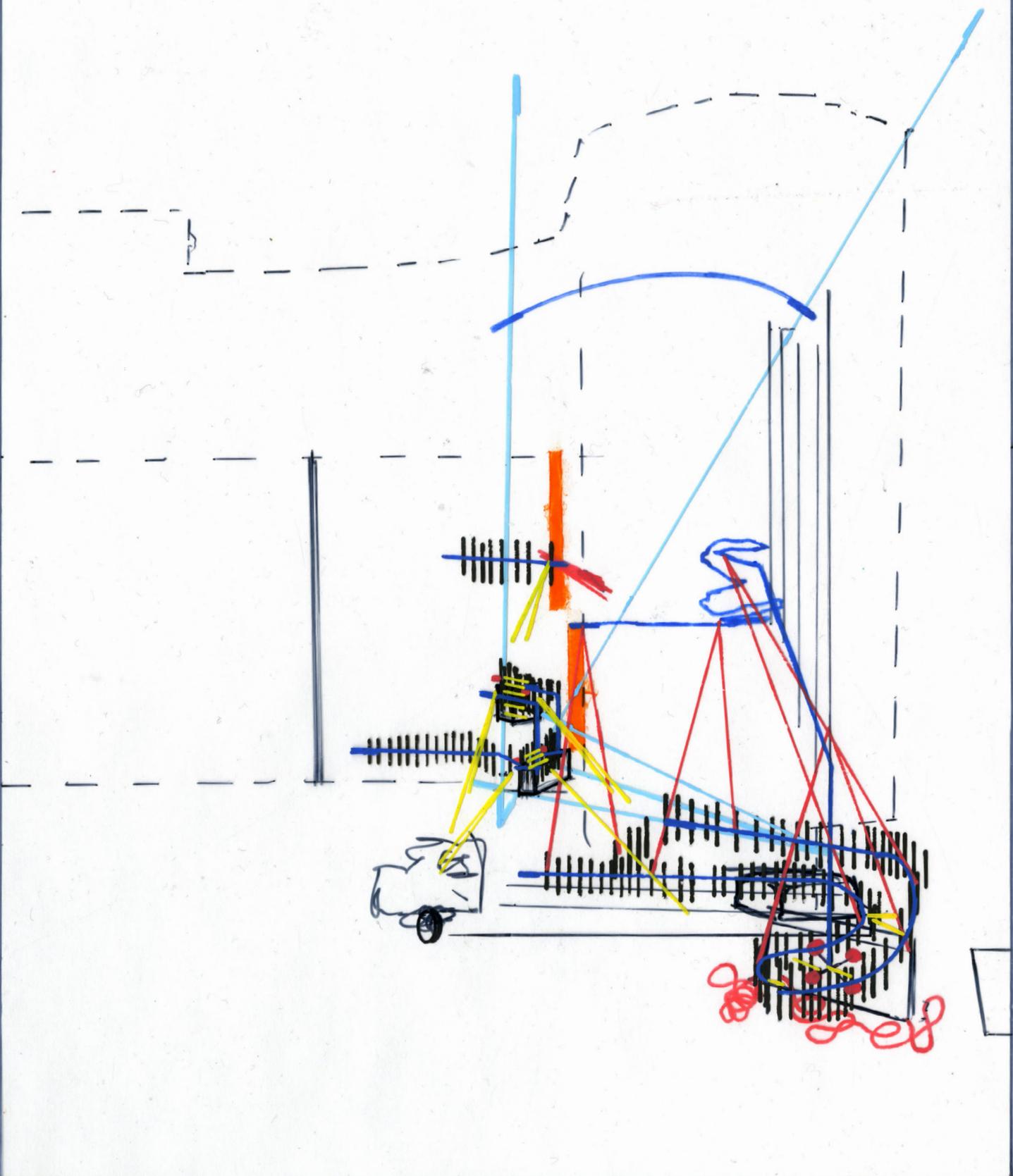
INSTALLATION OF  
PRE-CAST CONCRETE FINIS.



2020.02.04  
11:35

HEALTH SCIENCES BUILDING FLOOR 3

IGU INSTALLATION



Installers in an articulating basket fix the unit in place with glazing stops. The suction hand returns to the yard.

This third act is in two parts. They are titled *A103 Moving of a Prefab Stair Set* and *A104 Installation of a Prefab Stair Set*. As we near the end of the workday, a telescopic handler pulls out of an aperture and begins to clumsily move a stair set around the area getting ready to install it. In a feat of improvisation, The Operator of the handler uses a drawing set as a curtain to keep the sun out of their eyes. The handler then carefully sends the stair set through the doorway into the stairwell. The next day a prefab stair set sits inside the bottom of the stairwell. A telescopic handler reaches into the well and its chain grasp lifts the stair set. The Welders direct the handler and get the stairs into place. Using clamps and shims The Welders more precisely align the stair to its neighbouring piece and affix it with bolts. The Welder then permanently installs it.

Employing the notation system at different scales reveals new ways that it can reveal latent actions and expressions or ways in which it can re-contextualize the actions and expressions we may have already been aware of. The system changes our perception about what communication is on a jobsite and what grasp is.

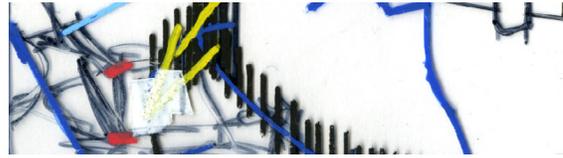
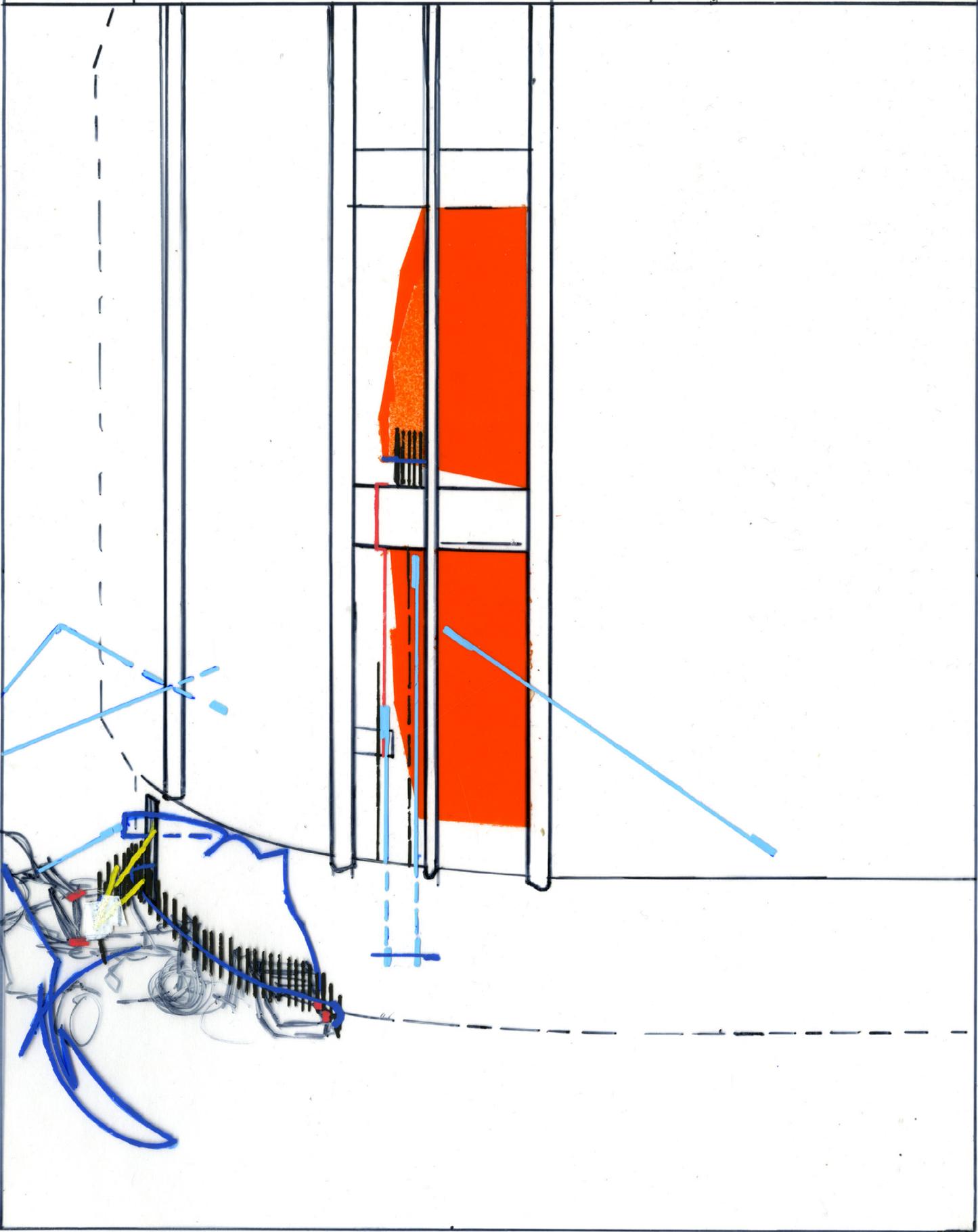


Fig 62: Detail of A103 Moving of a pre-fab star set. The use of a drawing as a sun shade.

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13:25

5TH FLOOR BRIDGE TO ENGINEERING

MOVING OF A PRE-FAB  
STAIR SET.

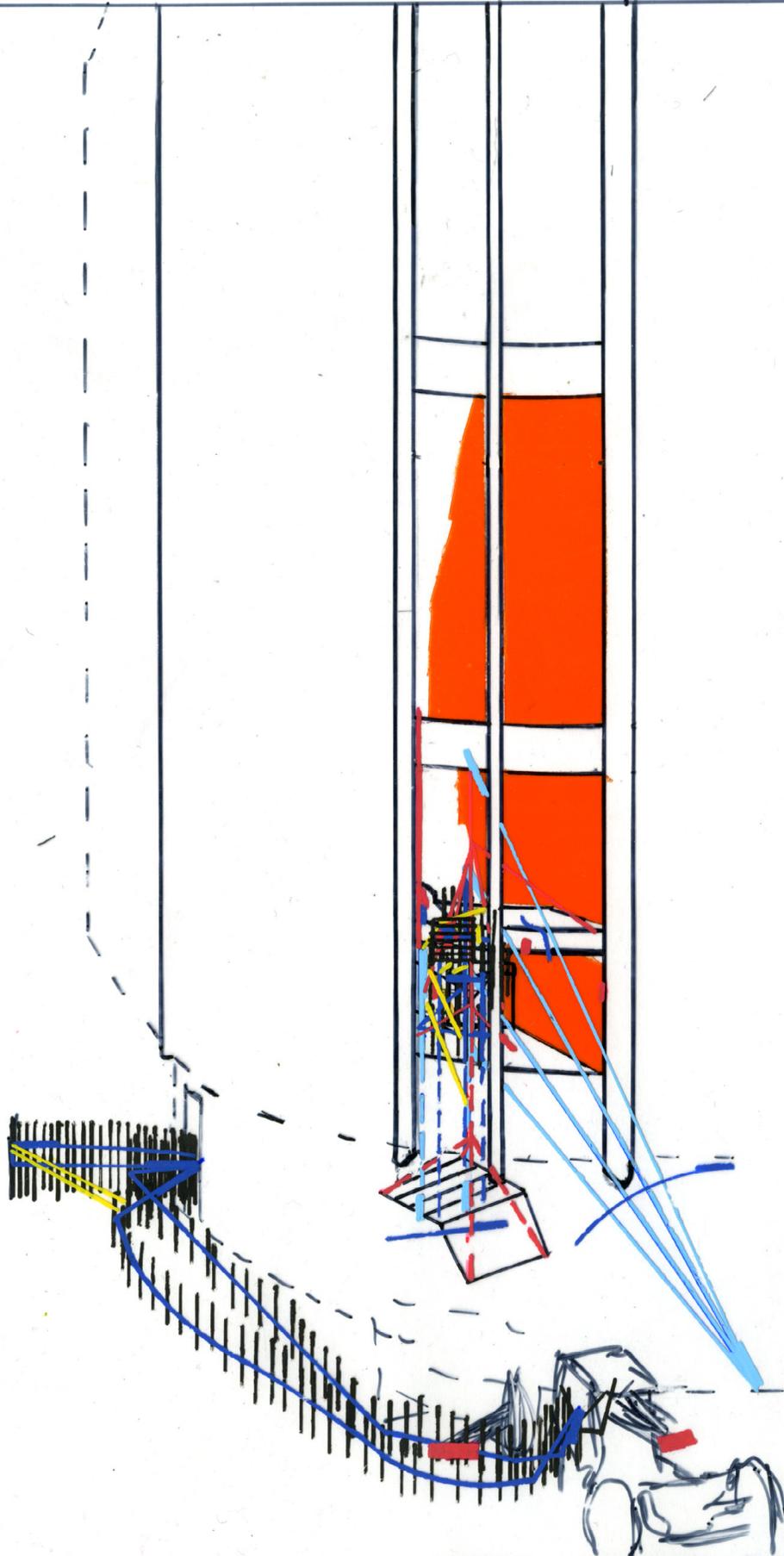


220.02.20

5<sup>TH</sup> FLOOR BRIDGE TO ENGINEERING

INSTALLATION OF PRE-FAB  
STAIRSET.

