

# **The Residue of Flight**

Investigations into the Life of Matter

by

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I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.







### **Stump Pool in April**

*Crack willows in their first pale eclosion  
Of emerald. The long pool  
Is simmering with oily lights. Deep labour  
Embodied under filmy spanglings. Oxygen  
Boils in its throat, and the new limbs  
Flex and loosen. It keeps  
Making the effort to burst its glistenings  
With sinewy bulgings, gluey splittings  
All down its living length.*

*The river is trying*

*To rise out of the river.*

*April*

*Has set its lights working. Its broad wings  
Creased and humped in their folds, convulse  
to lift out over the daffodils.*

*The soft strokings*

*Of south wind keep touching all its membranes  
Into spasming torments. It knows  
The time has come for it to alter  
And to fly, and somehow to tangle  
With the hill-wood – waiting high there, flushed  
In her bridal veil of haze violet.*

Ted Hughes  
*River, p.27*









# Abstract

This thesis is a journey that unfolds alongside the transformations of a river during springtime. Moods and movements captured by Ted Hughes in his poem *Stump Pool in April* inspire a series of explorations that set out to express the affective vectors of the river's becoming through sculpture and architecture. The thesis is a manifestation of this search.

Arranged as a narrative in five chapters, each offers an account of the emergence of the five works. The first three are a sculptural response to each stanza of the poem: *Prometheus* manifests the river's phase-shift from ice to water, *Sky Burial* from water to steam and *Icarus* the passage of steam rising towards the sun. Prometheus' torment, the tearing dispersal of the body during a funerary ritual and the ecstatic flight of Icarus are caught through three material and fire based experiments. Chapter four reflects on these works while investigating the conception and construction of the *Bruder Klaus Chapel* by the renowned Swiss architect Peter Zumthor. The fifth chapter moves the exploration from sculpture to architectural design deploying the lessons learned from the previous works. Forces of descent rather than ascent now inform the creation of a torrential void, *A Lover's Enclosure*.

The trajectory in each work and through the series is guided by what *feels* right, by the unpredictability of the material imagination, working by hand, and by forming and re-forming reoccurring themes as they reverberate and transform in a continuum of affective transformations.



# Acknowledgments

I would first like to thank my supervisor, Dereck Revington, who has encouraged me to explore my love for edge conditions with conviction. His intriguing perspectives have provided me with invaluable insight that extends well beyond my thesis. I would also like to thank my committee members, Ryszard Sliwka and Andrew Levitt, who have patiently listened and given sound advice during times of frustration and great joy.

To my friends and peers: thank you for enduring my erratic behaviour throughout this process.

And most importantly, to my family: thank you for your unconditional love and resilient support as the years have passed.



*To my [deceased] bird.*

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# Preface

Too often have I been asked - and have asked myself - to come up with a concept when beginning the design process or to write an outline of what I plan to undertake. The urgency to communicate ideas, intentions and interests to clients, professors and to myself is premature or forced. Unfortunately, I find myself falling back on that which is familiar or the need to propose something, anything, given the reality of constraints that are either imposed or are of my own making. This approach has never been fulfilling. A new approach is desired.

My thesis embraces the freedom of time within an open-structured academic program as a means to explore. Inhibitions, expectations and requirements are temporarily set aside - and the result is astounding. The body of work produced is unforeseen, yet is highly welcomed: it is the change that I wish to see, a change that moves me, inspires me, affects and pleases me even though it is not initially understood. The work is an expression of what has been restrained, never tapped into, and is presented as five chapters.

The thesis is foremost a way of working that submits to my unconscious. Work is driven by instinct; what *feels* right informs its trajectory. The most influential piece comes from Dereck Revington's studio in which a poem is chosen. *Stump Pool in April* and myself couple in such a profound manner that a frenzy of material and fire based experiments unfold in a short period of time where the transition of a river during spring time, the perceptions of poet Ted Hughes as well as my own perceptions become the seeds of a journey that develops a focus while translating liminal states into other mediums.

## **Sculpture**

At first, three sculptures are built in response to three stanzas of the poem. *Prometheus* manifests the river's phase-shift from ice to water, *Sky Burial* from water to steam, and *Icarus* from the steam that rises towards the sun. The sense of life to the river as temperature gradually increases over the period of a day and intensifies into a full blown heat is intended to be expressed by manipulating clay, wood and steel. It is a process that relies on selecting materials for their ability to register low or high heat, and are treated and formed accordingly. Fire, being the primary force of transformation, drives archaic and alchemical explorations that aim to capture a moment of the materials' change in state.



In attempts to achieve this, sculptures are composed as a set of three elements: force, material and residue are re-arranged in a precise combination that, while physically static, are not in a state of stasis. It is as though the material is *growing*, *departing* or *flying*. This is what Susanne Langer reminds us about when she talks about seeing double: we see a *movement* that flows *through* the design, we see it *with* and *through* the actual form.<sup>1</sup> But, just as much as there is an imagined progression to the sculptures - that something is being worked towards - there is also a sense of deterioration. The materials do not have a singular direction and are therefore caught on an edge of an outcome that is unknown.

In part, this complexity is due to the dual presence of force within their physical framework. It seems as though temperature acts from within the material itself, no longer subjected to an external force; material is not only undergoing a transformation, it is also undergoing a *deformation*. This makes the sculpture, for one, autonomous and, two, renders the imperceptible perceptible. Specifically, a state-of-mind is captured. By attributing an analogous scene to the already analogous moment of the river, the potency of what may be happening in space and time is further understood.

There is no prescribed method to make materials behave as conductors for energy.<sup>2</sup> The sculptures only come about by an open-process of making, of thinking through feeling and embracing the unpredictability of working by hand. Designs are strongly influenced by my awareness of the five senses and discoveries made along the way, often requiring a number of trials to tune a final arrangement. The emerging focus on materials, energy and process as a means to reconstruct phenomenological occurrences into another medium runs parallel to the artistic movement of *Arte Povera*. It is this primal way of working and use of common materials that is then lent to architectural explorations.

### **Architecture**

The sculptures inform the selection of an architectural project. The torment of growth in *Prometheus* and the ecstasy of flight in *Icarus* are embodied within the charred void of *The Bruder Klaus Chapel*. *Sky Burial* plays the dominant role as material is violently lifted from a rooted base towards the luminous high above. Here, the feeling of ascending as materials, volume, light and fire combine is investigated.

A fifth and final chapter builds upon the themes of the previous four works. In fact, the residue associated with flight inspires the final work. Decent rather than ascent, gravity rather than buoyancy, is focused on in an attempt to capture the *full* movement of the river's transition. Material and force are re-arranged one final time and a concept for an architectural proposition finally arises. *A Lover's Enclosure* assembles concrete, earth, water, air, fire, leather, steel, bronze - and a raptorial bird - to manifest liminal states of matter and mind within a torrential void.

1 Brian Massumi. *The Thinking-Feeling of What Happens : The Semblance of a Conversation*. Inflexions 1.1: How is Research-Creation? May, 2008. ([http://inflexions.org/n1\\_The-Thinking-Feeling-of-What-Happens-by-Brian-Massumi.pdf](http://inflexions.org/n1_The-Thinking-Feeling-of-What-Happens-by-Brian-Massumi.pdf)), p.3

2 Lumley, Robert, 1951-. 2004. *Arte Povera*. Millbank, London : New York: Tate Pub. ; Distributed in North America by Harry N. Abrams., p.44









*“I’ve been keeping an eye on myself, and I’m going to give you an account now, divided into nice very short chapters, of what I’ve found out about the way I go about things and what concerns me most when I try to generate a certain atmosphere in one of my buildings. Of course, these answers are highly personal. I have nothing else. They are also highly sensitive and individual. In fact, they are probably the products of sensitivities themselves, personal sensibilities, making me do things in a particular way.”*

Peter Zumthor  
*Atmospheres*, p.21







*Icarus*





**Steam and Sunlight**  
Fig. 1.0

### **Stump Pool in April**

*Crack willows in their first pale eclosion  
Of emerald. The long pool  
Is simmering with oily lights. Deep labour  
Embodied under filmy spanglings. Oxygen  
Boils in its throat, and the new limbs  
Flex and loosen. It keeps  
Making the effort to burst its glistenings  
With sinewy bulgings, gluey splittings  
All down its living length.*

*The river is trying  
To rise out of the river.*

*April  
Has set its lights working. Its broad wings  
Creased and humped in their folds, convulse  
to lift out over the daffodils.*

*The soft strokings  
Of south wind keep touching all its membranes  
Into spasming torments. It knows  
The time has come for it to alter  
And to fly, and somehow to tangle  
With the hill-wood – waiting high there, flushed  
In her bridal veil of haze violet.*

Ted Hughes  
*River, p.27*



**Moth to Light**  
Fig. 1.1



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## A Flight *towards* the Luminous

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*The soft strokings  
Of south wind keep touching all its membranes  
Into spasming torments. [The breeze upon  
its newly grown appendages causes violent  
movements; contortions are severe, painful and  
involuntary.]*

*It knows  
The time has come for it to alter  
And to fly, and somehow to tangle  
With the hill-wood – waiting high there, flushed  
In her bridal veil of haze violet. [What it has  
become is no longer resisted; it flies toward the  
soft glow of sunlight, toward an awaiting lover  
in the sky.]*

The final stanza of *Stump Pool in April* arouses an image of flying - and flying high. The wisps of steam that rise nearer to the soft glow of sunlight and the bird that ascends towards the luminous is a scene that suggests a welcomed embrace. However, their interaction is approached with apprehension: the flight is not considered a *reception* - there is no union, no awaiting lover. There exists only an *allure* between two entities, between a figure that is not entirely revealed and a flyer that has become enticed by the mask of its pleasurable appearance.

Like a moth attracted to light, the flyer is inevitably drawn to its death. The haze that diffuses the sun's colour, shape and intensity is surely surpassed as the distance between the two narrows, lifting the veil and exposing the light's true character.

This chapter expresses their encounter through sculpture.



**The Apex of a Fire**  
Fig. 1.2

# The Making of a Semblance

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Drawing upon the perceived image of a winged figure approaching a source of intense heat, the process of making the sculpture begins by selecting a material. Red cedar is chosen for its combustible properties. It is a soft wood that burns at a faster rate than hardwoods, displaying pronounced textural changes from its original state almost instantly.

1

## Thrown into the Flames

With a cedar log in hand, an outdoor fire is set up during a winter's night. The snow covered ground is shoveled from a bed of concrete where a stacked, lattice-like structure of newspaper, kindling and small branches is built. Once lit, the fire is left to develop to the apex of its intensity. Then - and only then - the meter long log is thrown into the heat of the flames. It is turned as soon as it begins to crackle to ensure that its entire length and all its surfaces are only touched by the fire. The log is then removed and left to cool naturally.



Cedar Log | pre-fire  
Fig. 1.3



Cedar Log | post-fire  
Fig. 1.4

In the morning, the charred log is transported to a studio where brighter and more consistent lighting reveals the extent of the burn. The colours, textures, and scents are vibrant: the once reddish-brown surfaces pulse with tones of black, glistening as if they had been shellacked by the flames. A fine, delicate film defines these lustrous areas, flaking away upon contact. Yet, areas directly adjacent transition into a matte finish, dulled into light-absorptive surfaces that are more resilient to touch. What seems to be a fine powder, almost granular in texture, is compacted within these areas. It is here that the cedar appears most heavily scorched and emits a stronger scent than the reflective surfaces. When seen in relation to a photograph of the cedar's once rough cut and linear grain, all sense of direction becomes lost within networks of deep channels that split and traverse the surface into irregular-shaped patches. The wood certainly has a greater degree of expression, appearing lively despite being burnt.

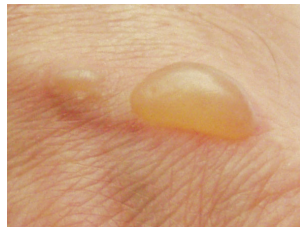


**The Blister in Low Light**  
Fig. 1.5

## 2

### **Blistering the Burn**

Whether certain areas of the log are exposed to a greater intensity of heat, are of a slightly different density of wood, cellular structure or moisture content than other areas, the transformed surface has potential to be responded to. Just as the skin of a hand blisters when exposed to high temperatures for a short duration, the developing pocket of serum underneath the smooth, transparent and opaque layer of skin is expressed upon the log. Strips of thin plastics that vary in width, length and opacity are heated and melted onto the charred surfaces; sweeping plastics emerge from one crevice and disappear into another to mimic the organic formation.



**Blistered Hand**  
Fig. 1.6



**Blistered Log**  
Fig. 1.7

## 3

### **Interactions with Light**

During the two day process of blistering the log, the quality of light within the studio changed. The east facing windows of the small room admitted early morning light, piercing the space from wall to wall. At times the light would soften as clouds rolled in front of the sun. Most of the time, however, diffuse light entered the room as the sun moved to the south and west. These changes in lighting conditions effected the reflections on the plastic-wrapped log; the most noticeable change came when working during the evening and night hours next to a singled sourced, low-wattage light bulb. Light expanded and contracted, twisting upon the plastics' undulating contours with fine threads of reddish-orange light - a stark contrast to the serene glow during the day. The light folded back onto itself, converging and diverging. It was at this time that the literal process of burning became captured within a moment: the charred log was surrounded with the intensity and vitality of fire itself, flickering with the chaotic lick of flames.

## 4

### **Accidental Behaviour**

The wood and plastic object fell from its supports as it was being blistered. Though the fall did not break the log into pieces or snap the plastics, there was a scatter of ash upon the floor that radiated from the point of impact. When re-suspending it to continue melting plastics, a relationship emerged between the object and the residue; it was as though the log was deteriorating in the air. Initially, this accident and the constant change to the quality of light were infuriating, but they were soon welcomed and embraced. The unpredictable nature inherent to each step of the process came to inform the final elements and arrangement of the sculpture.



**The Final Arrangement**  
Fig. 1.8

# The Sculpture

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Composed of three elements - a light fixture, a charred and blistered cedar log, and a white canvas - an intricate scene develops that does not imply a progression and does not tell a story. Rather, potentials arise from their arrangement and the articulation of the objects that comprise them.

When viewed in isolation each object is worthy of intrigue and perhaps even fascination: the delicate filament that smoulders orange-red, the sheen of scorched wood in light, and the scatter of ash below. At a material level, aspects of the objects are vibrant in colour, texture and pattern. However, when viewed in their entirety, tensions become apparent: a spherical glass enclosure houses the filament, wisps of clear and milky plastics sweep around the length of the charred log, and the white plane catches the vibrant debris. Here, the stiff contrasts the pliant and the sterile confronts the expressive. They become essential to the assembly of the scene, informing spatial arrangement between one another. The canvas with ash has no bearing without what's suspended above, nor does the plastic wrapped log without the light fixture.



**Filament**  
Fig. 1.9

The light fixture is the most peculiar element. As though the filament were a lick of a flame that has been caught, the light bulb suggests it holds the force that is responsible for the condition of the wood and the residue below. In this sense, the literal act of transforming the wood has been separated and reconstructed into a stationary event. However, there is something unsettling about this factual, linear progression. Something greater is at play; the work somehow instills a melancholic mood, charging the air around it and between it. This has everything to do with disposition. Having the light bulb dangle from the end of a line of conduit physically fixes the bulb to a particular position in space. It sits there, motionless, as though it were a mere observer to its surroundings. Yet, the bulb is active. It has the potential to burn anything that comes close to it, though it is not able to behave maliciously. There is, then, innocence to its destructive nature that suggests the light is not the sole cause of the event. Perhaps there is another force in which an event unfolds around the bulb.









**Scorched Surface**

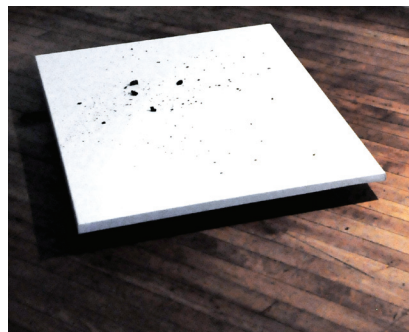
Fig. 1.11

In comparison, the blacked log is suspended above the bulb by fishing line where it appears free from physical constraints. A sense of weight overcomes one end, skewing the wood off of a level plane. Gluey strands of plastics fill vein-like crevices where the wood is most heavily burned. They draw away from the surface, turning from opaque to transparent as though the surface of the log is blistering against the intensity from the force held within the bulb. Ash accumulates directly underneath the weighted end of wood which suggests it is on the brink of falling, flirting with catastrophe. Any closer to the bulb and it will surely come crashing to the ground. Yet, it seems to also be on the verge of bursting into the sky. The angular positioning suggests a trajectory at the other end, as though there is an effort to burst upwards, to rise away from the walls that surround it and the fire that, perhaps, restricts it.

It is rising? Descending? It's definitely flying.

*“Everything can co-exist, and the opposition can vary or even be reversed depending on the viewpoint one adopts, that is, depending on the value one considers.”<sup>1</sup>*

The co-existences become perplexing, collapsing any singular story that tries to explain what exactly is happening. Although the light bulb behaves as the force that is responsible for the event through no fault of its own, there seems to be another force present, invisible and acting independently of the fire. Whatever it may be, the white surface records its rising-descending.



**Residue**  
Fig. 1.12

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<sup>1</sup> Deleuze, Gilles, 1925-1995. 2003. *Francis Bacon : The Logic of Sensation*, ed. Francis Bacon. Minneapolis: University of Minnesota Press., p.66

*Feathers cradle from the sky;  
coalescence with the air, dissolved.  
Naked he falls, cast to the depths,  
a display unfolds once again  
for the World to see.*

*She blinks a new day,  
cleansing the tainted canvas,  
and anxiously awaits the flight  
of her next lover.*

# An Uncontrollable Flight

---

The sense of melancholy within the framework brings about an invisible force with an undeniable presence: the critical proximity between the light bulb and the charred log no longer operates upon a plane of simple physical interaction. Rather, the threshold entered - or trying to be escaped from - resonates with a state of mind that burns just as vigorously as the apex of fire itself.

When considering the sculpture as an Icarian myth, of a boy that flew too high, the charred log becomes the boy's body, the light bulb becomes the sun, and the shimmer upon the floor becomes the shimmer upon the ocean's surface. The ash, of course, becomes his shorn wings. It is by this perception of the sculpture that manifests Icarus' inflamed sense of self-confidence: each beat of his wings, each contraction and extension that draws him nearer to the burning sphere in the sky radically overwhelms his naive mindset.

Just as a moth is attracted to light, Icarus soars uncontrollably towards the luminous figure. Half-man, half-bird, he enters the uncontrollable pleasure of flight the instant he is released into the air. Unlike the moth, however, he is able to recognize the true nature of the light and cries out "Father!" and "Father!"<sup>2</sup> But it is too late; his coalescence with the air is broken and his intoxication extinguished as he falls from the brilliant blue summits into a watery grave. Hubris is a deadly mistress.



"Feathered Fingers"  
Fig. 1.13



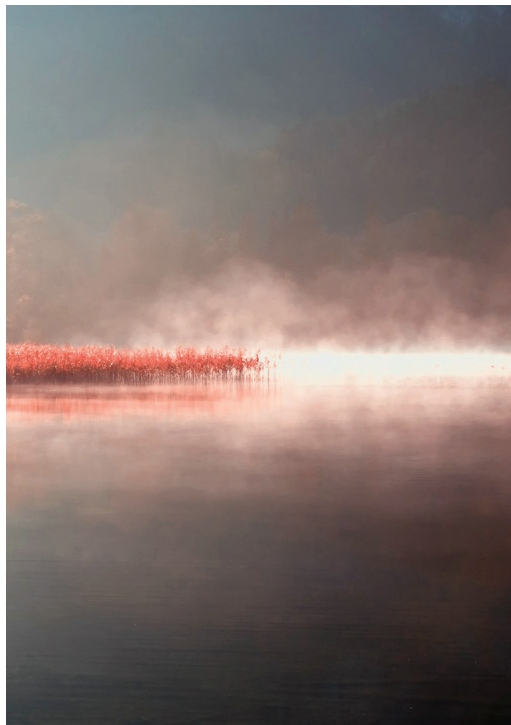
Last View  
Fig. 1.14

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2 Ovid, 43 B. C. -17 A. D., and 43 B. C. -17 A. D. Ovid. 1983. *Metamorphoses*, ed. Rolfe Humphries. Bloomington: Bloomington: Indiana University Press., p.188



# *Sky Burial*



**Morning Steam**  
Fig. 2.0



### **Stump Pool in April**

*Crack willows in their first pale eclosion  
Of emerald. The long pool  
Is simmering with oily lights. Deep labour  
Embodied under filmy spanglings. Oxygen  
Boils in its throat, and the new limbs  
Flex and loosen. It keeps  
Making the effort to burst its glistenings  
With sinewy bulgings, gluey splittings  
All down its living length.*

*The river is trying  
To rise out of the river.*

*April  
Has set its lights working. Its broad wings  
Creased and humped in their folds, convulse  
to lift out over the daffodils.*

*The soft strokings  
Of south wind keep touching all its membranes  
Into spasming torments. It knows  
The time has come for it to alter  
And to fly, and somehow to tangle  
With the hill-wood – waiting high there, flushed  
In her bridal veil of haze violet.*

Ted Hughes  
*River, p.27*



**Pre-Boil**  
Fig. 2.1

---

## A Strange Departure

---

*The river is trying  
To rise out of the river. [There is an effort to  
phase-shift one more time, only this time from  
water into steam.]*

*April  
Has set its lights working. [Spring is in full  
swing forward. There is no reversal anymore; the  
force that animates intensifies.]*

*Its broad wings  
Creased and humped in their folds, convulse  
to lift out over the daffodils. [From gross to  
subtle, water's transition is the birth of a bird;  
steam rises to take flight, suddenly departing  
from the body of water.]*

The intermediate stanza of *Stump Pool in April* arouses an image of taking flight. The steam that rises and the bird that emerges to lift out over the daffodils is perceived as a graceful *and* violent moment.

Tensions develop as wisps emanate from the water's still and undisturbed surface. The transition appears delicate to the point of becoming serene, absent of any typical indications for a pre-boil to occur; there are no sounds, no bubbles and no movement that would suggest a force is even present. Yet, there must be *something* for the change of state to occur, something that is of monumental scale and energy and is not found entirely within the river alone. There must be an irritant, an invisible agitator - even a caresser - that causes the water to suddenly unfold into the air. Perhaps there is an interaction between two bodies that is not visually apparent that yields the *calm explosion*.

This chapter investigates the potential encounter of invisible energies and is expressed through sculpture.



**Maquette**  
Fig. 2.2

# The Making of a Semblance

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Selecting a material in response to a visible and tactile force is no longer applicable. Without a clear understanding of what is being acted upon or who is acting, a new approach and process is required to make a sculpture. The following is an account at capturing the hidden intensity that lifts weight into the air.

1

## **Sawing & Draping**

The soft wood of pine is initially selected for its ease of workability. A scrap piece of a 2x4 is sawn into approximately 20 pieces that are roughly the size of pen blanks. All are similar in dimension and are assembled into a lattice-like framework that interlocks at the base. Gaps between joints develop as the structure is built taller and increase in size and frequency. The result is a tower that transitions from a solid mass to a light admitting aggregate.

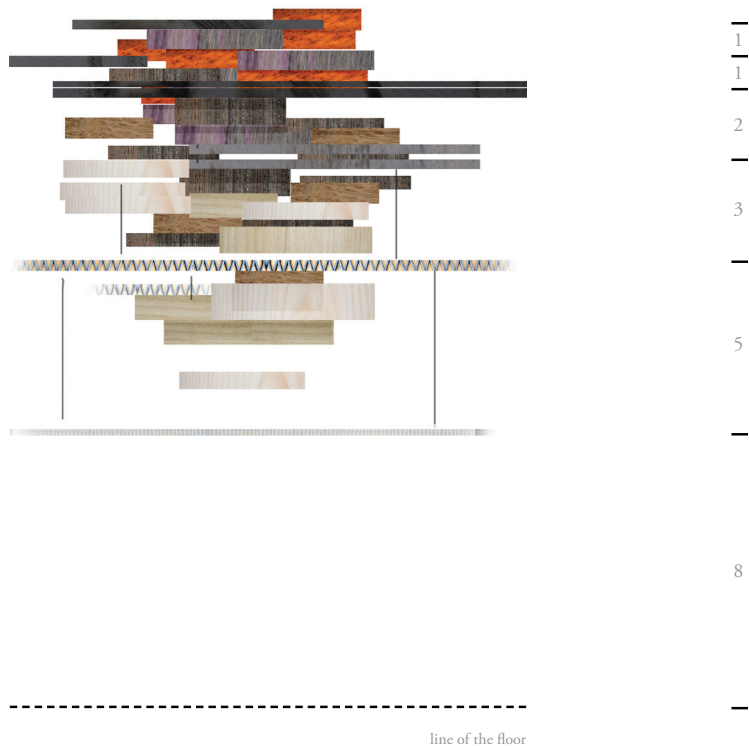
The object is then boxed by four sheets of plastic. From opaque to transparent, from top to bottom, a gradient is applied to each surface that, when placed in proper lighting conditions and upon a beige backdrop, makes the wood and plastic object lose colour, texture and articulation. The gross becomes subtle. However, this experiment is only a representation of a transition: the intensity of changing from one extreme into the other is not captured, force is not rendered at all, and there is no sense of movement. The attempt is too delicate, too pictorial, and relies too much upon its environment. Simply stated, it does not look - let alone feel - like it's *steaming*. All is not lost, though. The concept of gradation has potential that can be pushed further despite its current lack of vitality.

2

## **Gradients**

Keeping to the material of wood, a trip to a specialty store is taken where colours can be seen, textures and weights can be felt, and surfaces can be sniffed. A total of six species are selected once an hour long interaction is complete.

At first, a gradient is built based upon density of the woods. This is based upon their weight per volume as well as their hardness. Coincidentally, sorting the woods in this manner also applies a colour gradient: the brightest, richest colours are also the heaviest and least impressionable. From intense orange and deep purple to the wash of pale beige, the visual gradient correlates to the sense of touch.

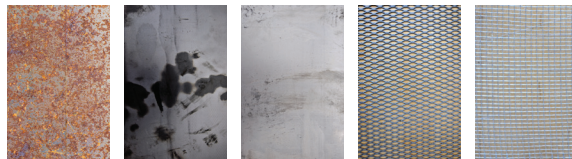


**Material Collage**  
Fig. 2.3

A third gradient is applied to emphasize the visual reading of weight. Steel of varying thickness are added, ranging from low-gauge sheets to pliable meshes. A total of five are chosen with the intent of placing them between the each species of wood in accordance to the Fibonacci sequence. At the top, a corroded, thick steel sheet and a slightly thinner steel sheet sandwich a single piece of the orange wood; below, the purple wood is placed between an even thinner, non-discoloured metal sheet. This method is applied until the palest wood and most delicate steel mesh is used.