12:40



## Notation as Script

Specific characters started to emerge from the acts at the Nichol Building. The Welder, The Crane Operator, and The Carpenter all played pivotal roles in these acts. We can also use the notational system to score their roles at a human scale.

We can script the procedural of building a wall by imagining the installation of the layers of this assembly. It begins with the delivery of the task from The Superintendent, and progresses through framing, sheathing, the installation of The Ghost Lights, insulating, and finishes with a break for a cigarette.

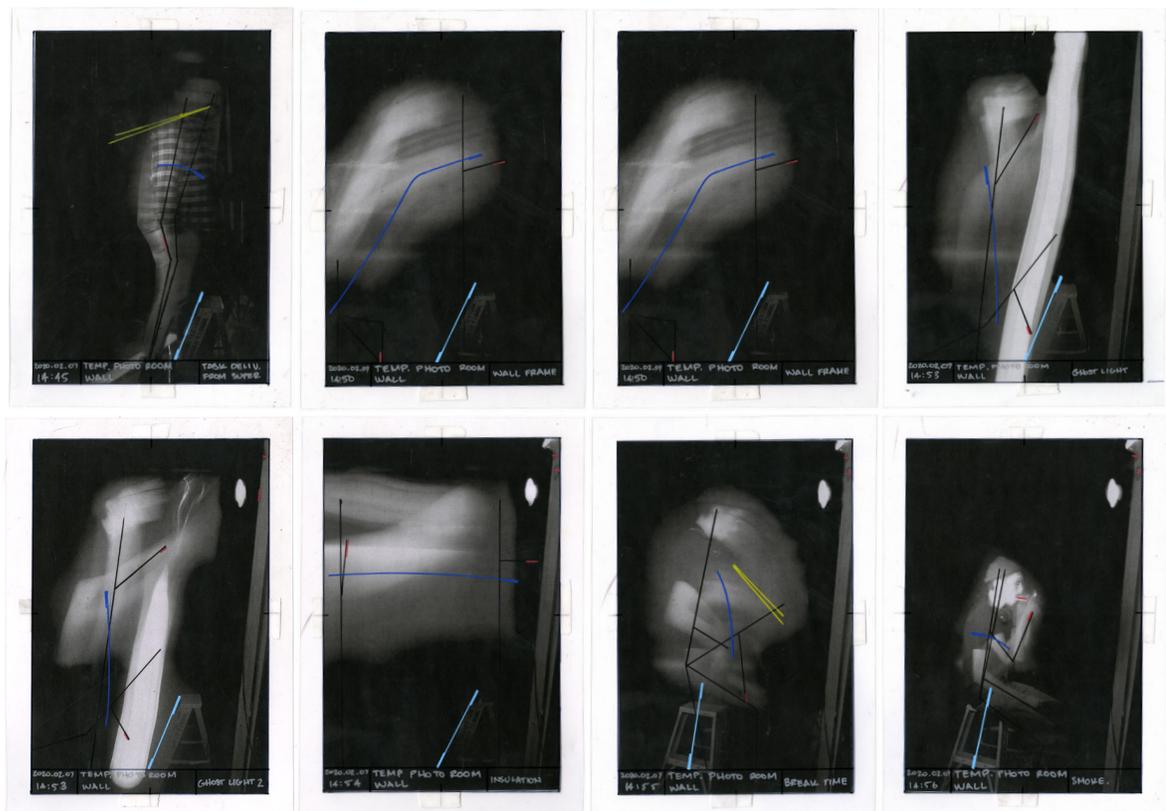




Fig 65: Task Delivery from Super

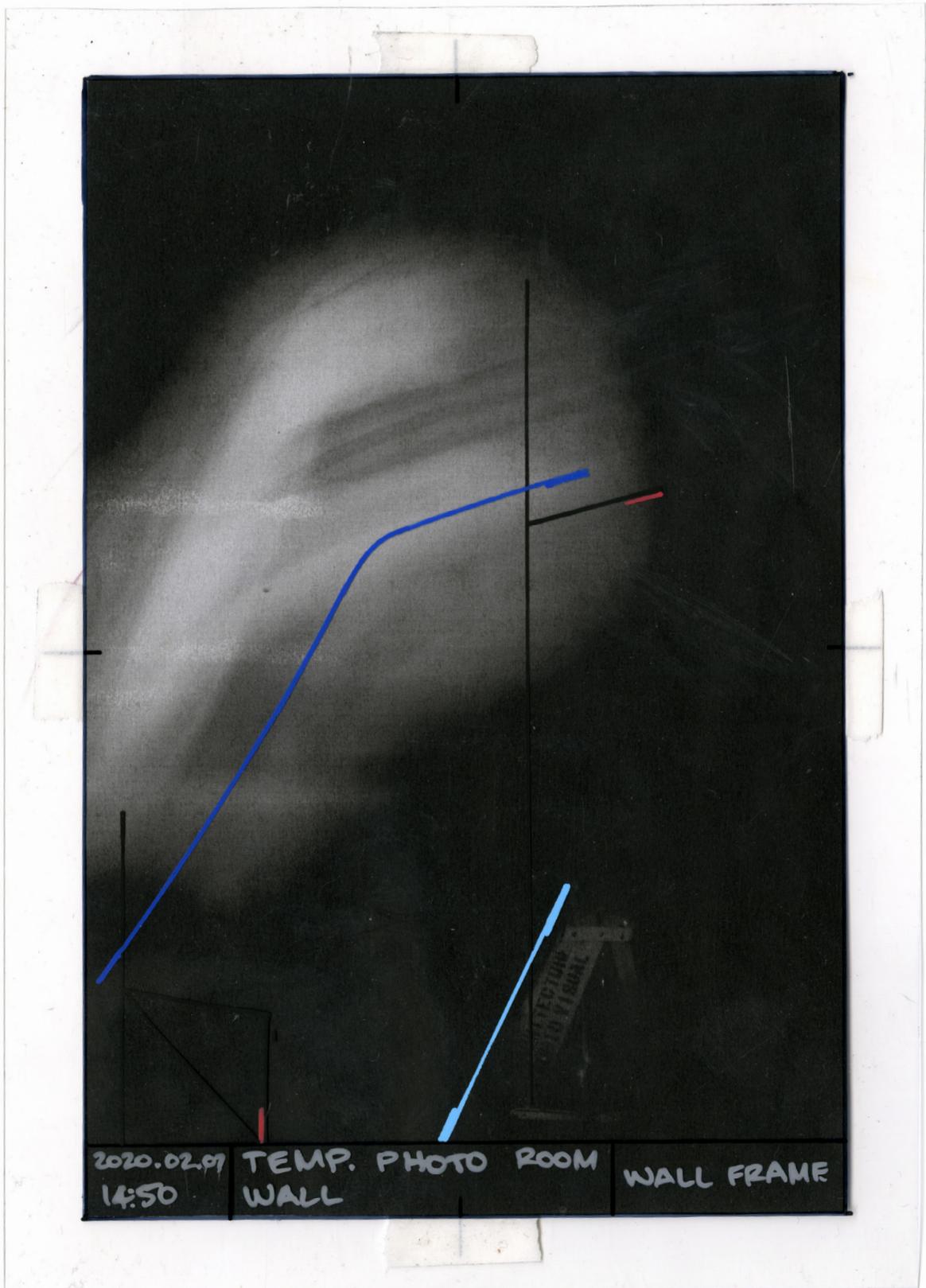


Fig 66: Wall Framing