The assemblage is not treated with a consistent method of construction. The paler and softer woods near the bottom, as well as the meshes, are physically separated from one another and are suspended by thread. This contrasts the glued and clamped construction at the top.

When seen as an object in its entirety, all the gradients combine to give a pronounced reading of *molecularization*. All that remains is to make it fly, to give it a movement and a force against gravity.



Steel Gradient  
Fig. 2.4

### 3

#### **Making it Fly**

Supported upon three wooden dowels that are attached to a black base, the wood and steel assemblage begins its first exercise in flight. In spite of all the effort to get the object to balance, it collapsed underneath its awkward weight distribution, laying broken upon the floor in a pile of individual pieces. Furthermore, and prior to its downfall, it again did not look or feel like it was flying.

Rather than re-building the entire object, alterations to a digital picture are made on the computer. The greatest change came from removing the wooden dowels: the sense of gravity disappeared and, more surprisingly, a relationship developed between the object and the floor it was presented upon. As though they were somehow of the same genetic composition, a sense of vitality began to develop. And, with some minor changes to the base, it was as though the floor started to take flight. Only now does the final sculpture come into being.



**Flying Lesson # 1**  
Fig. 2.5





**Flying Lesson #2**  
Fig. 2.6



**Taking Flight**  
Fig. 2.7

# The Sculpture

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Composed of *two* elements - an object of wood and steel, and a black base - forces are manifested without a light source. The arrangement and articulation of the elements in relation to one another and to the *floor* they are presented upon allow for sets of interactions to develop. Their precise positioning creates rhythms that induce a surge of energies, animating the materials into a powerful scene.

*“The important point is that the two sensations are coupled together like ‘wrestlers’ and form a ‘combat of energies,’ even if it is a disembodied combat, from which is extracted an ineffable essence, a resonance, an epiphany erected within the closed world.”<sup>1</sup>*

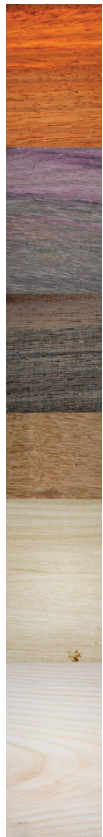
In contrast to the first sculpture, the plinth used to collect debris is no longer a simple, attentive surface: it now bodes a sense of movement, transitioning from its perfectly linear and perpendicular edges into a chaos of threading. Its solidity dissolves as the thick and coherent tapers into the fine and sporadic. The base has become *active* or has, at least, been *activated*.

Consequently, the floor beneath the base is revealed, exposing an area that approximately matches the size, color and structure of the object above. There is a distinct resemblance between the two. The floor’s surface displays a wash of colours where browns lighten into beiges and beiges intensify into tints of orange. The narrow boards and the lines of dirt that have accumulated between their joints are amalgamated into a unified, rooted surface that, in relation to the object highest above, seem to have been separated into individualized, pronounced blocks of single colours with defined, black edges. It is as though a piece of the floor is removed thereby displaying a depth that was not visually apparent.

The convergence and divergence of strands that stem from the black base and are attached to the object’s underside suggest that the section of the floor has been rotated. Strands funnel into a single point but then splay, tracing some sort of kinked movement. Surely, the wood and steel object above is to be held accountable for the condition of the black base. Yet, there remains something unsettling. Perhaps the floor is not entirely at fault when considering the grip the base has upon the flat surface.

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<sup>1</sup> Deleuze, Gilles, 1925-1995, 2003. *Francis Bacon : The Logic of Sensation*, ed. Francis Bacon. Minneapolis: University of Minnesota Press., p.57



**Wood Gradient**  
Fig. 2.8

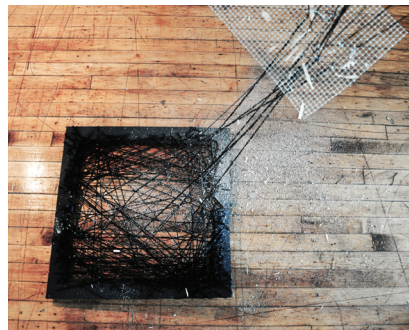
Placed slightly above and covering a small area where the wood is most heavily discoloured, the base seems to confront the floor. The narrow gap that runs uniformly along its perimeter suggests a degree of resistance in comparison to its sparsely woven centre. In this sense, it is as though the floor breaks through the covered area, taking flight away from what seems to agitate it even though the base attaches itself as though it does not want to let go.

In addition to the floor's reaction to remove itself from what seems a hostile situation, its stimulated trajectory seems to become increasingly difficult as it soars through the air. As though it were encountering a second resistance, the top steel sheet is corroded and the one just below is discoloured. Further below, the sheets turn to a thin and flexible mesh. This durable-pliable gradation is present within the woods as well, going from most dense to least, and from fiery orange to muted beige. The further the floor rises the more difficult its ascent becomes, compressing over time.

Off to one side of the base and lying upon the floor is debris. Chips of wood and sawdust from the lightest coloured wood suggest the object is also deteriorating. Detaching itself from the floor and travelling through the medium of air seems to be a monumental task, hardening-dissolving as it rushes skyward.

Is it liberating itself? Committing suicide? It's definitely taking flight.

Whatever the scenario may be, the co-existences are set into motion by a force that is not physically attainable. Energies manifest as the two elements interact, rendering the scream more than the horror.<sup>2</sup>



**Residue**  
Fig. 2.9

2 Deleuze, Gilles, 1925-1995, 2003. *Francis Bacon : The Logic of Sensation*, ed. Francis Bacon. Minneapolis: University of Minnesota Press., p.51

*Your breath is now still,  
no warmth to your skin.  
Do not be afraid.  
Everyone before you has died.  
You cannot stay  
anymore than a baby  
can stay forever in the womb.  
Leave behind all you know,  
all you love.  
Leave behind the pain and suffering;  
this is what death is.<sup>3</sup>*

# A Funerary Ritual

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In Tibet there are a number of ways to dispose of the deceased. The body can either be buried in the earth, immersed in water, burned by fire, or receive an aerial burial commonly referred to as a *sky burial*.<sup>4</sup> In either of the treatments, the concept of decomposition and consumption remains prevalent: occurring naturally over time, consumed by fire, or eaten by animals, the flesh, skin, bones, organs - everything, or almost everything that comprises the physical body - is eventually returned back to nature through one or more of four elements. The rate at which disposal occurs varies from ritual to ritual. Sky burial is a near-instant disposal that is matched only in rate by incineration. Since combustible materials are a limited resource within the barren landscape of Tibet and vultures plentiful, the body is often laid out for the birds to eat.

The procedure, simply described as *rirkyel*, meaning *to carry into the mountain*, begins by wrapping the body in white cloth.<sup>5</sup> Monks then take the body from the village toward higher ground where a two-stage feeding commences upon a charnel ground. Friends and family members are welcomed to attend the death ritual of their beloved.

## **Dismemberment**

At first the body is dismembered. Limbs are chopped from the torso and scattered for the gathering birds. In some cases, the body parts are tethered to the ground to prevent them from being dragged around or carried away as the scavengers work their way into a feeding frenzy.<sup>6</sup> Internal organs such as the liver, heart, kidneys and brain are sometimes withheld to entice the birds into a second feast.<sup>7</sup>

## **Crushing**

When only bones remain the corpse-choppers become bone-crushers. They collect and pound fragments of the skeleton with axes or hammers. A paste is made by mixing *tsampa* - roasted barley flour - with butter, fruits, internal organs and powdered bone.<sup>8</sup> This mixture is then fed to the birds.

Once all parts, pieces, members, and fragments of the body have been consumed, the vultures fly away, digesting the body they have just gorged upon. Nothing more than the residue of blood, powder and excrement remains which is soon absorbed into the earth.

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3 Sky Burial: Tibetan Burial Ritual, video introduction (<http://www.youtube.com/watch?v=ylzMXJwCCpM>) (accessed April 2011)

4 Gouin, Margaret E., 1949-, and Margaret E. Gouin 1949-. 2010. *Tibetan Rituals of Death: Buddhist Funerary Practices*. London ; New York, NY: London ; New York, NY : Routledge., p.46

5 Ibid., p.59

6 Ibid., p.66

7 Ibid., p.67

8 Ibid., p.65



a



b



c

**The Approach**  
Fig. 2.10





a



b



c

**The Feast**  
Fig. 2.11



**Tibetan Mountain Range**  
Fig. 2.12



**The Tools and Remains**  
Fig. 2.13



# *Prometheus*



**River Churning**  
Fig. 3.0

### **Stump Pool in April**

*Crack willows in their first pale eclosion  
Of emerald. The long pool  
Is simmering with oily lights. Deep labour  
Embodied under filmy spanglings. Oxygen  
Boils in its throat, and the new limbs  
Flex and loosen. It keeps  
Making the effort to burst its glistenings  
With sinewy bulgings, gluey splittings  
All down its living length.*

*The river is trying  
To rise out of the river.*

*April  
Has set its lights working. Its broad wings  
Creased and humped in their folds, convulse  
to lift out over the daffodils.*

*The soft strokings  
Of south wind keep touching all its membranes  
Into spasming torments. It knows  
The time has come for it to alter  
And to fly, and somehow to tangle  
With the hill-wood – waiting high there, flushed  
In her bridal veil of haze violet.*

Ted Hughes  
*River, p.27*

*Crack willows in their first pale eclosion  
Of emerald.* [A crack willow is a deciduous tree found on the edges of rivers, streams and marshes. In early spring small flowers bud with yellowish, hairy scales that turn bright green as the season progresses. A distinct cracking sound is produced when its fragile twigs break from the slightest breeze or the lightest rainfall.¹]

*The long pool*  
*Is simmering with oily lights.* [A body of water is undergoing a phase shift. From solid to liquid, the pool's surface becomes a smudge of tones that bleed from the white of snow into the black of water.]

*Deep labour*  
*Embodied under filmy spanglings.* [The river is slowly churning, phase shifting from an effort that lies within the depths of itself.]

*Oxygen*  
*Boils in its throat, and the new limbs*  
*Flex and loosen.* [The river is coming to life, taking an organic life form of an animal. It is growing appendages as the grip of winter is being released.]

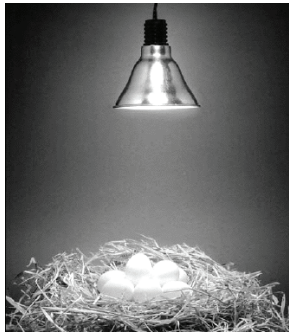
*It keeps*  
*Making the effort to burst its glistenings*  
*With sinewy bulgings, gluey splittings*  
*All down its living length.* [There are repeated attempts to further its transformation.]



---

## A Tormenting *Flux*

---



**Incubation**  
Fig. 3.1

The stanza that begins *Stump Pool in April* arouses an image of growth. The budding of a plant, the river in thaw, and the birthing of an animal are early stages of organic developments that occur gradually over time. Reliant upon the *gentle* application and retraction of warmth throughout the day, the fluctuating temperature on a receiving material - upon a receiving body - is perceived as a process that is *tormenting*.

With any rhythm there are extremes. Just as sun brings warmth as it rises to turn the river from ice to liquid, the states of water are reverted as the sun recedes. However, it is a process that is not perpetual; there is a sense that something is being built towards, that something is being created as the season progresses.

This chapter investigates the struggle associated with change, and is expressed through sculpture.

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<sup>1</sup> [http://www.na.fs.fed.us/fhp/invasive\\_plants/weeds/crack-willow.pdf](http://www.na.fs.fed.us/fhp/invasive_plants/weeds/crack-willow.pdf) (accessed on June 2013)



**Daily Flux**  
Fig. 3.2

# The Making of a Semblance

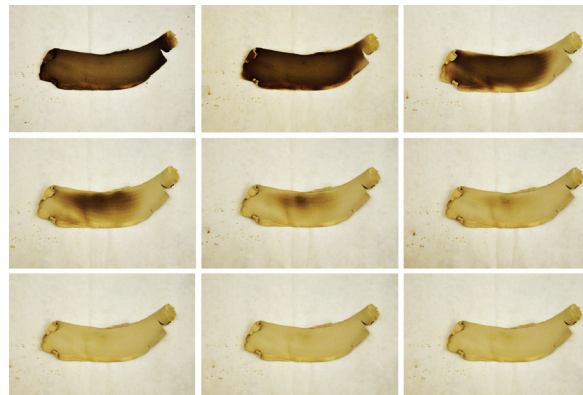
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Drawing upon the changing intensity of heat throughout the period of a day, the process of making a sculpture begins once again by selecting a material. This time, however, clay is chosen for its bold reaction to the slightest changes in its environment, promptly flaunting new colours, textures and scents. At first, two experiments are conducted to observe the cyclical properties of the material as it dries and is submerged in water.

1

## Drying

A quarter-inch thick section is sliced from a slab of clay. Placed upon parchment paper and located far from any window, the heavy, damp and impressionable piece is left to dry naturally over a period of two hours within a climate conditioned building. Photographed at 15 minute intervals, the material's change is documented:



Naturally Dried Clay  
Fig. 3.3

The most apparent change is the colour. The once dark brown surface lightens significantly, becoming pale to the point of a yellowish, muted hue; any areas that were lustrous have now dulled completely and, to the touch, are no longer cool and moist. Instead, a fine powder has developed upon its surface during what seems to be a process of hardening: edges are the first to become rigid and take on a subtle curl, and surfaces become brittle to the point of breaking. This contrasts the previously soft and pliable properties of the clay as moisture is drawn out. Consequently, the thickness and area occupied has been reduced, as has its weight. The most subtle change comes from its scent: the pungent and earthy odour from when the clay was freshly sliced is weakened.



a



b



d



c

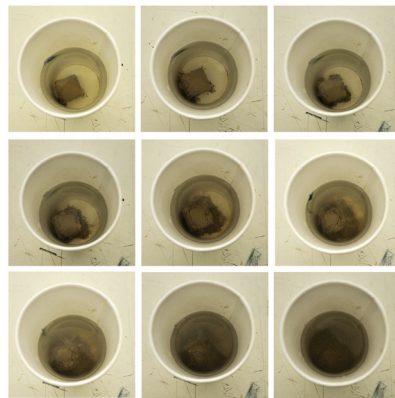
**States of Clay**  
Fig. 3.4

Even though the clay produces a beautiful gradient over time, extremes have not yet been tested, limits not yet pushed. Any vibrancy, any life to the material has been withered it into a bland state. So, for a short duration, intense heat is applied by a heat gun in hopes to agitate the material into some sort of pronounced expression. Small fractures begin to develop, splitting the surface into fragments as though it were on the verge of coming apart. A gentle tap with a hammer sends the material into shards. Perhaps if the heat were applied for a little longer, if the intensity were just that much stronger, it would have cracked on its own accord or begun to peel.

## 2

### **Submerged in Water**

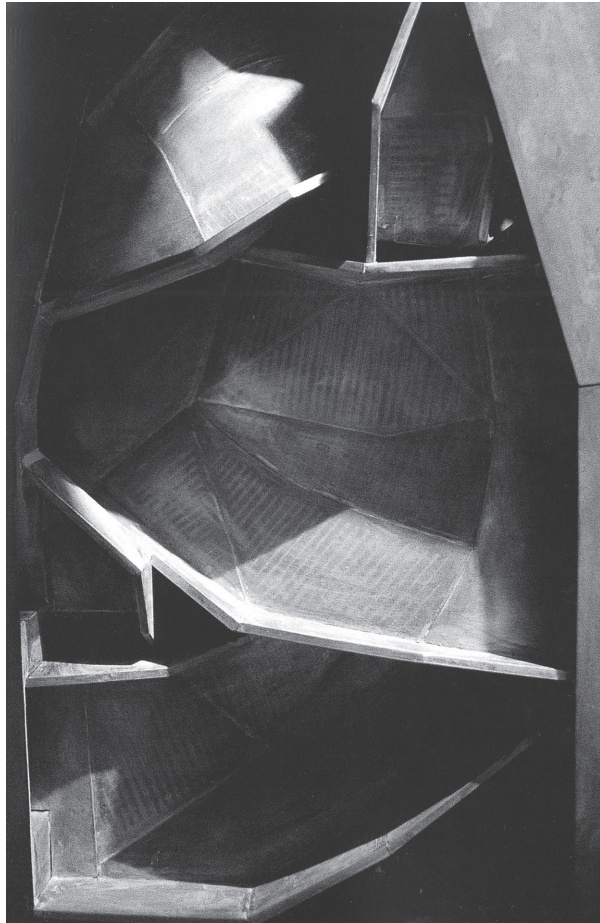
A two-inch cube of clay is formed, left to dry overnight and heated the following day. In this respect the material is treated in a similar manner to the prior experiment, expressing similar colours, textures and scents. However, by submerging it in water, by surrounding it in a moisture-rich environment, the other extreme is tested. The cube is dropped into a cup of water and photographed at 15 minute intervals:



**Naturally Dried Clay**  
Fig. 3.5

Clearly the material was not heated with enough intensity for it to be cured into an irreversible state. It soon starts to absorb water, darkening and softening towards a workable condition. For a brief moment the clay cube is able to be molded with a degree of coherence and consistency but the longer it stayed submerged the more difficult it became to work with, eroding into a muddy, viscous, and dark brew. It is then left standing, untouched for the an entire week, to allow all moisture to be evaporated. A base of hard, smooth and light coloured clay forms at the bottom.

Ultimately, the experiments of hydrating and de-hydrating explore the cyclical quality of the material. From one extreme to the other, clay is able to revert states as long as it is not heated above a certain temperature. This flux of departing and returning becomes an intriguing rhythm that is extended into a volumetric experiment.



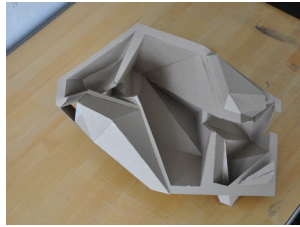
**Light and Volume**  
Fig. 3.6

# 3

## Building a Volume

The play of light upon faceted surfaces (left) informs the creation of a volume. From light to dark, from convex to concave, the nooks, corners and edges of the model may allow for a multiplicity of gradients to be present at the same time. Just as the light within *Icarus* has energy, illuminated surfaces should dry. Areas that are cast in darkness are of a different microclimate, responding to an absence of, or lower, temperature. Perhaps the cyclical behaviour of clay can be captured this way, offering a realm of expression in a single object.

The construction begins with a flat surface. Rigid lines comprise the perimeter of an irregular, somewhat elliptical shape which is then given a consistent width. Breaks are added to the outline and finger-like extensions point inward. The interior is then cut away to make a frame in which the voids are either pushed away or pulled towards by a series of faceted surfaces. The result resembles a crumpled piece of paper, creased and peaked where no two surfaces are of the same area or shape as another.



Volume | Bare  
Fig. 3.7



Volume | Paper Skin  
Fig. 3.8

The flimsy object is wrapped in a glue and newspaper mixture to give it strength. Two layers are applied and are left to dry. A thick coat of wet clay is then added to make the final layer of the object's skin. From there it is quickly carried to a nearby window, misted with water and left to respond to the light of the sun. At first, a colour gradient sweeps across the illuminated surfaces that begins from where the clay is the thinnest and least moist. It then spreads across the surfaces at a rate dependant upon the degree of exposure. Eventually, cracks start to develop and the dark nooks begin to dry. Only a sense of destruction becomes evident.

Preserving the *short duration* between the object's moist and cracked state, between surfaces that are heavily heated and surfaces that are mildly grazed, stirs another investigation. Where contrasting conditions were held at one moment in time displayed the greatest *vitality*. Propping the object upon dowels with no real conviction, the surprisingly heavy piece was frantically and haphazardly glued upon a black base to make it stand upright. The drying process was then re-staged and informs the final attempt at making sculpture.

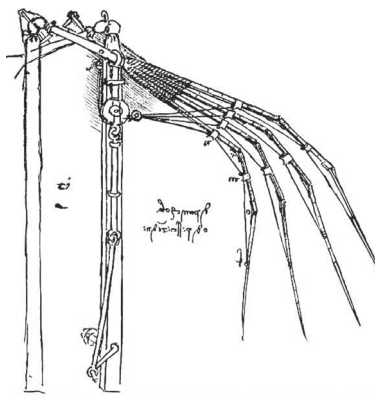


**Light and Clay**  
Fig. 3.9





**Light, Clay and Steel**  
Fig. 3.10



**Articulated-Joint**

Fig. 3.11

# The Sculpture

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The housing, filament and conduit that were all once dangling as an essential participant in the first sculpture have been removed off-frame. Only the glow of light remains, merely a soft gradient fading from right to left that, in relation to the clay and steel object, the black base and the dowels, causes a series of movements.

When textures are viewed in isolation the clay shows undeniable signs of aggravation: illuminated surfaces are dry and cracked, edges are furled ever so slightly, and granular particulate lies upon the black plinth below. At times, fine hairline fractures increase to broad and pronounced depths, traversing entire areas of the clay body in a sporadic, web-like texture. It is as though the material is being heavily heated, crumbling uncontrollably towards a brittle state. Despite its pale colour palette, there is no reflection; the dull luster allows light to penetrate further into the clay, drawing any remaining moisture from the material. There is a surprising duality to the light: its soft caress is also as a powerful force.

The form of the clay object reveals a further intensity to the light. Surfaces overlap and fold back onto themselves while projecting outwards and collapsing inwards; the clay object is not only agitated but mutilated as well, undergoing a bizarre material transformation. Its rigid surface is somehow malleable; flat, dried facets become curved and crease into rigid, jagged edges, sometimes even inverting into themselves. It is certainly uncharacteristic of clay to behave in such a manner that it is only logical to assume the light afflicting the surface operates gradually over time. Though, this does not explain why pleats of clay that are cast in shadow are similar in form to those exposed to light. There is even a circumstance in which a surface has been broken through entirely as though it were pierced. If its trajectory were extended, the light would have to be placed into a vertical position to make such a condition possible. The light, therefore, must be moving freely, circling the clay object.

Additional complexity arises when looking at subtle details. Debris accumulates in locations that can no longer be accounted by gravity alone: a trail spans from one corner of the plinth to the other. Even the structure that keeps the object upright extends its dowels onto severe angles. Perhaps this explains why the clay object appears to be moving towards the soft glow of light, though it provides no motive for what seems a futile act.







**Residue**  
Fig. 3.13

Even though the clay object displays an unusual, contorted behaviour, it has an edge-like condition that can be traced to define a resilient perimeter. Thin and flat in profile, its width and texture remain constant regardless of its exposure to light. Could this contour be indicative of an original form, of what the clay object used to be?

Simply concluding that the light is the sole cause of this event is unsettling. Undoubtedly, the light takes a notable role in the scene but there seems to be another force present: the steel wires, meshes and sheet surrounding the clay skin give reassurance that it will not be reduced to a line of rubble.

Furthest from the object are strands of chicken wire. The large, diamond shaped pattern draws out and away, beginning from and returning to the cracked channels. As though the network of metal strands become an extension of the fractures upon the surface, the loose webbing extends from the surface of the distressed clay where a tighter woven mesh lies nearer to the clay object, stiffer in shape and more restrained in proportion. In closest proximity to the clay object, a thin sheet of stainless steel adheres to the faceted language of its form. The angular and pronounced profiles almost mimic one another but, in contrast to exposed clay, its steel facets are smooth and reflective. The mirror-like surface averts light, consequently revealing the light's true character. A bright, central core dissipates outward, radiating uniformly. At times not much more of a glint upon the steel, it shines brilliantly off-frame with an intensity that is combated by the delicate and durable skin of steel.

Is the object decaying? Growing? It's definitely struggling.

The black plinth that captures the activity above is pooled with dried clay, splattered by droplets that lie next to the powdery debris. A gradient of clay finally sweeps across and off the plinth.

*Furious she rises  
and immediately begins ruffling her feathers.  
Slicing and folding her victim  
she commands obedience.  
Each passing day is relentless,  
and a cruel, constant routine.*

*Even in darkness I am unable to breathe;  
he gently weaves between my jagged fragments,  
releasing her talon-like grasp but is incapable  
of soothing my cries of agony.*



# A Ceaseless Torture

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Something else is present within the sculpture. The growth of appendages that resist the force of light no longer operates on a simple physical level; there is something tremendous that stems from within, an effort that is of an equal or greater magnitude when compared to the force of light. This time, it is not just a mere blister but deep, long-lasting labour.

When considering the sculpture as a Promethean myth, the clay and steel object becomes his liver and the light becomes the rhythmic arrival and departure of the bird and sun. The dowels take part of the scene, too, behaving as the chains by which he is retrained to a rock upon Mount Caucasus. It is by this perception that the elements make up the moment of the destruction-regeneration of his blood-cleansing organ, coming to instill a corresponding state of mind.

On one hand, there is the bird that rises each morning to feast upon his liver. A fresh meal continually awaits it as the source of food is re-grown during the hours of the night. Throughout the period of a day, day after day, the bird is kept alive, sustained and satisfied. This contrasts what Prometheus is enduring. The flux of being eaten alive is a suffering that does not subside when the bird withdraws: surely, there is a degree of relief as the bird's scythe-like talons and beak no longer slice his organ, but the pain does not entirely vanish. The anticipation of what will certainly follow the next morning may be as severe as the torture itself, engraining constant physical and psychological torment.

*“The gods do not deprive Prometheus of fire. On the contrary, his body is consumed by fire. The eagle comes to torment his being at its fiery crucible, his liver, still alive and functioning. The firebird arrives each day to freshen his agonizing wounds, to devour his liver which regenerates again and again. Prometheus, his liver scarred by fire, will not fully attain the stature of hero until a psychologically and archetypally complete description of the hell of his internal organs have been given.”<sup>1</sup>*

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<sup>1</sup> Bachelard, Gaston, 1884-1962. 1988. *Fragments of a Poetics of Fire*. The Dallas Institute Publications., p.85



a



b



c

**Fire Consuming Wood**  
Fig. 3.14



a



b



c

**Falcon Feasting on a Duck**

Fig. 3.15





*The*

*Bruder Klaus*

*Chapel*



**“Untitled V (Bacchus)”**  
Fig. 4.0

### **Stump Pool in April**

*Crack willows in their first pale eclosion  
Of emerald. The long pool  
Is simmering with oily lights. Deep labour  
Embodied under filmy spanglings. Oxygen  
Boils in its throat, and the new limbs  
Flex and loosen. It keeps  
Making the effort to burst its glistenings  
With sinewy bulgings, gluey splittings  
All down its living length.*

*The river is trying  
To rise out of the river.*

*April  
Has set its lights working. Its broad wings  
Creased and humped in their folds, convulse  
to lift out over the daffodils.*

*The soft strokings  
Of south wind keep touching all its membranes  
Into spasming torments. It knows  
The time has come for it to alter  
And to fly, and somehow to tangle  
With the hill-wood – waiting high there, flushed  
In her bridal veil of haze violet.*

Ted Hughes  
*River, p.27*



**Triptych of Sculptures**  
Fig. 4.1



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## A Dionysian Progression

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*Time, energy and change: embracing the suffering-ecstasy complex of the river's transition.*

From the flux of a struggle to the sudden departure into the sky and the intoxicating flight towards the luminous, liminal conditions of the river's phase-shift are captured through sculpture. Just as material behaves organically once rhythms develop between the precise composition of their elements, there too exists rhythms between the sculptures themselves. *Prometheus*, *Sky Burial* and *Icarus* construct a greater framework in which the exponential increase in temperature inherent to *becoming spring* is manifested.