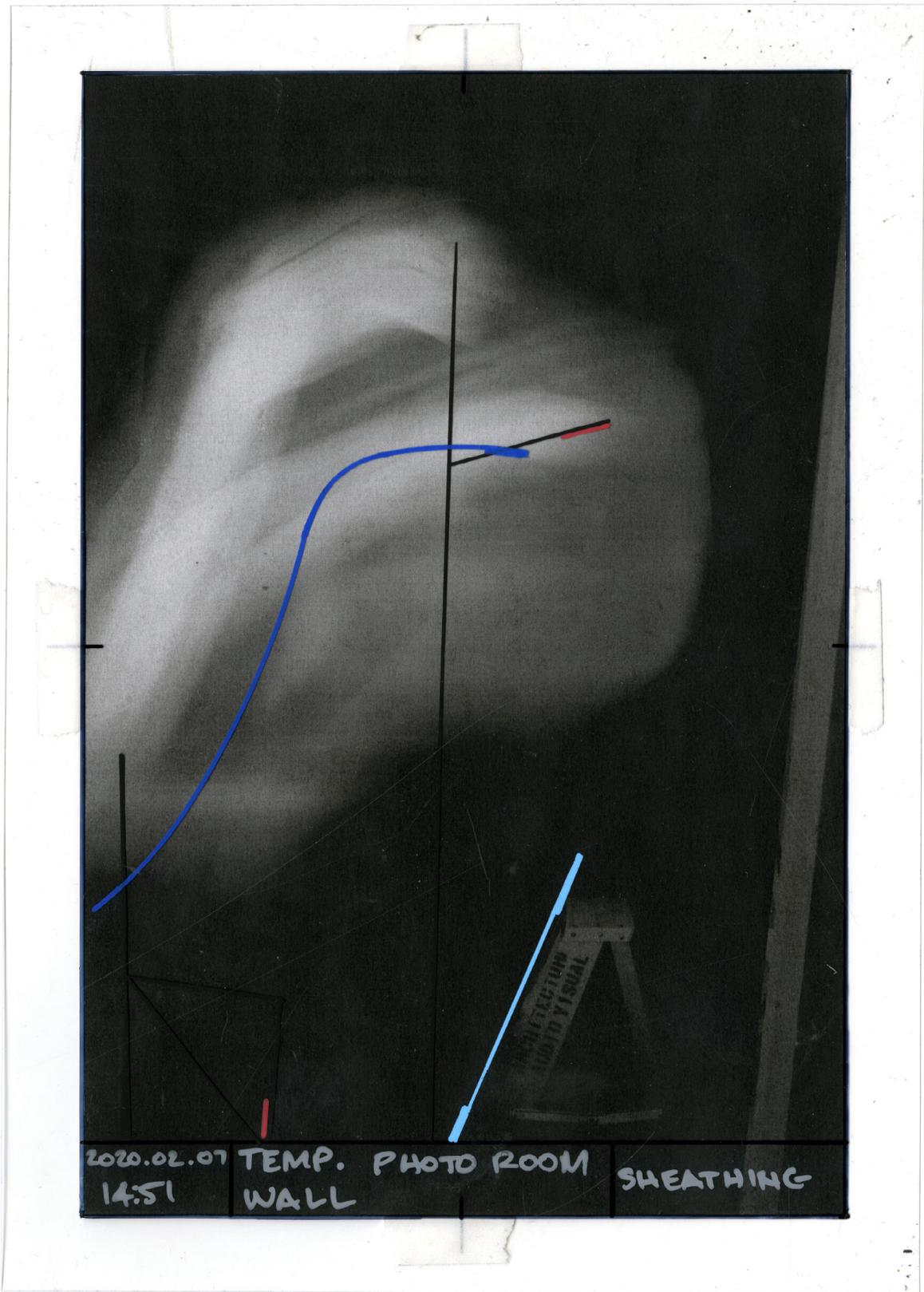


Fig 67: Wall Sheathing

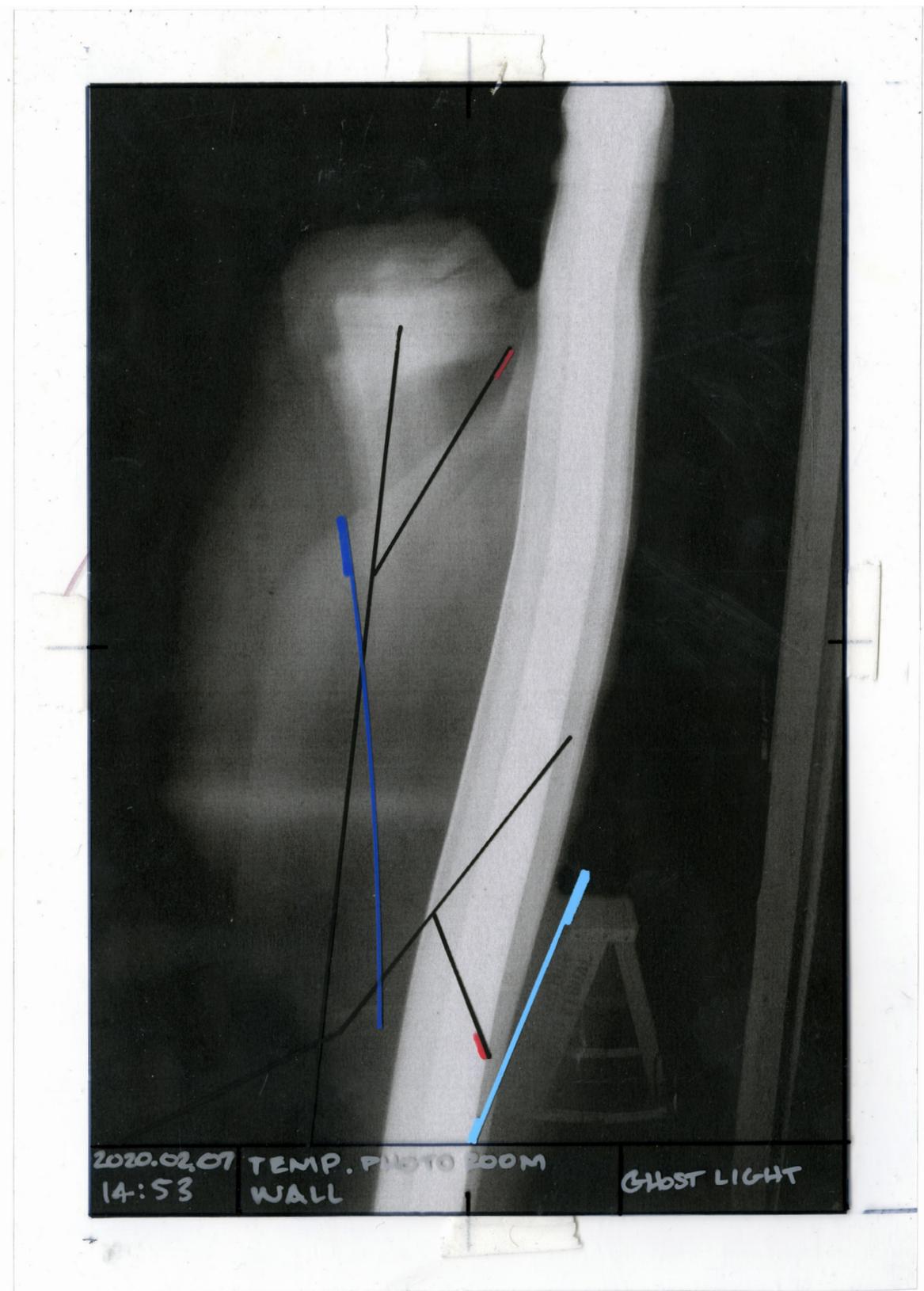


Fig 68: Ghost light



Fig 69: Ghost light 2

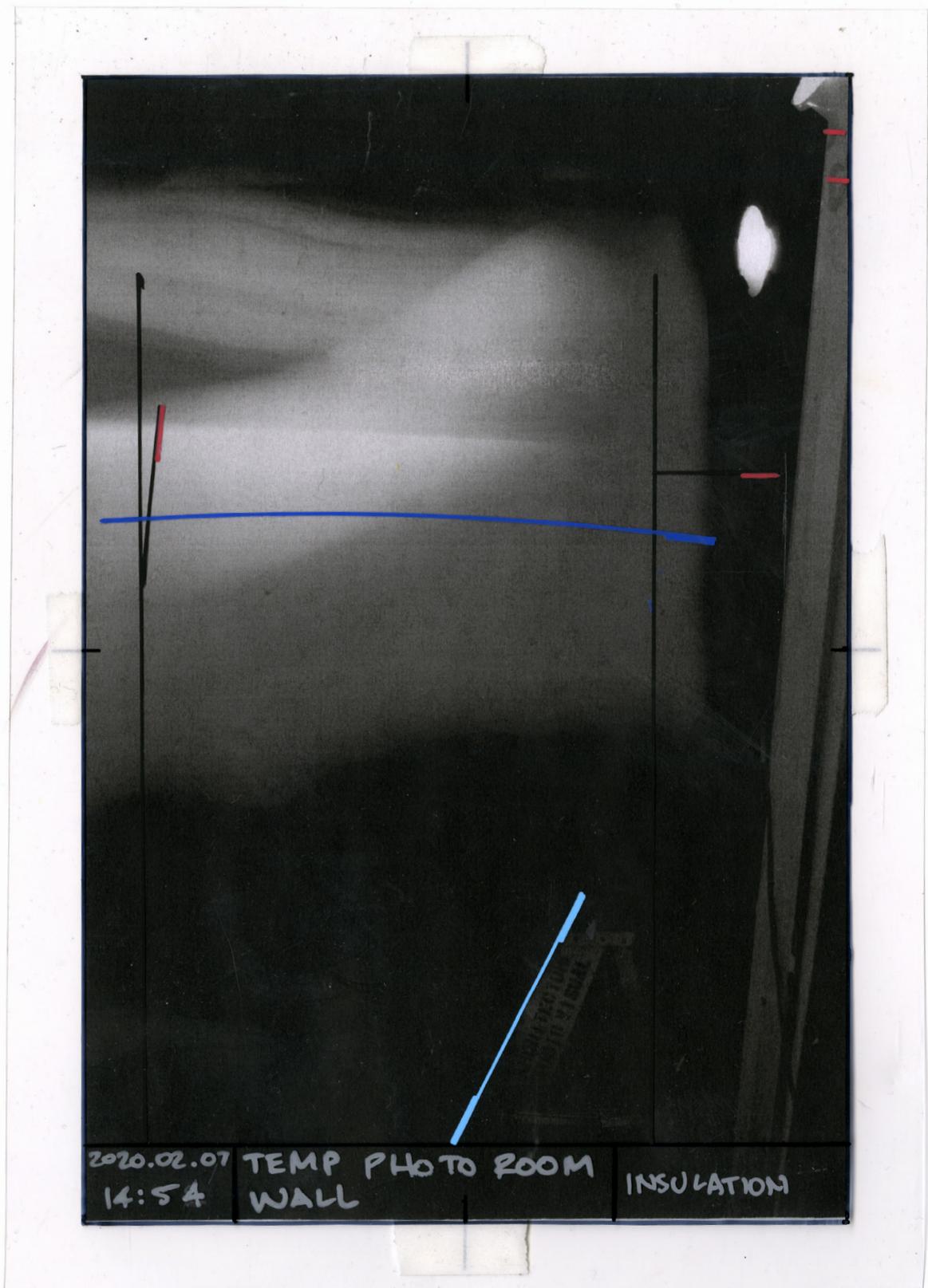


Fig 70: Exterior Insulation

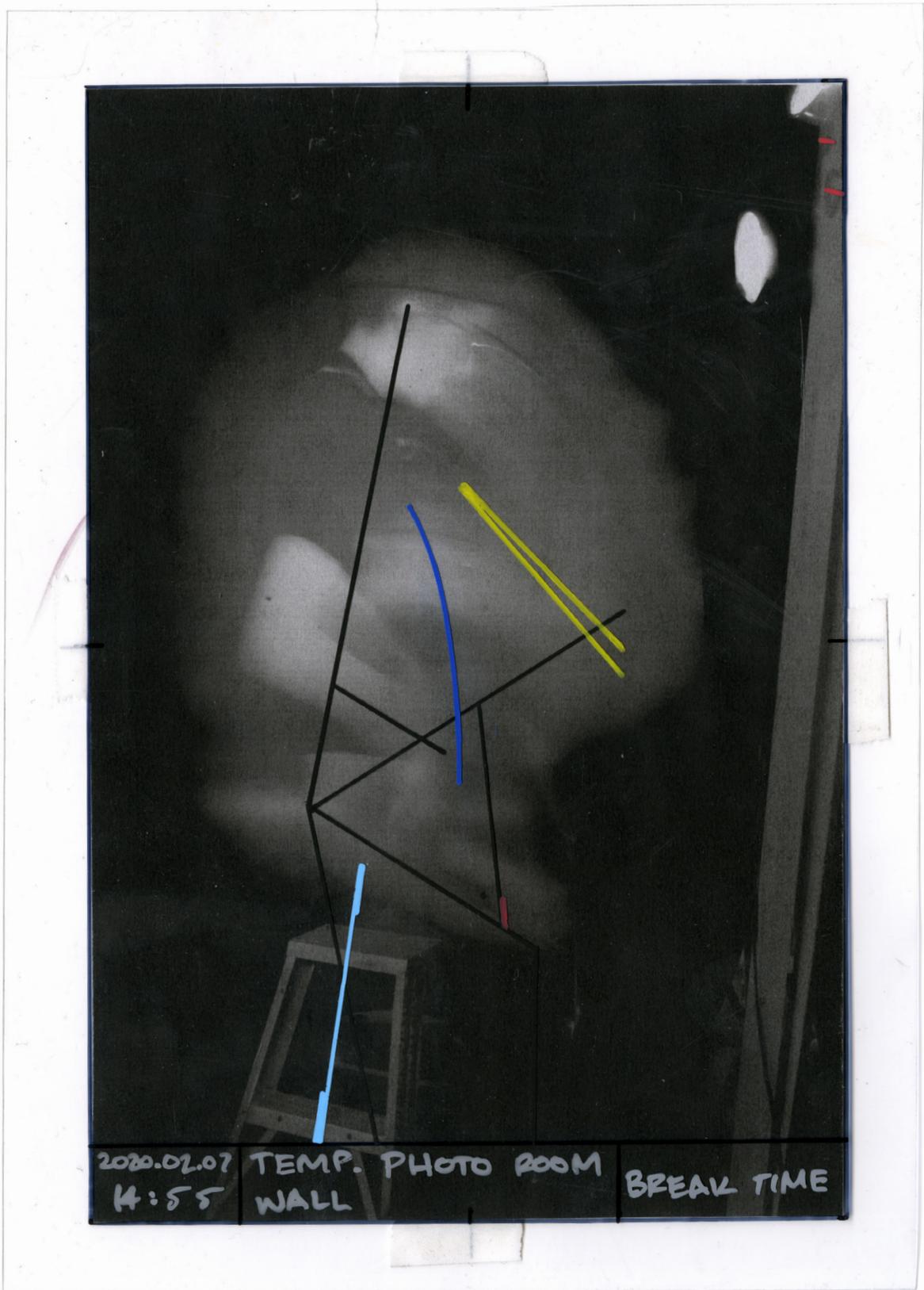


Fig 71: Taking a break

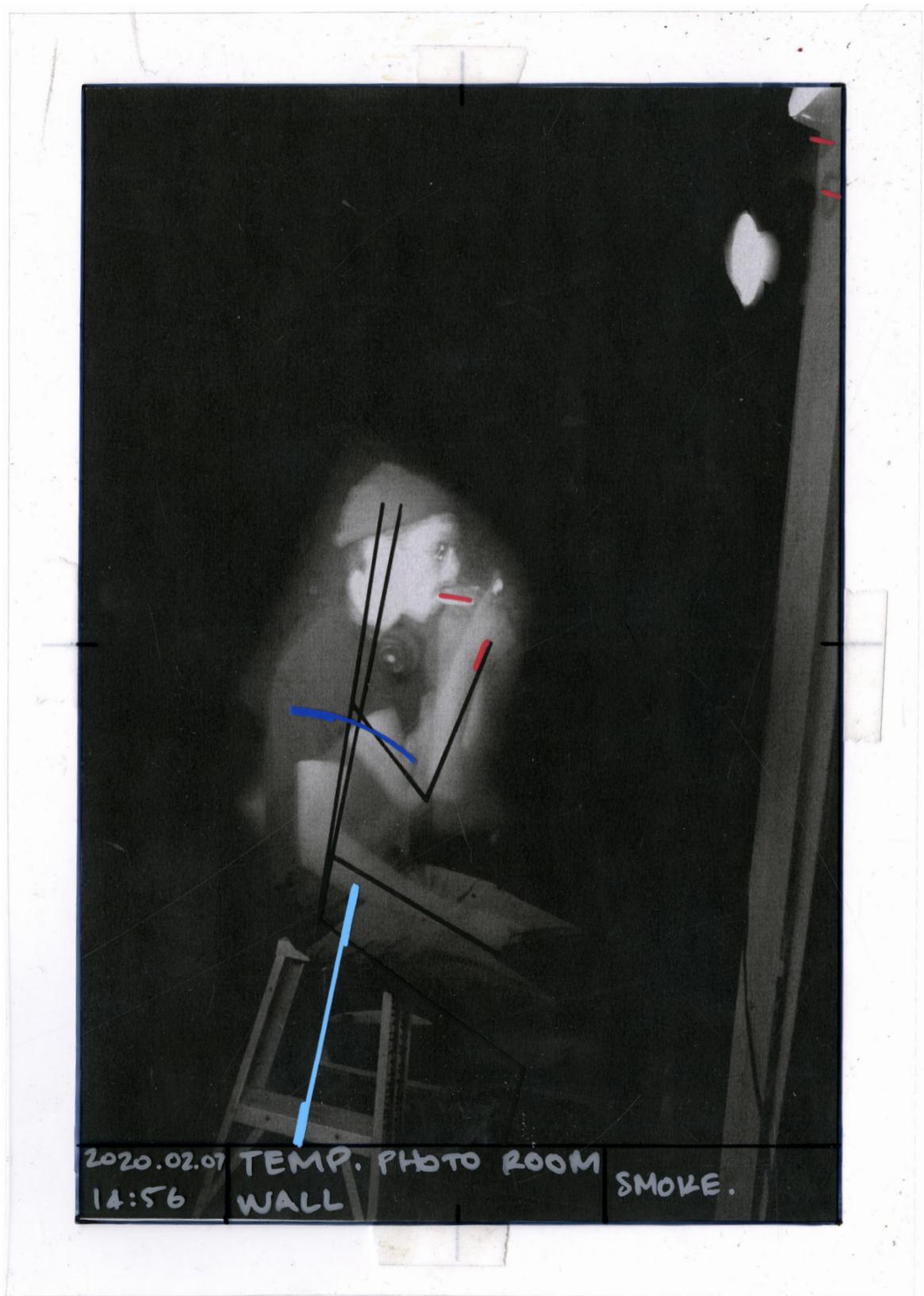


Fig 72: Having a cigarette

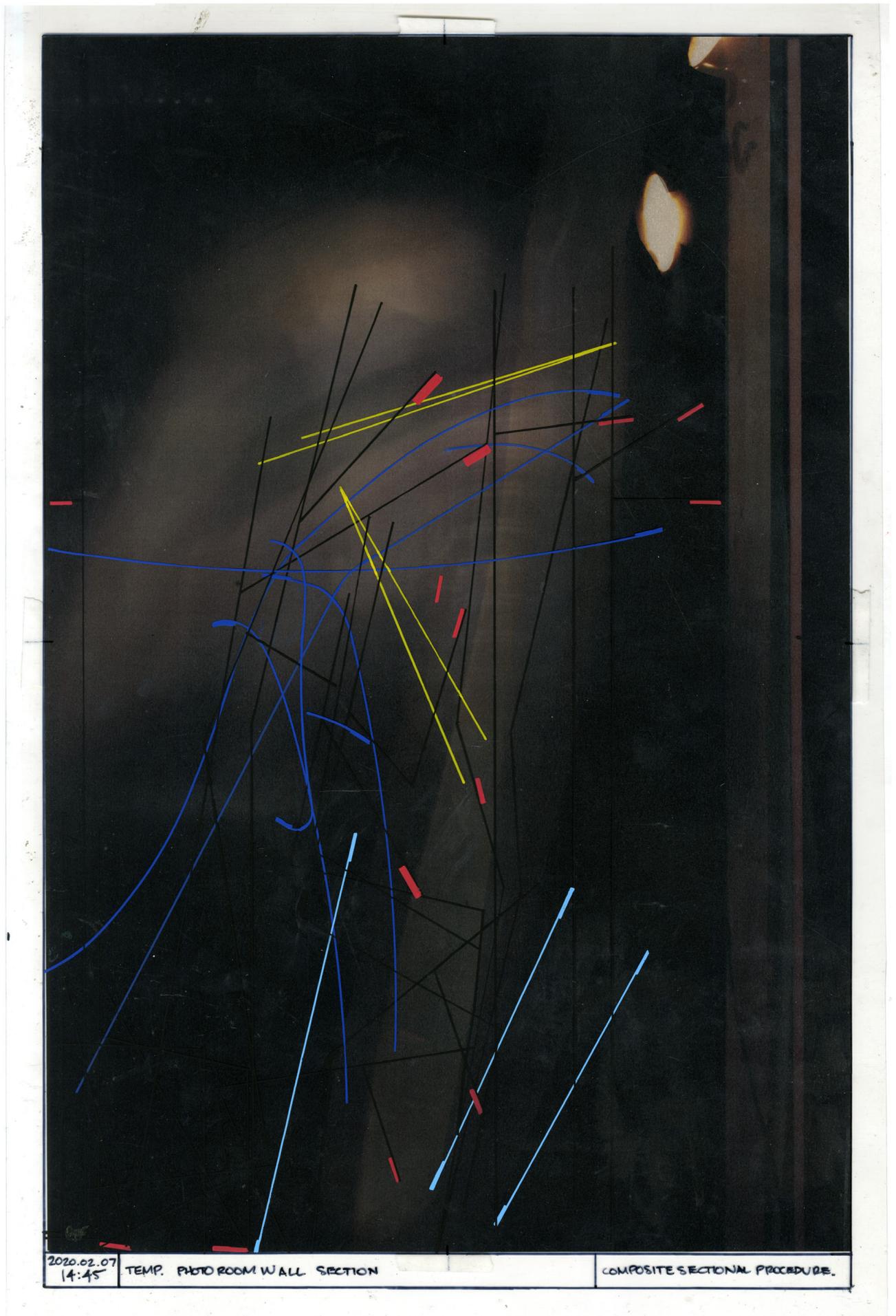


Fig 73: The choreography of building a temporary wall in the photo room. Reproduced at 56% scale to fit the page.

When we compound these layers, we arrive at a sectional drawing that begins to weave a web of layered activity that gives new meaning to the assembly of the wall that was built. While a sectional representation of the components of a wall can give us insight into the scripting of the building, only an enactive choreography, such as the one composed here, can begin to form the performance.

We can also look at smaller scale implementations of this notation system. At 1:1 scale, we can examine the way specific materials are interacting within the performance. Looking at the nail, we can see the friction points where it is grabbing the wood, and the point where the wood communicated with the carpenter to heed the depth at which it is installed. A very similar set of actions and expressions are present with the installation of a screw and plug, but the notations identify the different ways in which they are installed, how they communicate and grasp.



*Fig 74:* The mess of the performance

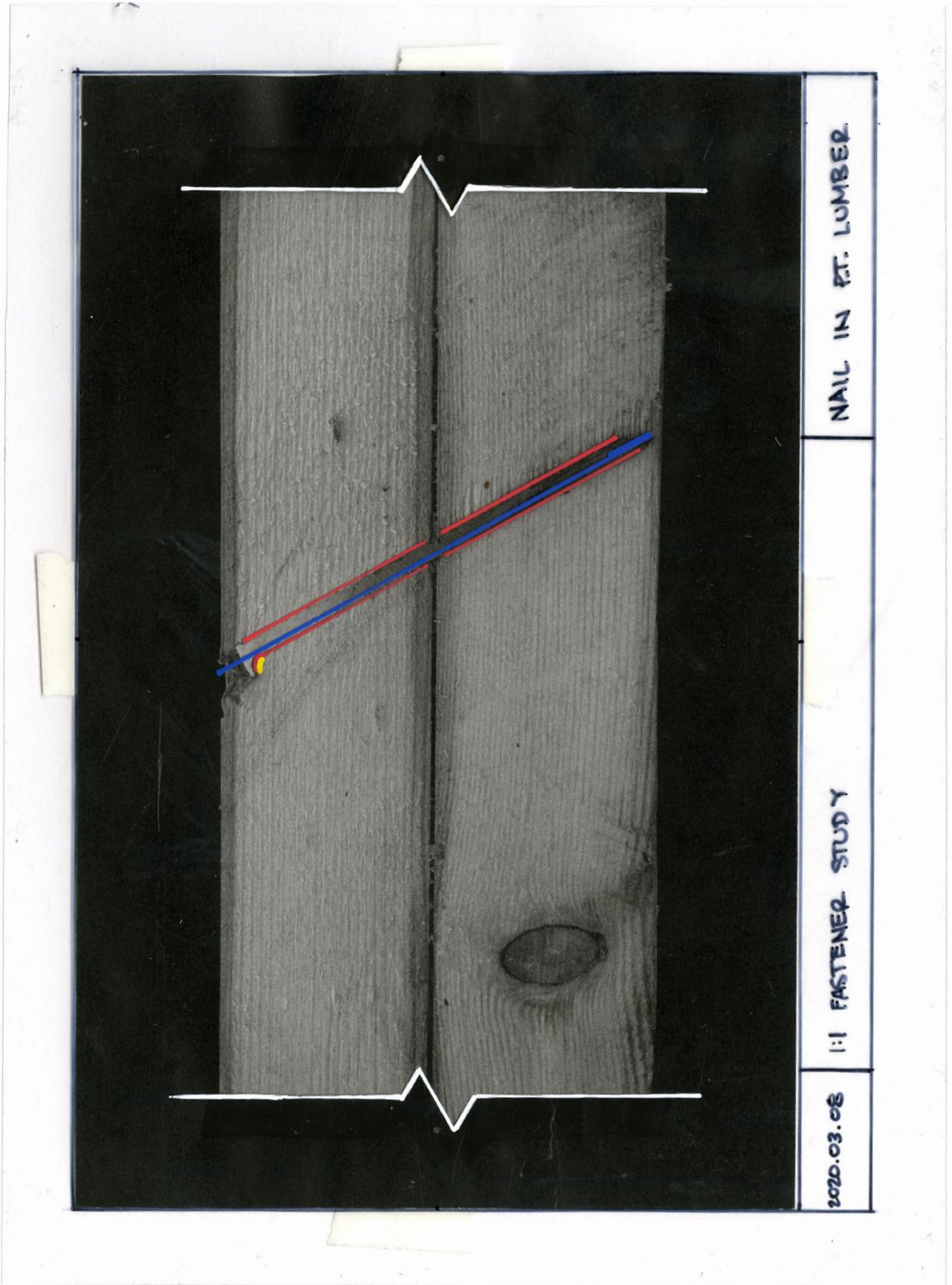


Fig 75: The choreography of driving a nail into wood

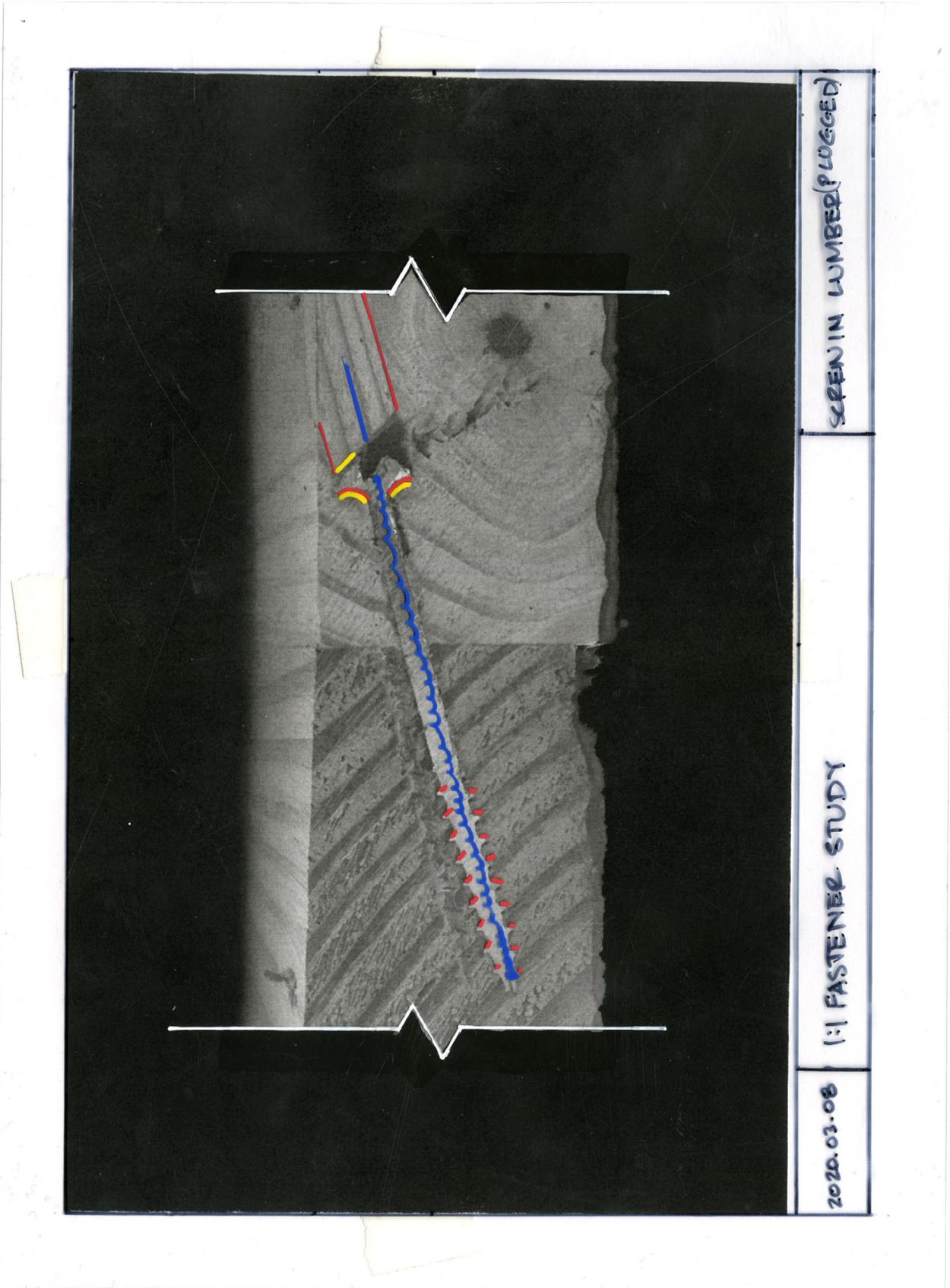


Fig 76: The choreography of driving a screw and plug into wood

As we explore the constructional performance, we will continue to use the notational system to evaluate individual acts and scenes, but also to begin choreographing details to attempt to reveal new ways of looking at these processes.

- 1 Merce Cunningham, *Changes: Notes on Choreography*, Reprint edition (Brooklyn, NY: Song Cave, 2019).
- 2 “Labanotation | Dance Notation,” Encyclopedia Britannica, accessed December 20, 2019, <https://www.britannica.com/art/labanotation>.
- 3 John Cage, ed., *Notations*. (Place of publication not identified: Reprint Services Corp, 1973).
- 4 Cage.
- 5 Lawrence Halprin, *The RSVP Cycles: Creative Processes in the Human Environment* (New York: G. Braziller, 1970).

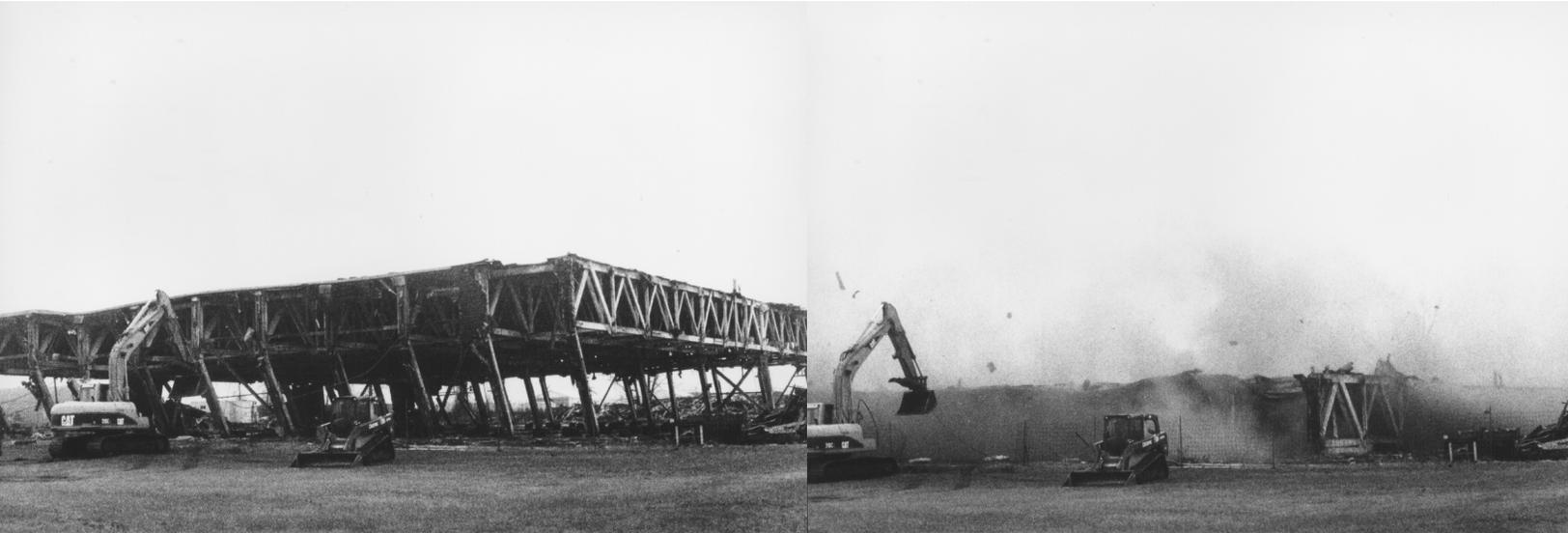


Fig 77: Deconstruction of a WWII Airplane Hanger in Virden, MB Canada

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## THE PERFORMANCE

The structure in which we can insert the performance is already inherent in the process of building architecture. The Gantt chart, the schedule, and the contract documents are all evidence of this structure. However, now that we are looking at this structure as a support for our architectural performance, we can start to have fun designing it. This structure is as uninhibited as Maison Dom-Ino and anyone's creativity can take flight within it to create their individual performance.

The performance is the development of the project at endlessly shifting scales. It is the layering of the work of the trades, and the observation of the building process by other participants. If the construction manages to capture the attention of others it becomes a successful performance. If these moments of connection can coincide with moments of intrigue then we garner the opportunity to give this performance meaning, and take

the step of reclaiming the construction period of a project as one we can design.

Now we must consider the performance more precisely to exemplify the opportunities for design within this structure. What exactly is the performance? How does this project's individual creative intent influence the built environment? How is this particular performance experienced?

The most cohesive approach to this performance is for it to reinforce the qualities that we are uncovering from the constructional process. We can take the way that we have examined the construction site, its participants, and their curiosity as a language and subject to base the performance upon. We can also emphasize the temporal and layered nature of construction and draw out the influence of continual participation on the understanding of the project. We can also reconsider Halprin's *RSVP Cycle*<sup>1</sup> as we examine the scored, the improvised, and the recorded.

The constructional performance is a tool of design. To build upon what we have uncovered throughout the project, this particular performance will seek to highlight four themes that display the opportunities previously discussed: continual participation as a path to closer understanding of the project; cooperation and conflict of the trades; architectural layering that reveals rather than conceals; and an exploration on the scored, the improvisational, and their recorded traces.

## The Tell-the-Tale Details<sup>2</sup> of the Performance

Rather than design an entire building, communicating these themes will be done through the performance of a pair of architectural details. These details are composed in such a way that they fully reveal themselves only through the process of construction. Although there will be details that hint at a narrative provenance, only the participant who is deeply involved with the whole construction will be privileged with a full understanding.