The *Bruder Klaus* chapel is an architectural embodiment of this *trptych* of *time*, *energy* and *change*. The heat that gradually builds into a blazing force and the correlating states of mind are now collapsed into a single moment, sustained within space and time. Whether the progression of *Stump Pool in April* is perceived as *linear* or *cyclical*, the suffering-ecstasy complex is instilled within an atmosphere that is as much about the method of construction as it is the final space.

This chapter investigates how architect Peter Zumthor translates the Dionysian spirit of a 15th century saint into architecture.



**Zumthor's Residence and Studio**  
Fig. 4.2

# The Chapel's Conception

---

Peter Zumthor was approached in 1998 by farmer Hermann-Josef Scheidtweiler and his wife Trudel who were looking to build a shrine in honour of Bruder Klaus.<sup>1</sup> The architect accepted the project, offering his services free-of-charge as a gift to his mother who had a deep affinity for Switzerland's patron saint.<sup>2</sup> The 10-year process during which a project is realized is reliant on coupling the architect with a subject of fascination.

## The Architect

Peter Zumthor is a Swiss architect who won the Pritzker prize in 2009. He is recognized among the architectural community as a phenomenologist who designs environments that are informed by highly tuned sensitivities of personal encounters.

In his manifesto publication *Atmospheres* Zumthor acknowledges that he is moved by certain moments, by subtle things like the sound of footsteps on stone or the gentle murmuring of a crowd.<sup>3</sup> Even the reading of temperature or the play of light upon a rounded surface comes to instill a particular mood, forming a kind of covering that drapes him in an invisible skin.<sup>4</sup> He terms these moments *the magic of the real* and is fascinated with translating visceral, emotional responses into architecture. Time and again he finds himself asking, "*What on earth is it that moves me? How can I get it into my own work?*" to which he can only give a reply about subjective experiences and complex processes that are hardly linear in thought: an enormous amount happens extremely quickly and intuitively when designing.<sup>5</sup> He distills his method into a hierarchy of nine chapters.

Beginning with the selection and treatment of a material and working towards a final, *beautiful* form, he conceives atmosphere through sensual qualities; the stimulation of his five senses becomes more important than formal aesthetics.

By drawing inspiration from the life of Bruder Klaus and his own encounters Peter begins the process of making.

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1 Peter Zumthor: Bruder Klaus Field Chapel, Mechernich-Wachendorf, Germany, 2007. Cement Concrete & Aggregates Australia, issue 07: 28-45., p.22 (<http://www.concrete.net.au/CplusA/issue7>)

2 Ibid.

3 Zumthor, Peter. 2006. *Atmospheres : Architectural Environments, Surrounding Objects*. Basel: Birkhäuser., p.15

4 Ibid., p.23

5 Ibid., p.11



**Bruder Klaus** (A.D. 1417-1487)  
Fig. 4.3

### **The Life of Bruder Klaus**

Bruder Klaus was born in the canton of Unterwalden in central Switzerland and belonged to a respected family of farmers.<sup>6</sup> He and his brother, Peter, were the only children of a civil-serving father and a deeply religious mother.<sup>7</sup> From an early age, Nicolas, only later known as Bruder Klaus, was responsive to the religious training he received during his childhood.<sup>8</sup> He soon became known for his piety and sound judgment, and, as a teenager, had frequent visions of inhabiting a tower in the service of God, speaking of seeing a star that lit up the world while still in his mother's womb.<sup>9</sup> Despite his peaceful disposition, however, he fought in a war against Zurich at the age of 22 and once again 14 years later as a captain.<sup>10</sup> He was recognized by political figures for his clear-sighted wisdom and was repeatedly offered the position of governor of the canton but, for reasons that were unclear to friends, family and acquaintances, he could never be induced to accept it.<sup>11</sup> The eldest of his 10 children took notice of his father's behaviour which had become increasingly mystifying over the years:

*“My father always retired to rest at the same time as his children and servants; but every night I saw him get up again, and heard him praying in his room until morning.”<sup>12</sup>*

At the age of 50 Nicolas withdrew into a valley of the Swiss Alps, feeling irresistibly drawn to abandon the world altogether.<sup>13</sup> With the consent of his religious-minded wife, he became a hermit who resided within a small cell and an attached chapel, rarely eating or drinking, and praying from the hours of midnight to midday; during the afternoon, he would interview those who found their way to his hermitage to seek his advice on spiritual matters.<sup>14</sup> He remained in solitude, seldom leaving his hut until his death:

*“Six years after the Council of Stans, Nicholas was seized with his last illness, which lasted only eight days, but caused him intense suffering; he bore it with perfect resignation and died peacefully in his cell having attained the age of seventy.”<sup>15</sup>*

6 Butler, Alban, 1711-1773. 1995. *Butler's Lives of the Saints*, eds. Paul Burns, New full ed. / rev. by Paul Burns, with a foreword by Cardinal Basil Hume and general introduction by David Hugh Farmer. Tunbridge Wells : Collegeville, Minn.: Burns & Oates ; Liturgical Press., p.660

7 Ibid.

8 Ibid., p.660-661

9 Peter Zumthor: Bruder Klaus Field Chapel, Mechernich-Wächendorf, Germany, 2007. Cement Concrete & Aggregates Australia, issue 07: 28-45., p. 32 (<http://www.concrete.net.au/CplusA/issue7>)

10 (Butler, Alban), p.661

11 Ibid.

12 Ibid.

13 Ibid.

14 Ibid., p.662

15 Ibid., p.663







**Sketch of the Floor Plan**  
Fig. 4.5



# The Design

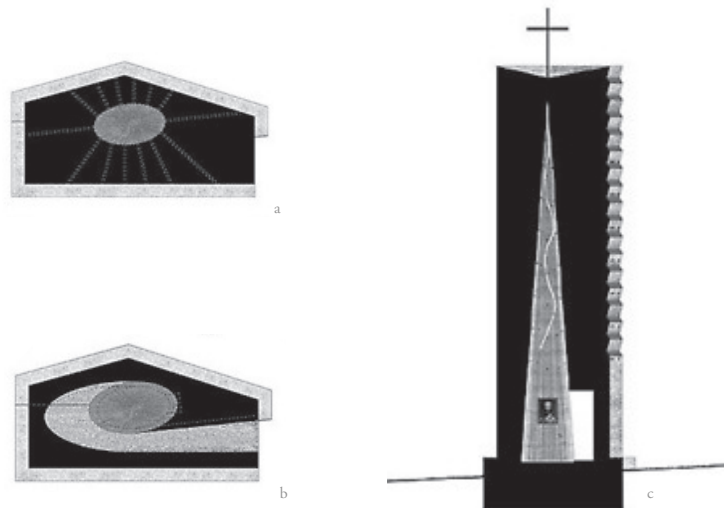
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From early drawings, models and vignettes to the final construction, the concept of refuge is prominent in the design. A single room is always concealed within a clay or concrete volume to give a sense of shelter and security through mass. However, the reading of the space is altered once light and fire are introduced.

## Plans, Sections & Models

The contrasting exterior and interior geometries define the first - and most apparent - set of tensions. The rigid, extruded form of the outside has a stark difference in language to the curved and tapered inside. The sole, triangular-shaped entrance located on the narrowest facade indicates the difference between that which is seen and that which is inhabited. The austerity of the tower is indeed penetrable, and a curved passage leads into the circular-shaped room.

From grade to roof, the amount of material was not part of an original design. Initially, a model shows the tapering volume being traced by a constant thickness along its entire height. This approach resembles a primitive hut, a teepee-like form that is *coated* with a layer of clay. In comparison to later drawings, the teepee is *encased* to resemble a void within a cave where walls seem to be canted from the increasing weight of concrete.



Early Plans and Section  
Fig. 4.6



**An Early Model**  
Fig. 4.7



**Model Iterations**

Fig. 4.8



**Chimney to the Sky**  
Fig. 4.9

### Concrete & Heat

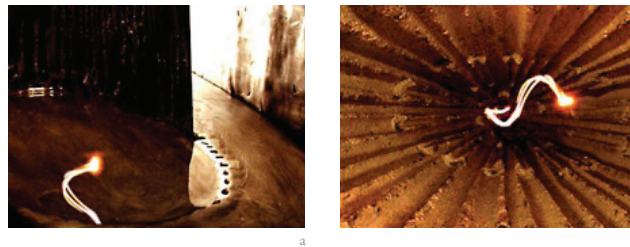
Concrete becomes the single most dominant material of the tower. From the walls of the interior to the walls of the exterior, from the floor to the roof, concrete surrounds and encloses to instill a sense of permanence. Vignettes and sections of the monolithic tower address how surfaces intend to be treated: the smooth and reflective quality on the floor is contrasted by the dull luster of the vertically ribbed interior walls which, in turn, contrast the layered language of the exterior. The process of casting concrete for each condition begins to define the project's character.

*“Material is endless. Take a stone: you can saw it, grind it, drill into it, split it, or polish it - it will become a different thing each time. Then take tiny amounts of the same stone, or huge amounts, and it will turn into something else again. Then hold it up to the light - different again. There are a thousand different possibilities in one material alone.”<sup>16</sup>*

The addition of a heat element alters the reading of the interior. The delicate, spiraling thread that is lit allows warmth onto the coldness and severity of the concrete. More importantly, by elevating the wick slightly above the focal point of the plan, the mass of concrete seems to be reacting to the *radiance* of temperature. The interior is not encased at all; rather, it seems to be eroded by a force that emanates from within.

As the project furthers in development, the concept of a void becomes increasingly apparent. By slicing away the tip of the tower to create a second opening, the form of a rudimentary kiln is created. Now, there is potential for air to be drawn through the opening at grade, fueling a combustion that can be exhausted. In this sense, the tower becomes a chimney into the sky which consequently replaces the crucifix by light.

The sense of refuge the was found in enclosure is not entirely negated. Rather, refuge becomes a virtual experience and is dependant upon an unorthodox method of construction that brings the project into its final form.



Interior Vignettes  
Fig. 4.10

<sup>16</sup> Zumthor, Peter. 2006. *Atmospheres : Architectural Environments, Surrounding Objects*. Basel: Birkhäuser., p.25



**Zumthor Overlooking the Construction**

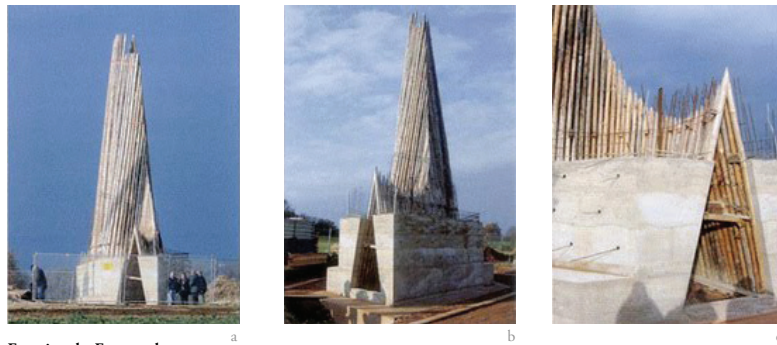
Fig. 4.11

# The Construction

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During a rare lecture in which Zumthor addressed the chapel's construction, the audience sat spellbound.<sup>16</sup> The interior formwork is to be made of locally fallen trees, encased by concrete and then set on fire. It is a process that brings together skilled craftsmen and labourers, and uses fire as a tool to embody the spirit of Bruder Klaus.

*“The interior of the chapel is shaped by 112 tree trunks. The trees were felled in the town forest of Bad Munstereifel. Under the direction of master carpenter Markus Rössmann, helpers stacked the trunks on a concrete slab in the field to form a tepee-like construction. The body of the chapel was erected around the wooden tepee in 50-cm thick layers of rammed concrete, consisting of river gravel, reddish yellow sand from the Rheim pit in Erp and white cement. The layers were poured one per day for 24 days between the end of October 2005 and September 2006.*



Encasing the Formwork  
Fig. 4.12

*Friends and acquaintances of the Scheidtweiler family, forming so-called ramming teams for each of the 24 days, worked under the guidance of master builder Alexander Mahlberg and foreman Hans Joachim Engler. In the fall of 2006, a smouldering fire was maintained for three weeks inside the wooden teepee, now clad entirely in concrete.”<sup>17</sup>*

16 Peter Zumthor: Bruder Klaus Field Chapel, Mechernich-Wachendorf, Germany, 2007. Cement Concrete & Aggregates Australia, issue 07: 28-45., p.32 (<http://www.concrete.net.au/CplusA/issue7>)

17 Peter Zumthor: Brother Klaus Field Chapel, Wachendorf, Eifel, Germany, 2007. 2008. A + U : architecture and urbanism(9) (09): 37., p.30



**The Wooden Formwork**

Fig. 4.13



# Tracing the Process

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The process by which the tower is constructed is widely discussed. It is certainly intriguing but the firing is mysteriously absent from publications. Therefore, the project is reconstructed as a 1:20 scale model and ignited: the fire that smoulders within, the smoke that billows from the oculus - the force that transforms the space - is observed and documented.