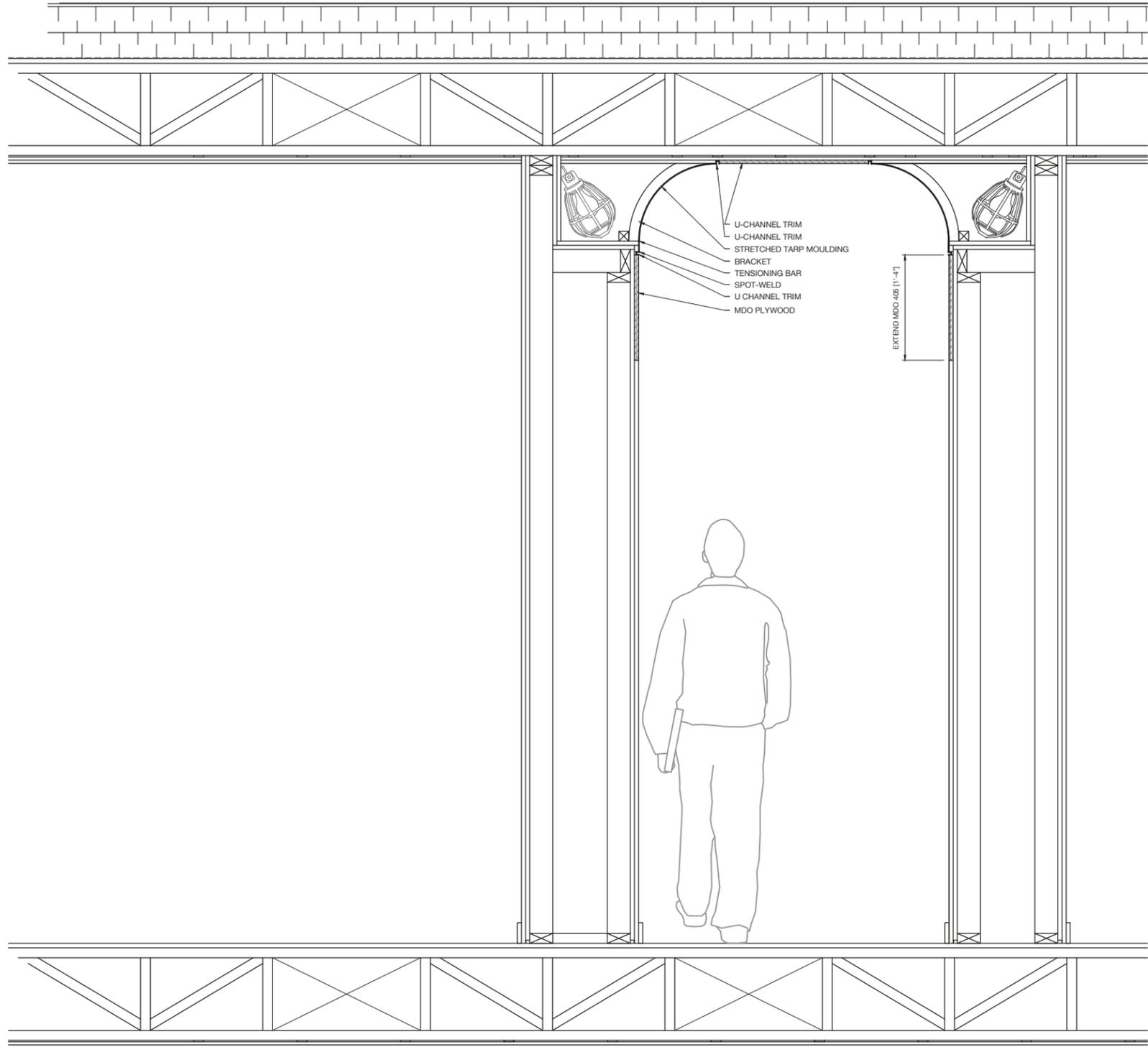
The Ghost Light, both on the stage and on the site, speaks of unique atmospheric qualities, and of necessary safety measures. As a single light on a mast a ghost light ensures that anyone on the stage has enough visibility to prevent them from falling into the orchestra pit. Owing to its single incandescent point source, the light it produces is uniquely enigmatic, and it produces long curious shadows across the stage. On the jobsite, ghost lighting serves an equally important safety role, providing visibility to the trades working on the project. The ghost lights in this case are typically caged lamps along a chord that often travel the length of hallways. Due to their implication in a moment of construction, that is still revealing of its inner material layering, the shadows they cast are also extremely diverse and captivating. These lights often play with other parts of the performance, making rooms glow orange through tarps, or using stud walls to stratify spaces with shadows.

Capturing the Ghost Light is a performative detail that attempts to canonize the ghost light into the myth we are creating. The layering of the architectural elements takes

PROJECT  
THE CHOREOGRAPHY  
OF CONSTRUCTION or  
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BUILDING

# 003

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LEGEND

--- OBJECT ABOVE

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DRAWING

CAPTURING  
THE GHOST  
LIGHT

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SCOTT NORMAND

REVIEWED BY:

SCALE

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SHEET

A311

great care in revealing the light that is now buried in the architecture itself, while supplying elements for the light to interact with. This layering also creates a dynamic interaction of trades. At times, it is organic and efficient, and at other moments, three trades that may never interact are seen on the same stage working around one another. These cooperative scenes are also given room to become improvisational and the traces of their interaction may find their way into the detail itself.

The final finishes of the detail employ the opaque white tarp as an obfuscation tool that masks the depth of the detail to building users, but still allows the light to interact with them. This is the surface of record, and regardless of what the scripted detail is, it is on this surface that the ghost light will reveal hints of the detail. Those with a close understanding of the detail will be able to use these hints to recover the intricacies of that particular performance.

The Juliet Balcony is also a safety-oriented detail. Guard rails are a fundamental safety device on a job site and eliminate the need to wear other fall-arrest devices when working at height. In a completed architectural context, The Juliet Balcony facilitates full-height operable glazing that frees a space to the outdoors. In a theatrical context, the balcony is continually re-rendered for renditions of William Shakespeare's *Romeo and Juliet* as a symbol for romantic longing. On the jobsite, as in a completed architectural project, the balcony is a location that provides a link from the inside to the outside. This link often becomes the location of communication between contractors relaying messages between inside

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THE JULIET  
BALCONY

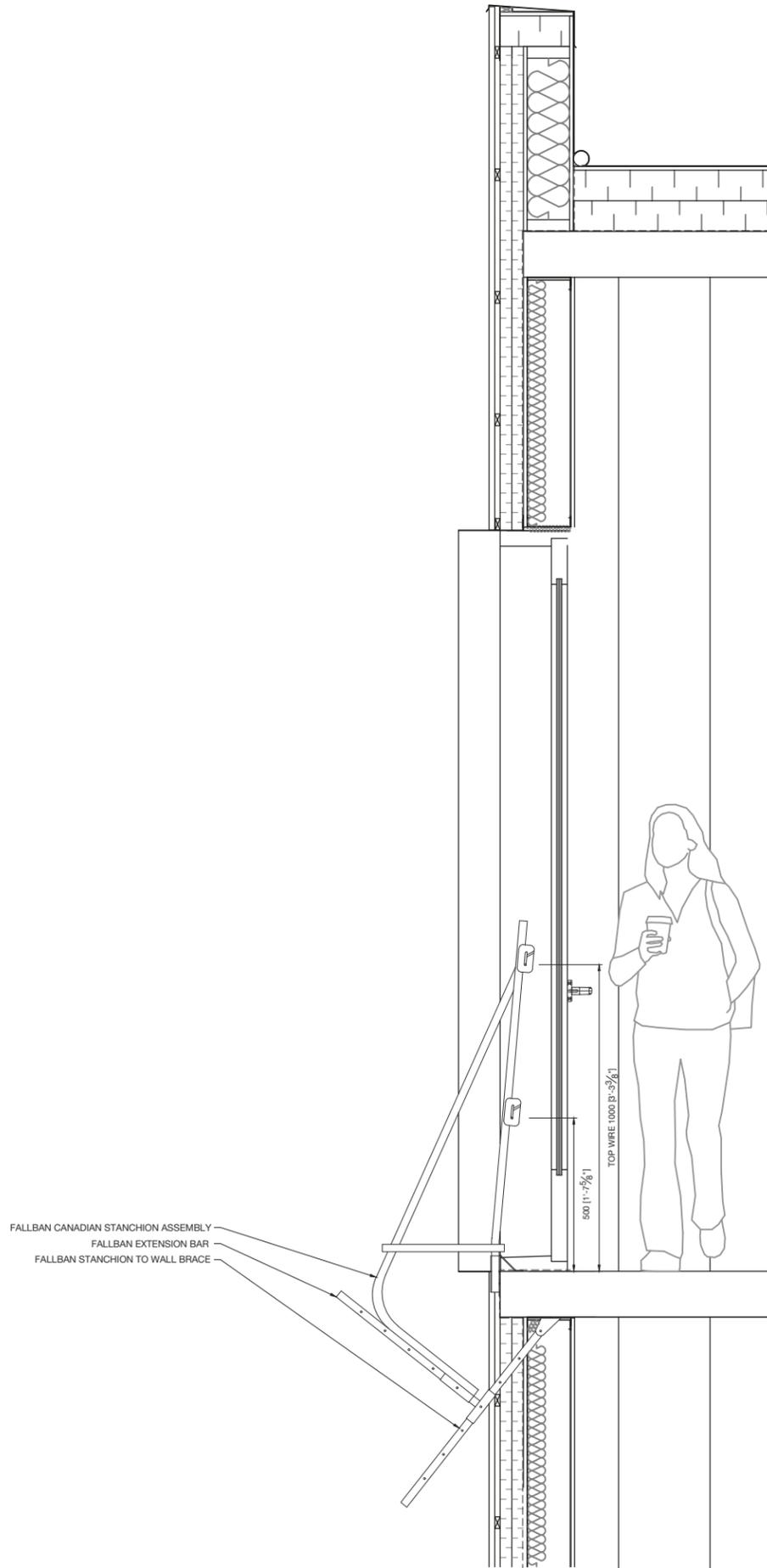
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and out, instructing The Crane Operators, or perhaps shouting lunch orders.

The detail here is designed to reuse the safety device and reconstitute it as a structural member for the support of the full height glazing, and to continue its original roll —to guard against falls. This detail is used as a way to retain the active roll of the guard rail. In its final form the armature that holds the guard rail becomes a curious object that creates an architectural language for the building.

The process of integrating this constructional object into the architecture creates the record. The treatment of the penetrations as the armature penetrates the layers of the detail will require the intimate relationship of the trades. This detail will become a layered mess and fail to communicate the constructional process without careful communication and improvisation.

## Observing the Performance

One of the goals of these performances is to deepen the connection of all participants to the performance. To do so, they need to be implemented in ways whereby more people can become participants. Increasing the accessibility to the performance improves its reach, and brings new voices into the architectural discussion. To increase this reach, the performance will use three strategies: there will be bleachers; the script will be telegraphed to all participants; and some participants will be tasked with wearing recording devices.

The implementation of bleachers is important. Our connection with the performance should be physical to reinforce Salter's characteristics of performativity. This connection displays an "engagement with the temporal moment of the present"<sup>3</sup> and the "embodiment and materiality" of the performance. The bleachers allow people to truly participate, to watch what they wish, and to experience all the tangible and intangible sensations of the job site. Perhaps as important as allowing people a place to sit and eat their lunch, it symbolizes an invitation to watch.

Out of respect for the script, the drawn detail will be projected against a backdrop. This will ensure that the audience has a basis of understanding of the work that is being undertaken by the performers. The projection will offer information to the audience that will help direct their gaze, but not obstruct it. Having this information in front of them, the audience is better equipped to determine the agency each participant may be adopting in the name of improvisation. This is a way that the performance can clue the audience in without totally giving away the performance.

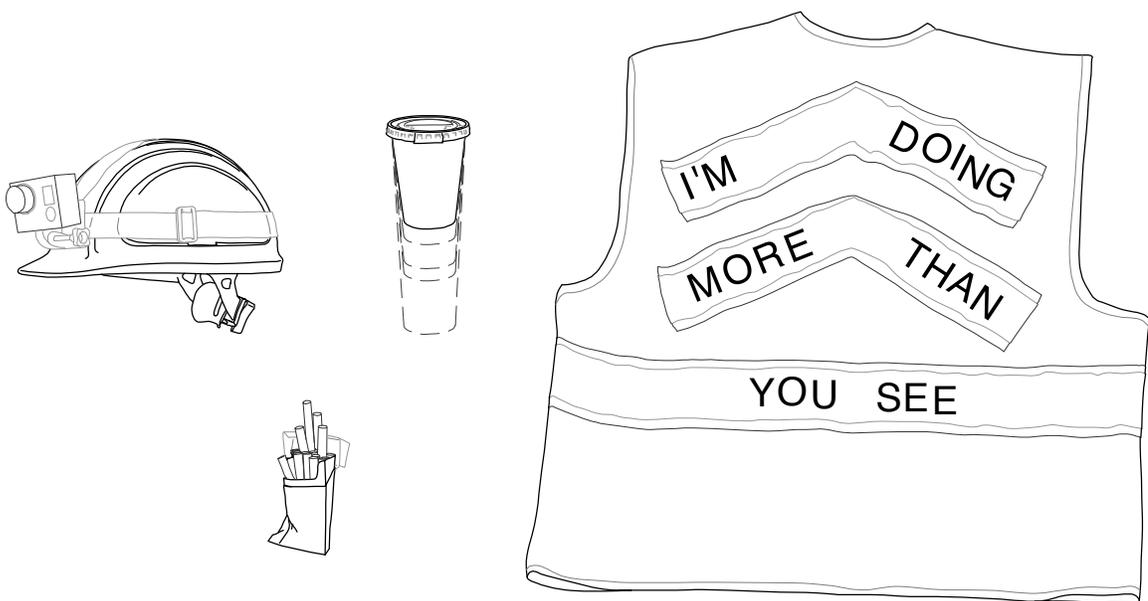
If accessibility is the intention of these provisions, we can also implement the use of action cameras to record the performance. This will give the audience the ability to see privileged views and to be more intimately involved in the actions of the performance, and involves them in the construction at the scale of the nail and the screw. This also opens the performance up to participants who may not be attending the performance in person. Although it changes the capacity for participation, it grants the opportunity to increase the time of engagement, and to

bring participants into the fold that may not be able to physically attend.

### The Relics of the Performance

The props and traces of the performance contribute as their own records alongside the recordings embedded into the details. After the performance is completed, these objects become the relics of the performance. The relics are sometimes normative tools used to build the project, but in some way are necessarily designed to fit their own role in the performance.

The uniform, for example, will be a hardhat and a safety vest. Specifically, a Honeywell North Zone™ N10 hardhat with ratchet adjustment, and a Condor 1YAN3 high visibility vest with chevron rear striping.



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HOW TO PERFORM A  
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# 003

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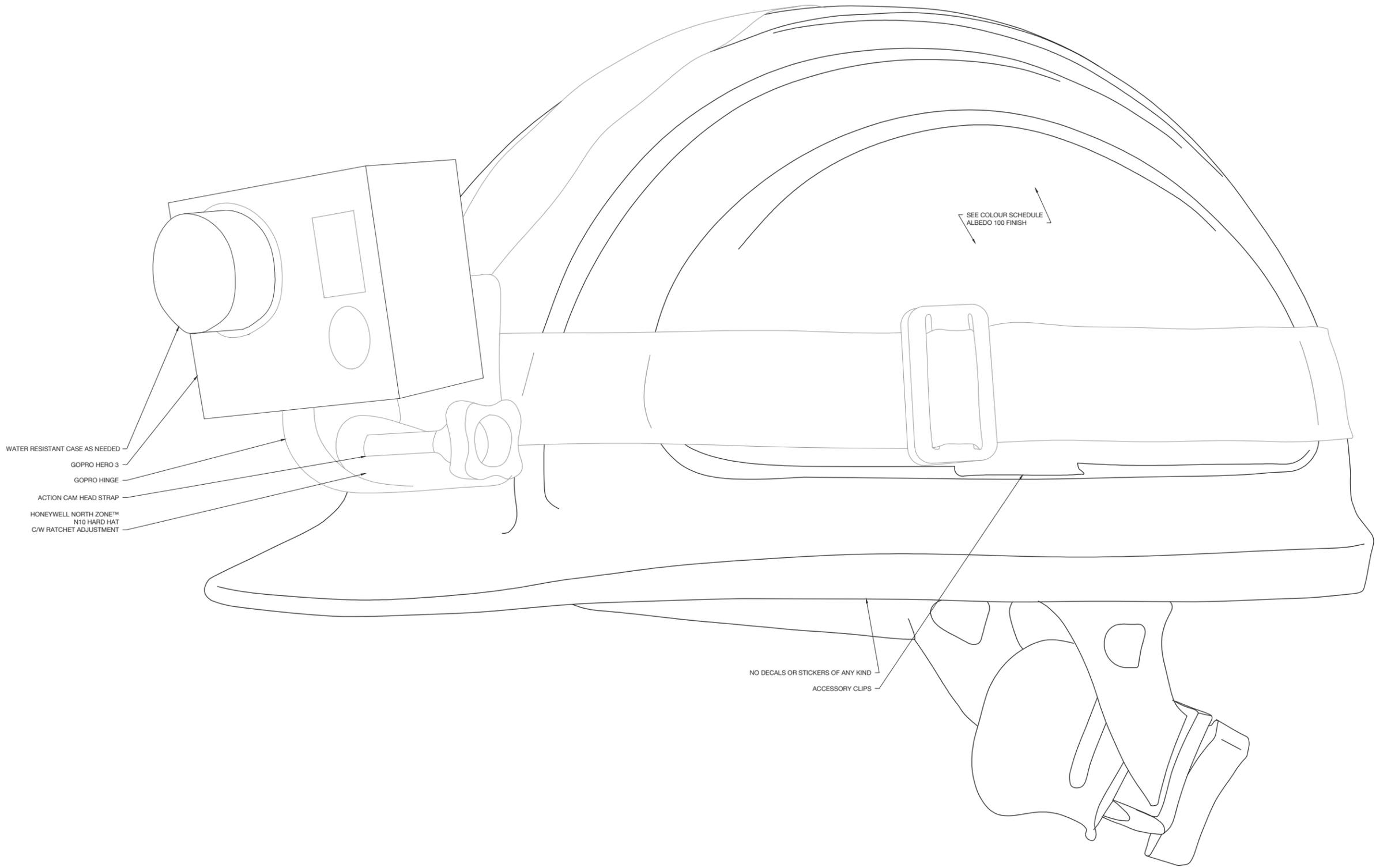
DRAWING  
**HARD HAT**

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**SCOTT NORMAND**

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HOW TO PERFORM A  
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COFFEE CUP

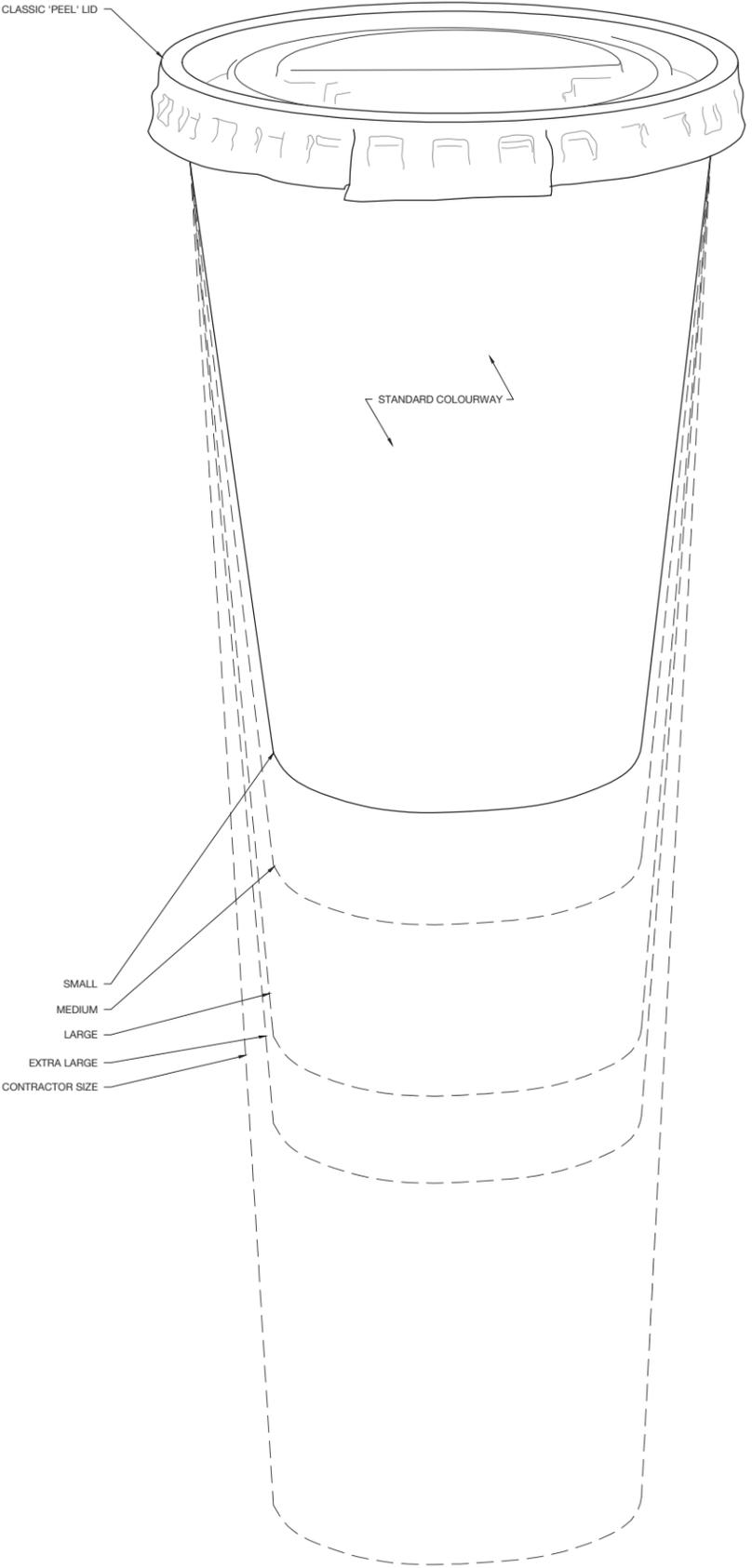
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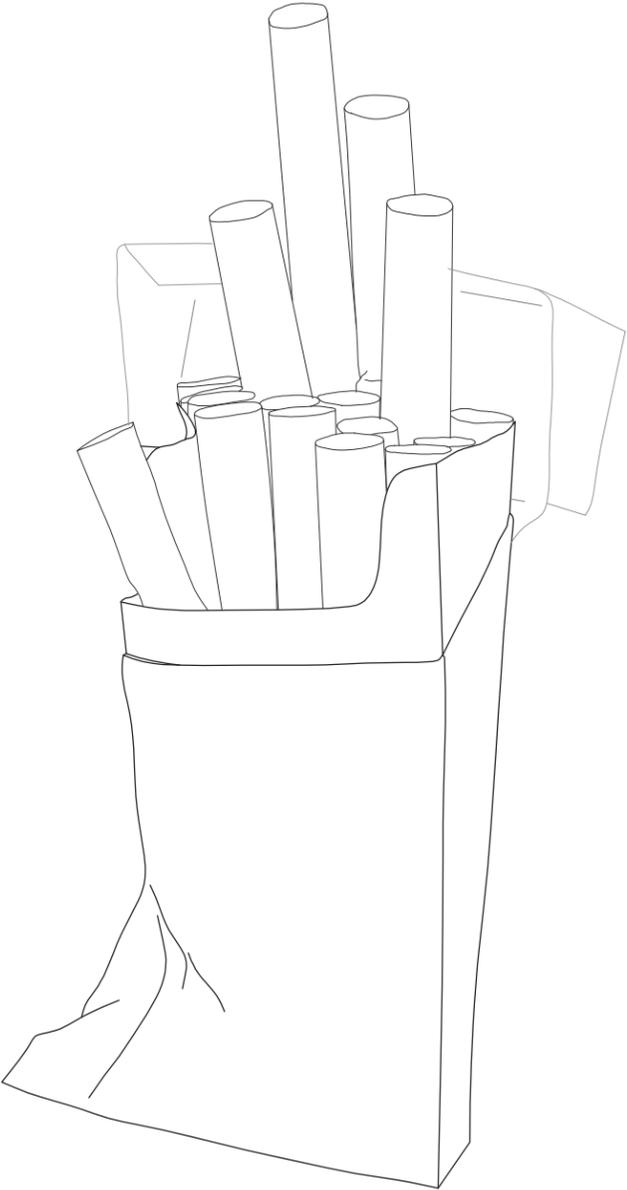
A513