1

## **Formworks**

At first, the outer formwork is constructed. Each of the five sides of the prism is made of 1/4" MDF and is coated with an anti-stick spray. Small holes are then drilled through their surfaces to correlate with the locations left by the tie-rod connections used in the full-scale construction. Due to the small scale of the model, however, these were never followed through and were left as perforations. Next, the interior formwork is built from wooden dowels that range in length from 10 to 60 cm. The straightness of each member became incredibly important: the slightest warp or inconsistency upon their rounded surfaces would produce gaps that would surely allow concrete to freely pass through. Precise joinery is required and each dowel needs to be separately tailored for a perfect fit.

2

## **Pouring the Concrete**

The wooden teepee is mounted upon a base of one-inch rigid insulation and slid in between the outer formwork. A divider is added in anticipation of splitting the model apart; it cuts through the centre of the oculus and follows the curvature of the passage. Quick-setting concrete is mixed and poured between the formworks and on each side of the divider. This is repeated every six hours for a total of six days until the intended height is encased by 24 layers.

As expected, liquid concrete seeped through the holes drilled on the outer formwork. Initially, it looked as though the walls would never stop bleeding out but with a bit of good fortune, the heavy flow reduced and ceased. This effect occurred periodically and became increasingly evident as subsequent layers of concrete were poured; the weight of material pressed out more and more liquid as the teepee was further encased. Perhaps this was partially due to the consistency of the concrete mixture itself; viscosity was determined by resistance when mixing rather than measuring the prescribed cement to water ratio.



Encasing the Teepee

Fig. 4.14



Letting it Cure

Fig. 4.15



**The Chapel**  
Fig. 4.16

# Flames, Smoke and Destruction

---

The concrete-and-wood kiln is ready to be ignited: combustible materials are embedded into the walls of a volume that is conducive to airflow. The only remaining element is a source of heat.

## Letting it Burn

Considering the size of the model in relation to the project, a raw and simple approach is taken: newspaper and twigs are used as kindling in hopes to catch the wooden-lined interior on fire and left to grow at its own pace. This contrasts the propane-controlled firing used in the full-scale construction. Without doubt, this process of burning the model is far more entertaining and appropriate in relation to the inner life of Bruder Klaus than its larger sibling.

As kindling near the entrance is lit, fire gradually works its way into the circular void, drawing air in. What first appears to be a Papal vote as the kiln begins to smoke soon turns aggressive as the fire gains strength. The once wispy flame and clouds of smoke intensify into a piercing flame. A low - but noticeable - grumble builds into a sustained howl as the wood is feverishly consumed. All exterior surfaces of the kiln become hot to the touch and the narrowest width at the base eventually cracks from the intense heat. The fire begins to die down, turning into a bed of embers after 20 minutes and is left to cool overnight. It is then split open.



**The Interior**  
Fig. 4.17



**The Burn Begins**

Fig. 4.18



**Feeding the Fire**  
Fig. 4.19





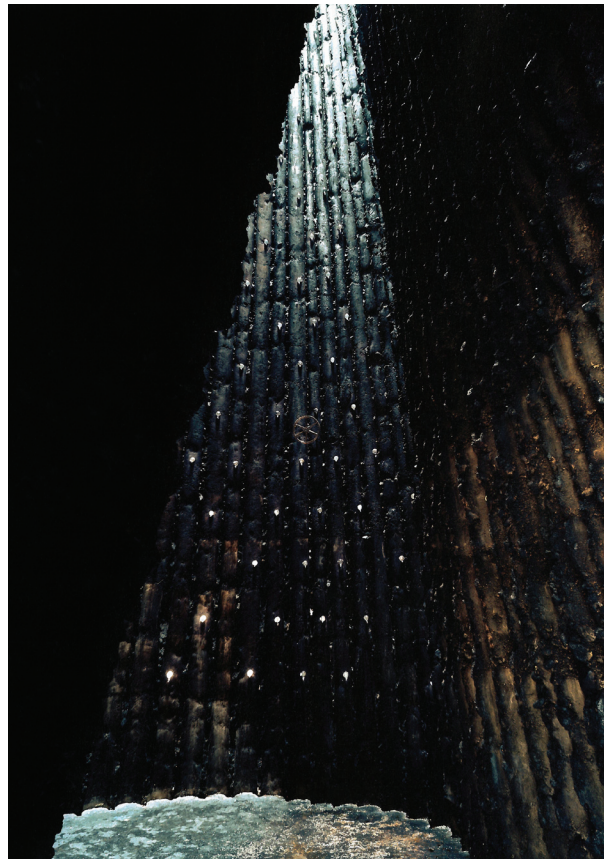




**The Apex**  
Fig. 4.21



**Let it Howl**  
Fig. 4.22



**Charred Womb**  
Fig. 4.23

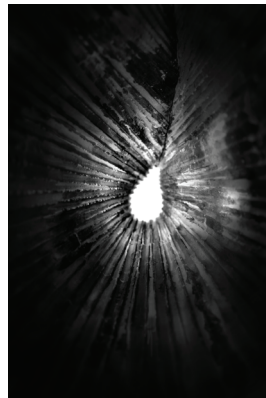
# The Aftermath

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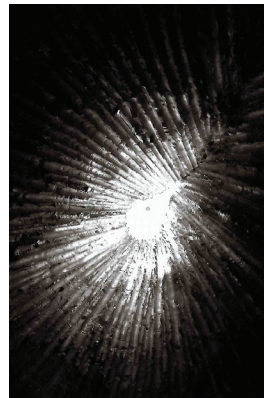
*“The fascinated individual hears the call of the funeral pyre.  
For him destruction is more than a change, it is a renewal.”*<sup>18</sup>

The void has become a charred womb. Walls are severely browned and blackened, and linger with the thick scent of having been freshly burned. The intensity of the firing process is registered upon every surface, draping the interior with a layer of residue. Without doubt, this is a place of death. Yet, there is an overwhelming sense of promise and renewal when looking skyward from the dark, weighted base. The light that enters through the oculus introduces complexity to the atmosphere that extends beyond the simple material transformation: a place of refuge is no longer bound to a physical realm.

Once marked by compression and time, the mass of the void abruptly dissolves into air; weight is lifted as the opposing directions of fire and light encounter one another. The flames that seem to erode the ceiling of the tower rise out towards a bright light that, in turn, seems to penetrate the solidity of the concrete. There is a dual movement at play between two forces that is captured on and contained within the fluted walls that places the inhabitant somewhere between being rooted and reaching skyward.



**My Model**  
Fig. 4.24



**Zumthor's Model**  
Fig. 4.25

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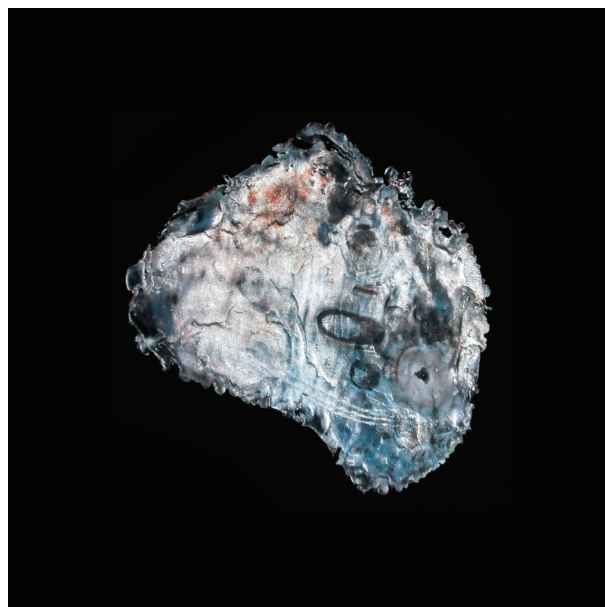
18 Bachelard, Gaston, 1884-1962. 1964. *The Psychoanalysis of Fire*. Boston: Beacon Press., p.16



**Tower in Field**  
Fig. 4.26



**Inside the Womb**  
Fig. 4.27

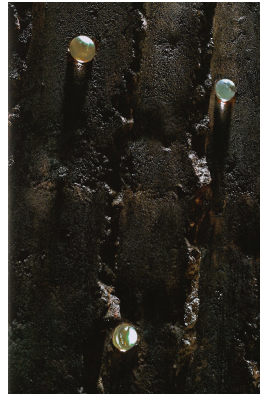


**Lead Sample**  
Fig. 4.28



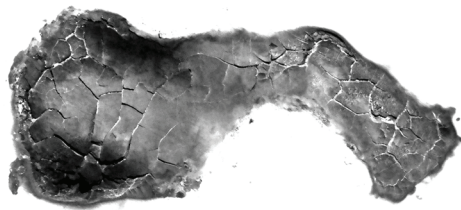


**Exterior Detail**  
Fig. 4.29



**Interior Detail**  
Fig. 4.30

There are three elements added after the firing to strengthen how virtual transition is experienced. Most important is the floor. Made of a tin-lead alloy rather than of concrete, it is the second most dominant material of the void.<sup>19</sup> Four tons of recycled material is melted on site and ladled onto the floor by hand; the two-centimetre thick layer remains level until the area directly beneath the oculus is approached.<sup>20</sup> A shallow but wide-spread bowl is formed in the centre of the circular plan to suggest it is the fire's point of origin and the chalice to the saint's transition. Similarly, the mouth-blown plugs that are inserted into the holes left by the shuttering ties suggest that the heat was so great that the sand within the concrete melts from intense heat.<sup>21</sup> Finally, a thick steel door encloses the void, containing the temperature of the alchemical vessel and blurring Bruder Klaus' physically and psychologically intense transition toward the afterlife.



**Burnt Base**  
Fig. 4.31

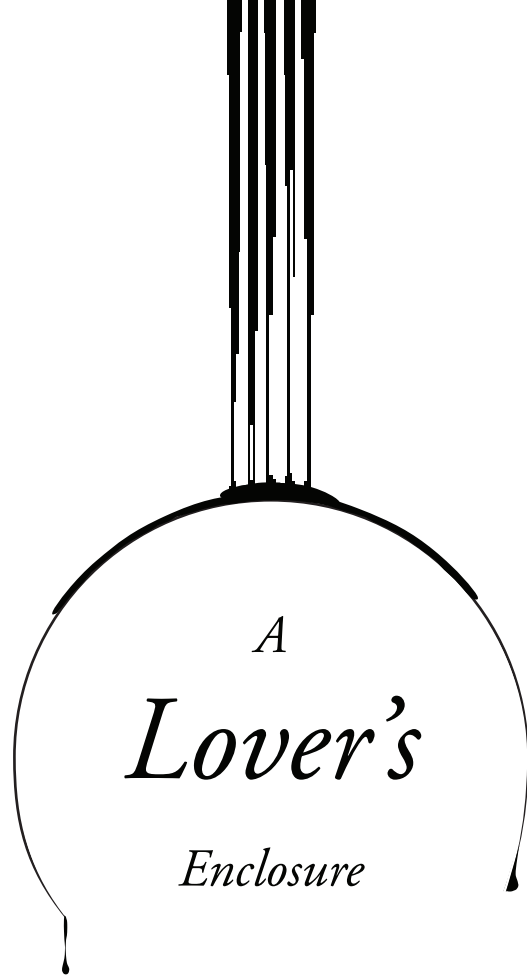
*Is the burst of light not what Icarus sees as he falls from the sky, burned by the sun and his intoxication?*

19 Peter Zumthor: Bruder Klaus Field Chapel, Wachendorf, Eifel, Germany, 2007. 2008. A + U : architecture and urbanism(9) (09): 37., p.30

20 Ibid.

21 Ibid.





*A*

*Lover's*

*Enclosure*



**Embracing Spring**  
Fig. 5.0

### **Stump Pool in April**

*Crack willows in their first pale eclosion  
Of emerald. The long pool  
Is simmering with oily lights. Deep labour  
Embodied under filmy spanglings. Oxygen  
Boils in its throat, and the new limbs  
Flex and loosen. It keeps  
Making the effort to burst its glistenings  
With sinewy bulgings, gluey splittings  
All down its living length.*

*The river is trying  
To rise out of the river.*

*April  
Has set its lights working. Its broad wings  
Creased and humped in their folds, convulse  
to lift out over the daffodils.*

*The soft strokings  
Of south wind keep touching all its membranes  
Into spasming torments. It knows  
The time has come for it to alter  
And to fly, and somehow to tangle  
With the hill-wood – waiting high there, flushed  
In her bridal veil of haze violet.*

Ted Hughes  
*River, p.27*



**Triptych of Residue**  
Fig. 5.1

---

## Draped with the *Residue of Flight*

---

*That which cradles from the sky, is ground to powder, or is cracked from its body now inspires an architectural proposition in which a force responsible for the transition becomes loved.*

Whether it is the burnt wooden formwork of the *Bruder Klaus Chapel*, the dried clay spatters and fragments of *Prometheus*, the fine sawdust of *Sky Burial* or the scattered ash of *Icarus*, residue is an essential element in registering the passing of time. It becomes just as valuable to the scene as the force that acts upon an object or the objects that interact with one another.

In previous chapters, emphasis is largely placed upon ascension. It is perceived as the *primary movement* wrought by fire. However, the triptych of sculptures and the architectural project that investigate the indeterminate stages of *Stump Pool in April* rely upon traces of their transition. Unlike river's phase-shift from ice to steam, a *secondary movement* gains strength as descent becomes apparent to spring's progression.

This chapter investigates how residue can become more than simple representations caught upon flat surfaces. At first, a sculpture is constructed. Afterwards, it is translated into architecture.