PROJECT  
**THE CHOREOGRAPHY  
OF CONSTRUCTION or  
HOW TO PERFORM A  
BUILDING**

# 003

NOTES



LEGEND

----- OBJECT ABOVE

REVISIONS

2020.04.02 | EXAMINATION COPY

DRAWING

**CIGARETTES**

DRAWN BY:

**SCOTT NORMAND**

REVIEWED BY:

SCALE	DATE
1:1	2020.04.02

SHEET	<b>A514</b>
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*Fig 84:* The Hard Hat enacted



*Fig 85:* The High Vis Vest enacted

The performance will respect standard hardhat colouring to help with character identification. Each hardhat will be fitted with a GoPro mount, and finished with Albedo100 reflective spray to ensure participants are visible to the audience even at night. The vest will be finished with motivational phrases as a reminder to us all of the performative nature of this construction.

There are also two other relics that have emerged from the images and the drawings. The tarp has an important role to play as a non-human performer. Its bright colours and animated presence on the site make it an impressive part of the performance. Many of the memories we are creating for the audience will have the tarp as a principal player. The welder's curtain plays a similar role whereby it protects the audience from the hazardous arc of the weld. Both of these surfaces, whether they make their way into the detail or are removed from the site, should be recognized for their contribution to the performance.

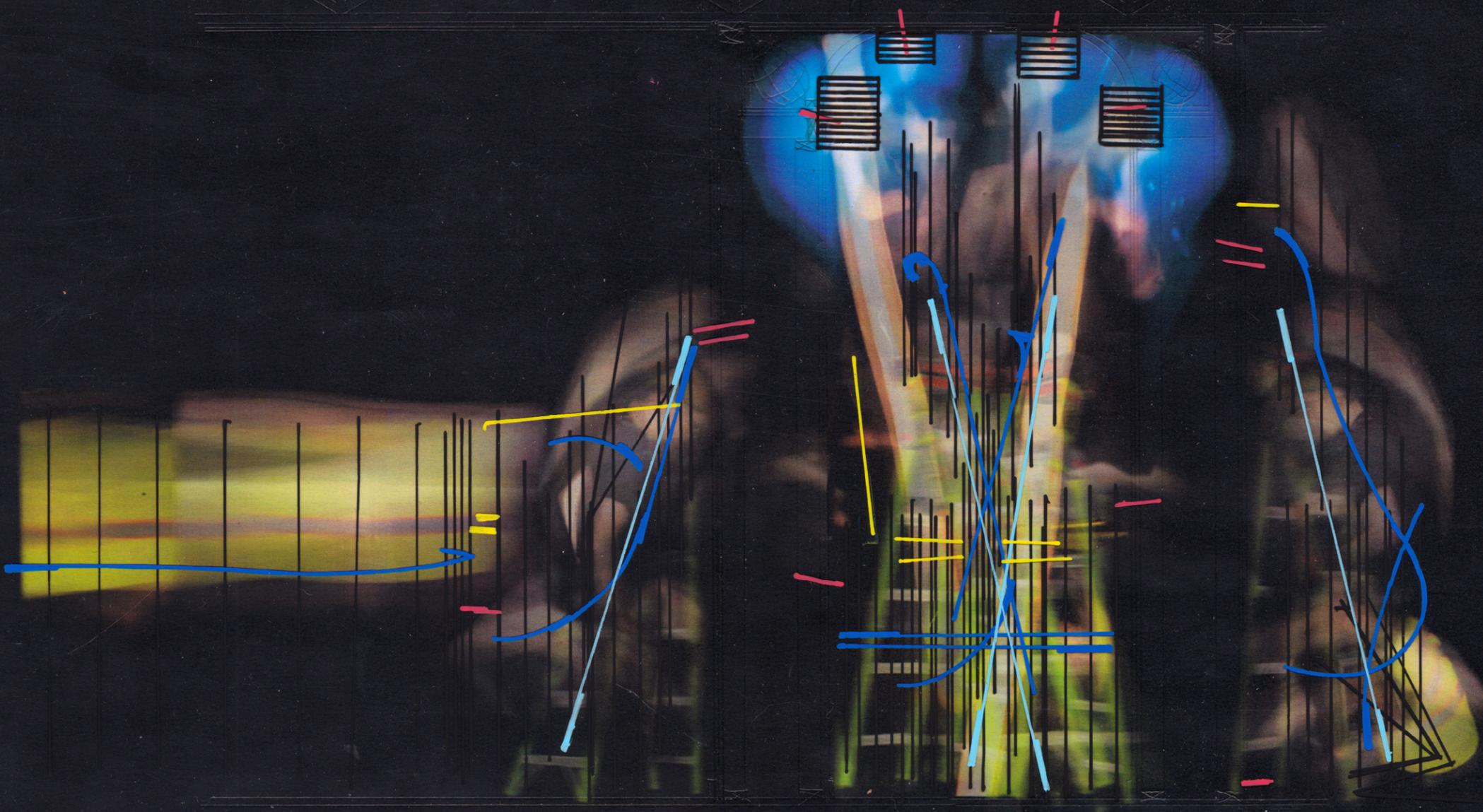
However, some of the relics will play more unassuming roles. The empty coffee cup that makes its way into the wall cavity or the scrap piece of wood with an improvised drawing that gets buried outside the foundation may not have crucial rolls in the assembly, but they are a part of the performance and their presence in the details should be recorded with similar attention.

The performance we are presenting here exposes at great length and in great detail the procedures of construction, while trying to promote intent, and allow for unpredictable opportunities that may only present themselves on the jobsite. By doing so we are playing with the scripted, the improvised, and ways of recording them. We are taking advantage of the rigorous structure inherent in the construction project to design a performance that in turn promotes the relationships we have revealed in this thesis.

SCOTT NORMAND

THE CHOREOGRAPHY  
OF CONSTRUCTION OR  
HOW TO PERFORM  
A BUILDING

THE BODY IN SPACE



2020-04-02 EXAMINATION COPY

CAPTURING  
THE GHOST LIGHT

SCOTT NORMAND

1:20	2020.04.02
A311	

SCOTT NORMAND

THE CHOREOGRAPHY  
OF CONSTRUCTION OR  
HOW TO PERFORM A  
BUILDING

THE BODY IN SPACE.

EXAMINATION COPY

THE JULIET  
BALCONY

SCOTT NORMAND

1:20

2020-06-02

A302



This is by no means the only way to perform a building, but it begins to form one way. As diverse as architectural design can be, so too can the choreography of these projects. By thinking about how these projects are being built, we can reinforce our architectural intent. We can open construction up to observation and critical interaction from people who otherwise may have ignored it.

- 1 Lawrence Halprin, *The RSVP Cycles: Creative Processes in the Human Environment* (New York: G. Braziller, 1970).
- 2 Marco Frascari, "THE TELL-THE-TALE DETAIL," n.d., 14.
- 3 Chris Salter, *Entangled: Technology and the Transformation of Performance* (Cambridge, Mass: MIT Press, 2010), xxiii.

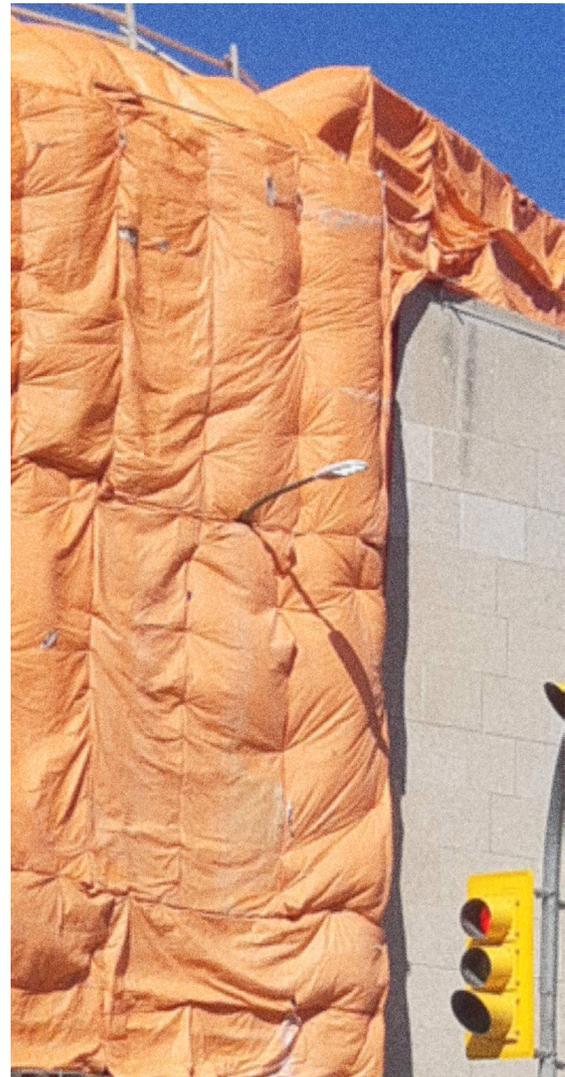


*Fig 88: A participant peering through a hoarding Peephole at the site of the Inuit Art Centre in Winnipeg, Manitoba, Canada*

## PRACTICING PERFORMANCE

This thesis isn't a performance. I am not a director. Contractors are not actors. The Tim Horton's cup lodged in a wall of 30 Devonport in Winnipeg, Manitoba is not a relic. That is, until we start to imagine them as such. This thesis sets out to explore the constructional period as something more than a means to an end. It intends to open up a new realm for experimentation, imagination, and critical design. Lawrence Halprin's *RSVP Cycles: Creative Processes in the Human Environment* (1970) can be helpful with this process. As an informer for the production of performances and the creative process in general, Halprin outlines the collaborative nature of the resources, score, valuation, and performance. When we apply this to the practice of design here, we can see how the author throughout the phases of the project is dancing with the application of design and the feedback loop they are receiving from the project. Just as these drawings have been key to documenting a process influenced by the experiences of watching the jobsite,

the performance has necessarily become a collaborative process between all involved in the process and for its entire duration. The author is not the only one scripting this performance. Everyone's influence is embodied in the completed work and in the way it is built, and even the end of one project will certainly become a resource for the next. My true wish for this project is that you, the viewer, might see the opportunity that this process provides for creative opportunities within construction, and that you might find a personal place to provide your own valuation. I hope that any designers reading this thesis might stop limiting themselves to "How is the contractor supposed to build this?" and start asking "How can the contractor build this?" I hope that the contractors reading this will understand their important role in architecture and begin to form a critical eye for the way they build things and react to design. Finally, I hope that people reading this who believe that they play no role in architecture think critically about how they engage with architecture, especially at the formative stages of construction. The term 'participant' is used here with the express intention of reassuring everyone that we all play a role in architecture.



*Fig 89: A participant peeking from behind the curtain as recorded by Colby Richardson and externalized on Instagram*

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