**Cheesecloth (1)**  
Fig. 5.2



# Making Sculpture with Residue

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When reflecting on the previous works, there are three dominant characteristics to residue that come to inform the making of a final sculpture. The first is *material coherence*, followed by *gravity* and then *heat dissipation*. Four experiments attempt to best capture the brief moment as fragments fall from its parent body while decreasing in temperature.



**The Instrument**  
Fig. 5.3

## The Setup

The experiments are carried out in a farmer's field and are of a simple, layered construction that is easily assembled and dismantled. Beginning on level ground, a square perimeter made of bricks forms the foundation. Structural stability is ensured by stacking three successive courses; each course thereafter is separated by one of three materials depending on the trial. The final component of the setup is a stainless steel grate on which a cone-shaped fire is built, lit and left to run its course.

The structure resembles a small pyre that acts as an instrument to capture the remains of a wood fire. Anticipation builds once the fire is reduced to a pile of embers and ash rather than increasing in temperature. In this respect, the instrument is the counterpoint to the *Bruder Klaus* chapel, where it intends to register a delicate force and downward movement instead of one that is intense and airborne. As a result, any heat that is retained during its descent needs to behave with the force of a falling knife. Sheets of cheesecloth are used in the first trial, plastic in the second, cheesecloth again in the third, and burlap in the fourth in order to tune an interaction that proves to be sensitive. The stacked language of the brick pyre, its spacing and the size of fire is kept the same; only the material is changed from one trial to the other.



**Plastic**  
Fig. 5.4

1

### **Cheesecloth (1)**

Made of fine strands of cotton that form a loose weave, cheesecloth is selected for its ease of flammability. A total of ten sheets are used with the intention of burning away a certain amount of material on each layer to shape an inverted, conical void. However, as a single ember dropped through the steel grate, the layers of fabric offered no degree of resistance: flames immediately radiated from the point of contact, spreading outwards to the brick walls and through each layer. Nothing remained except the square void of the pyre. Even though the experiment failed to sustain an outcome, the liveliness of the interaction provided a benchmark.

2

### **Plastic**

Pleasantly peeved by the first attempt, the process is repeated with plastic. This allowed for falling embers to leave behind localized holes; the plastics' thickness retarded the points of impact from expanding, capturing the dispersion of residue. However, just as the single ember that fell through *all* the cheesecloth sheets, embers also passed through all of the layers with ease, producing a tattered, cylindrical void where every sheet is similar to the other. The effect, while intriguing, needs to be controlled to a greater degree in order to distinguish a path of dissipating heat.

3

### **Cheesecloth (2)**

Cheesecloth is returned to. This time, prior to staging the fire, each sheet is soaked with water in hopes of restricting the spread *and* taper of holes caused by the embers. Dropping once again, they begin to accumulate, coming to rest upon the top layer. Only after a few minutes is the area of contact dry enough to be burnt through. This occurs for the next five sheets until the residue becomes too thick and forms an insulative layer. The result is finally a conical void but each sheet of cheesecloth became limp, sagging onto the sheet below. As a result, there is no longer a distinction between the layers of separation, coming to drape the void in one seemingly continuous fabric. A sturdy material is needed.

4

### **Burlap**

The fourth and final experiment uses seven sheets of burlap. Each sheet is stronger, thicker and more tightly woven to the prior material, and is sandwiched between two plywood frames in order to keep them taught. Additionally, each 'slide' is misted with water; too much and the embers will not pass through, too little and embers will surely consume everything. The setup of the final instrument is a product of what *feels* right; only by having constructed the preceding experiments is a satisfying outcome achieved.



**Cheesecloth (2)**  
Fig. 5.5



**Burlap**  
Fig. 5.6



**Burlap Slides**

Fig. 5.7

# The Sculpture

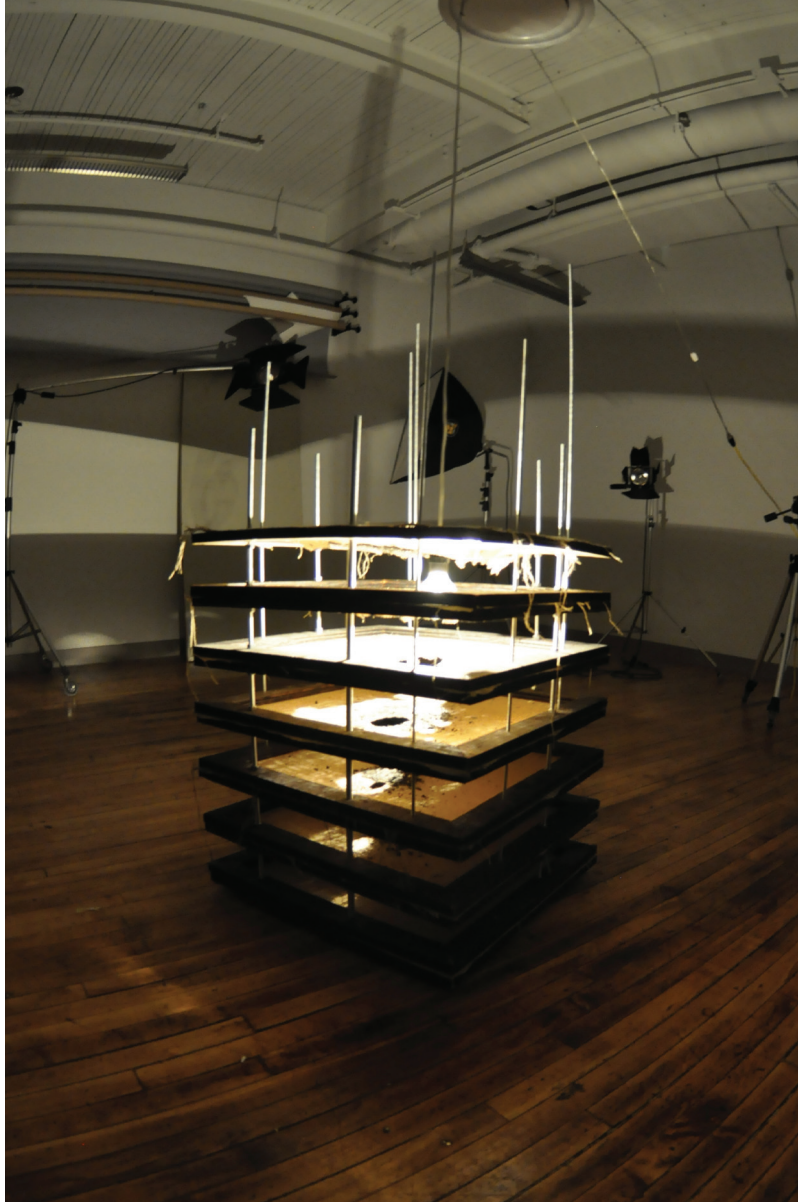
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The residual path of the fire is captured. Holes are smouldered into the burlap, edges are singed, and ash has accumulated to leave a conical void that is dusted with a trail of debris. The square slides closest to the fire have large, circular openings and are surrounded by faint discolourations of black powder. As the path is traced to the slide furthest away, embers leave irregular shaped holes and the amount of ash increases.

Each of the slides relate to the one another. The shape of the hole above is mirrored on the surface below as ash cascades through the layers of fabric. As well, asymmetry becomes apparent when looking at the trail: holes do not remain circular nor do their centres line up with one another. Lower layers seem to drift away from a linear path, curling in another direction altogether. The unpredictability of residual displacement and its interaction with each slide produces an authentic sculpture that takes on its own life even given the high degree of control.



When briefly considering the exterior of the pyre's setup, the modular bricks that are stacked next to and on top of one another with intermittent slides suggest that stone is bleeding. The burlaps' edges splay into individual threads and the layers of plywood are heavily blackened. There is a sense of immense weight and compression even though the interior is eroded.



**The Sculpture**  
Fig. 5.8





**Pyre's Construction**  
Fig. 5.9



**Soil Sample**  
Fig. 5.10

# Sculpture to Architecture

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The sculpture inspires the beginnings of an architectural design. Resultant geometries and proportions, textures and colours, and method of construction now need to be translated into order to create a void that is inhabitable. The use of fire should be absent from the process, requiring the selection of a new material palette and treatment in order to make an environment that can be enclosed. The leap from one discipline into another is bridged by an analogous scenario that is drawn from *Prometheus [A Ceaseless Torture]* and *Sky Burial [A Funerary Ritual]*.

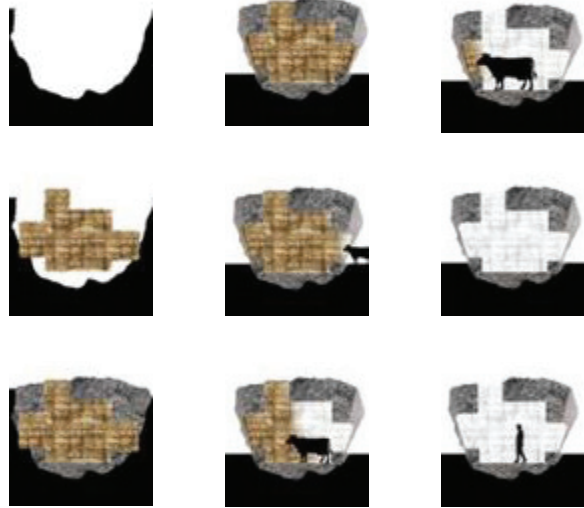
## **An Analogous Scenario**

Fire and predatory birds are perceived as forces that are alike. The vulture that feasts upon Prometheus' liver and the vultures that collectively devour an entire body leave behind traces of flesh, bone and blood just as fire leaves behind fragments of burnt wood and flakes of ash. Both are consuming forces of parallel intensity, feverishly gorging to survive. As such, they are interchangeable:

*What wood is to fire, the liver and body is to the bird - ash becomes blood, and the layers of burlap turn to soil.*

A new interaction between materials emerge when viewing the sculpture with this logic: an image of blood soaking into the earth is aroused. Just as embers cascade through the layers of burlap, blood cascades through each layer of soil. From the surface soil to sub soils, different densities and consistencies are reached by an initially heavy and localized flow. This inspires a new construction where the *volume*, *depth* and *spread* of blood can be used to inform the creation a void.

Referring to *The Truffle* by Ensemble Studio, an unconventional experiment with soil as a casting medium is undertaken. The exterior treatment of the concrete enclosure becomes particularly useful in developing an architectural design.



**Hole to Hole**  
Fig. 5.11

# The Truffle

---

Situated on the coast of Laxe, Spain, *The Truffle* is a small dwelling that overlooks the sea. It is an intimate place of retreat and contemplation that is shaped by a raw method of construction. Soil, hay bales, concrete - and a calf - are used in the making of an organic and inhabitable stone.

## **The Construction**

From the floors to the walls and to the ceilings, the single-room project is made entirely of concrete that is poured on site. There is, however, a striking difference between the exterior and interior of the 25m<sup>2</sup> space when considering their respective casting mediums.

The process begins by digging a hole. Earth is removed with a backhoe and is distributed around the hole's perimeter to create a circular, bowl-like formation. A layer of concrete is then poured to create a level base and rectangular hay bales are stacked into a pre-determined configuration. This is followed by three pours of concrete until the haybales are entirely encased. The earth is removed once the concrete has cured and a large, three-tiered stone is exposed that reflects the material that has formed it.<sup>1</sup> Soil, twigs and stones give the stone a rugged texture; any embedded aggregates upon its surface are pressure-washed away.

The stone is then sawn open at two locations. One creates the entry, the other provides a view towards the sea but both are used as access points for a calf to 'extract' the hay. All of the material is eaten by the single animal over the period of a year at which point the calf grows into adulthood. This reveals the interior for the first time in which surfaces are impressed with furry and grassy textures. Additionally, the walls and ceilings have slightly bowed inward from the weight of concrete. A cave-like space is created, poetic in both its construction and purpose.<sup>2</sup>

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1 Phillips, David, and David Phillips. 2012. *Detail in Contemporary Concrete Architecture*, ed. Megumi Yamashita. London: London : Laurence King Pub., p.92

2 Ibid.



a



b



c

**Digging, Stacking & Casting**  
Fig. 5.12



a



b



c

**Extracting**  
Fig. 5.13



**The Truffle's Exterior**  
Fig. 5.14





**The Truffle's Interior**

Fig. 5.15



crete soil soil soil soil soil soil soil con  
ncrete soil soil soil soil soil soil concre  
**concrete** soil soil soil soil soil soil soil **concrete**  
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**rete** concrete soil soil soil soil soil soil **concrete conc**  
**te** concrete soil soil soil soil soil soil soil **concrete coi**  
**rete** concrete soil soil soil soil soil soil **concrete conc**  
**crete** concrete soil soil soil soil soil **concrete concre**  
**oncrete** concrete soil soil soil soil **concrete concrete**  
**ncreteconcreteconcrete** soil soil soil **concreteconcreteconcr**  
**eteconcreteconcrete** soil soil soil soil soil **concreteconcreteco**

**CR** | **ET**

**Design Parti**  
Fig. 5.16

# Making Architecture

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The exterior of *The Truffle* becomes the subject of two *concrete-and-soil* experiments. A small scale maquette is first constructed as an attempt to transfer the construction method to the interior, and one larger model refines the technique into a plausible construction.

## 1

### Maquette

A one-gallon bucket with a plastic divider positioned along its diameter is used as the outer formwork. Soil is then gathered from a garden, a batch of concrete is mixed and a base of approximately two-inches is poured. A handful of damp soil is immediately piled on top of the wet concrete, tapering naturally to a height of about one-inch. Concrete is then poured up to the height of the soil. This process is continued in quick succession until ten soil-and-concrete layers are piled and poured on both sides of the division.



Before  
Fig. 5.17



And After  
Fig. 5.18

The concrete is left to cure until the deepest layer of soil is dry. This required seven days at which point the bucket is cut away and the two halves are carefully split open. The exterior of the casting is smooth and shows no signs of a layered construction; it is a pristine, grey-ish cylinder that shimmers underneath the light. In contrast, the interior is rich with texture, colour and scent, and takes on an unexpected form; the profile does not seem to adhere to the consistent language of the construction process. The weight of concrete seems to have compressed certain locations more than others, skewing and collapsing the soil's perimeter. This is confirmed when removing every pebble, piece of mulch and clump of dirt by hand; there are indeed pockets of different densities. Another surprise came from washing away any residual soil: the brownish-black colour is transferred as well, leaving areas of dark and light tones that carry a subtle earthen scent.



**The Casting Process**  
Fig. 5.19

## 2

### Model

In preparation for experimenting at a larger scale, three separate formworks are constructed. Each 'box' measures 2x1x1 feet to reduce overall weight and to contrast the form of naturally piled soil. As well, one side of each box is made of clear plastic so the casting process to be observed, responded to and controlled.

The first box is primarily made of a single batch of concrete and copper tubing. A ten-inch height is cast that encases four tubes that have previously been placed. Soil is then piled on top of the wet concrete and the protruding ends of copper, this time compressed to a one-inch height by hand. The remaining two-inch height of the box is topped off by two separately poured and piled one-inch layers.



Soil and Concrete  
Fig. 5.20



Large Aggregate  
Fig. 5.21



Medium Aggregate  
Fig. 5.22

The second box maintains a two-inch pour height throughout. The only change comes from gradually increasing the diameter of each pile of soil.

The third box changes the soil height and consistency. The first two layers are 2.5 inches in height, and the final two are 3.5; increasing the diameter is continued just as before. Changing the soil quality, however, was not planned for and was only considered when waiting for the concrete of the second box to cure. Soil is sifted into a fine powder, almost coffee-like in texture and weight, and used as the casting medium of the final box.

Given the changing proportions of soil to concrete within each box, drying times and were checked on everyday. Once entirely cured, the concrete-and-soil constructions were released from their formworks, cleaned and stacked.



**Concrete with Soil**

Fig. 5.23



**Concrete without Soil**

Fig. 5.24



**The Void**  
Fig. 5.25



# The Void

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The resultant void is stunning. The shape of the interior as walls taper and plateau, taper and plateau, with a soft texture that transitions from fine to coarse captures the path of blood cascading through varying densities of earth. Even the horizontal lines that separate each box come to suggest there is an excess of liquid that finds a route through loose pockets of soil. At the bottom, the void flares outward as though the blood were pooling, coagulating, no longer able to descend any further. Surely, a movement downwards is present as volume diminishes, viscosity thickens and earth hardens.

*The void is draped by weight, blood and time.*

There also seems to be another movement is counteracting the force of gravity. Just as the Ricola Center in Basel, Switzerland, uses increasing panel widths to give the illusion that the facade is reaching into the sky from its rooted base, the void instills a similar effect. The atmosphere is somehow buoyant, containing a force that rises from within the massive tiers of concrete. Gravity is no longer the sole force acting upon the void: an explosion that is rapidly rising seems to be caught by the treatment of the concrete and its pseudo-fibonacci spacing. It is this duality in movement that comes to charge the void and inform its inhabitation and use.



Ricola Storage Center  
Fig. 5.26



Atomic Bomb Blast  
Fig. 5.27



**Peregrine Falcon**  
Fig. 5.28

# Inhabiting *The Void*

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From washing away any soil, stones and twigs of the model to the image of blood soaking through the layers of earth, the bird that tortures and birds that consume has become integral to the conception and construction of the void. The *predatory feast* has inspired a material palette and method of construction without resorting to the use of fire as a tool. It feels only natural, then, to incorporate a bird - a force of fire itself - into the void it has come to inform.

A rookery, a place to feast, a place to nest or even an arena for birds to fight are all potential uses for the void. By scaling up the raw, open-to-air concrete mass, a partial shelter could provide a place for a bird or a flock of birds to gather and depart from. The focus on how the space could be utilized, however, is based less upon the immediate connection between a bird and a built environment, and more upon the bond formed between bird and man; the inter-species relationship is not as difficult to achieve as one may think - though peculiar - and is appropriate given the themes brought forth in previous chapters. Now, the bird that tortures and liberates becomes loved.

## **I Like America and America Likes Me**

In one of his more renowned performances, artist Joseph Beuys spent seven days in a room with a wild coyote.<sup>3</sup> During this time, a co-existence and co-dependence between beast and man develops. It began as soon as Beuys arrived by plane from Europe: he was wrapped entirely in felt and transported from the airport to a gallery space in New York City by ambulance. A coyote was taken from the wilderness and transported by ambulance to the same location. Neither species had encountered the other on any prior occasion.

Each were allowed necessities. Beuys came equipped with a wooden staff, a flashlight and gloves; the coyote was given a pile of hay. A chain link barrier separated the two from spectators who observed extended periods of long, calm, concentrated, and almost silent days.<sup>4</sup> Beuys followed a routine, presenting his objects to the animal and conducting a series of choreographed movements. Eye contact was scarcely broken as the experimental procedures were repeated time and again.<sup>5</sup>

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3 Tisdall, Caroline, and Caroline Tisdall. 2008. *Joseph Beuys, Coyote*. London: London : Thames & Hudson., p.5

4 Ibid., p.6

5 Ibid., p.7



**Beuys and Little John**  
Fig. 5.29



a

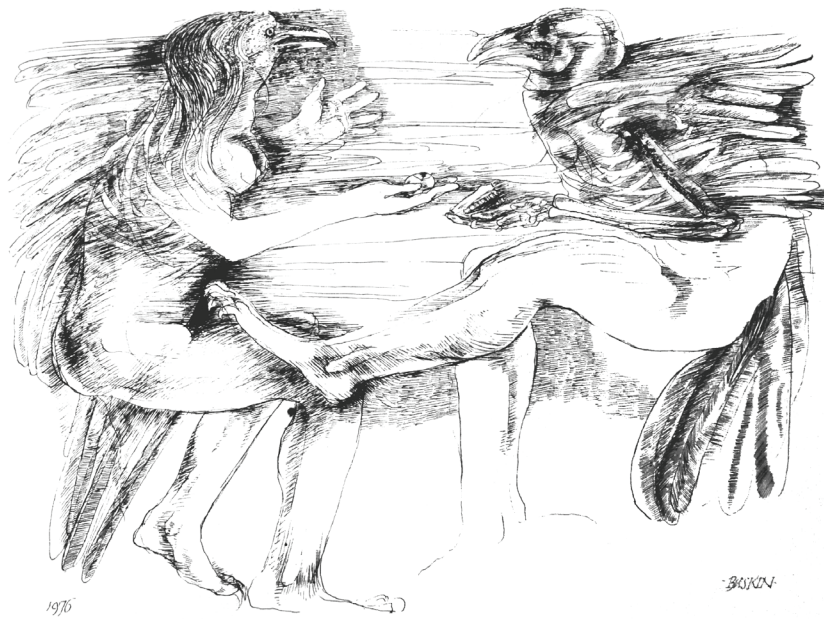


b



c

**Their Interaction**  
Fig. 5.30



**Bride and Groom**  
Fig. 5.31

At first, the coyote slowly and deliberately urinated on Beuys' objects as a sign of possession.<sup>6</sup> Eventually, perhaps due to Beuys' ritualistic behaviour, he was able to lay on the hay provided for the animal and the animal on the tufts of Beuys' felt cloak that the coyote had torn apart. Sometimes the animal seemed distant and detached from what was going on.<sup>7</sup> On other occasions, however, he hovered around the felt figure, waiting and watchful, excited to the point of playful aggression: the coyote would paw Beuys, nudging the motionless lump of fabric like an anxious friend.<sup>8</sup> When it came time to depart, Beuys took leave of Little John by hugging him close without concealing the pain of separation; he was not able to see Little John's reaction who went padding up and down with the true wolf's swing, sniffing and searching, leaving a scent of fear in the air as he found himself alone in a cage.<sup>9</sup>

### **Zone of Indiscernibility**

The change in behaviour, the level of intimacy and the dependency between one another is undeniable. The bond that develops can also be achieved abruptly and without any physical interaction. Drawing upon the bird within *Prometheus* and the birds of *Sky Burial*, the savagery of the feast comes to resonate with the observer:

*“Near the end of the eighteenth century, the novelist K.P. Moritz described a person with ‘strange feelings’: an extreme sense of isolation, an insignificance almost equal to nothingness; the horror of sacrifice he feels when he witnesses the execution of four men, ‘exterminated and torn to pieces,’ and when he sees the remains of these men ‘thrown on the wheel’ or over the balustrade; his certainty that in some strange way this event concerns all of us, that this discarded meat is we ourselves, and that the spectator is already in the spectacle, ‘a mass of ambulating flesh’; hence his living idea that even animals are part of humanity, that we are all criminals, we are the cattle; and then, his fascination with the wounded animal, ‘a calf, the head, the eyes, the snout, the nostrils... and sometimes he lost himself in such sustained contemplation of the beast that he really believed he experienced, for an instant, the type of existence of such a being... in short, the question if he, among men, was a dog or another animal had already occupied his thoughts since childhood.’ [...] This is not an arrangement of man and beast, nor a resemblance; it is a deep identity, a zone of indiscernibility more profound than any sentimental identification: the man who suffers is a beast, the beast that suffers is a man.”*<sup>10</sup>

6 Tisdall, Caroline, and Caroline Tisdall. 2008. *Joseph Beuys, Coyote*. London: London : Thames & Hudson., p.7

7 Ibid.

8 Ibid.

9 Ibid., p.8

10 Deleuze, Gilles, 1925-1995. 2003. *Francis Bacon : The Logic of Sensation*, ed. Francis Bacon. Minneapolis: University of Minnesota Press., p.22



**A Lover's Embrace**  
Fig. 5.32



## An Enclosure for Falcon and Master

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At last, an architectural proposition arises as a program for the void is established. By coupling man and animal the final form of the model draws on the sport of falconry to intensify their bond: equipment required to safely handle the physical attributes and the behaviour of a falcon as she and her master are bound together is re-interpreted to flesh-out the atmosphere. Again, the selection of materials and arrangement of objects is relied on to create an enclosure for an organic weapon that tortures and liberates.

*“Little more than a drift of the air brought into form by plumes, the air is in all its quills, it breathes through its whole frame and flesh and glows with air in its flying like blown flames, its rest upon the air, subdues it, surpasses it, outraces it, - IS the air, conscious of itself, conquering itself, ruling itself.”<sup>11</sup>*

*“‘Hooding’ in the dark mews is the first operation. What the bridle is to a horse so is the hood to a hawk. Without it, so high-spirited is its temperament that it would, even after training, dash itself from the cadge at every strange object and would not readily recover its equanimity. If it should be pugnacious on removing the hood, a splash of cold water till the feathers are soaked pacifies it.”<sup>12</sup>*

A tender kiss may calm her as well...

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11 Fleming, John Arnold, 1871-. *Falconry and Falcons ; The Sport of Flight*, by Arnold Fleming. with a foreword by Iain Colquhoun of Luss. East Ardsley, Eng. EP Publishing, 1974 c1973., p.54

12 Ibid., p.69



**A Lover's Enclosure**  
Fig. 5.33



**Holding a Peregrine Falcon**  
Fig. 5.34

*The hood, the gauntlet and the jesses are crucial to embrace his lover. They provide a certain amount of control, allowing the falcon to be held on her master's arm as they head out to hunt in companionship. Just as his bird is outfitted, so is the void: a dome to enclose, a cantilever to rest upon, and a chain to open the sky makes the transition from man to bird complete; as he stands near the center, holding her in the apex, "love, death, and fire are united at the same moment."<sup>13</sup>*

### **Becoming Falcon**

The hood is the primary piece of equipment. It is a small cap usually made of leather that is placed over the falcon's head to completely cover her eyes. This procedure is known and 'hooding' as is essential to keep her calm; without sight - without light - the bird becomes docile. Removing the hood, however, may have a reverse effect; it is, therefore, recommended to take off the hood next to candle light which seems to dazzle the bird into submission.<sup>14</sup> If her capricious spirit will still not yield, gently sprinkling her with water should soothe her.

The gauntlet is the second piece of equipment required. It, too, is made of leather and serves as protective gear to transport the falcon. The malleable and durable material provides a comfortable resting place for the falcon on the master's forearm; the natural curvature of her talons is able to contour his arm without being sliced. In the occasion that she is not being held, a wooden perch wrapped in leather will suffice.

The jesses are the third piece of equipment. They are thin strips of leather that physically bond falcon and master to one another. One end of the thin strip is attached to her talons, the other is held between his thumb and fingers. This attachment, one per claw, prevents an undesired escape if she has the sudden urge to take flight. Once released, however, there is no certainty that she will stay or return.

<sup>13</sup> Bachelard, Gaston, 1884-1962. 1964. *The Psychoanalysis of Fire*. Boston: Beacon Press., p.17

<sup>14</sup> Fleming, John Arnold, 1871-. *Falconry and Falcons ; The Sport of Flight*, by Arnold Fleming. with a foreword by Iain Colquhoun of Luss. East Ardsley, Eng. EP Publishing, 1974 c1973., p.70



**Becoming Man**  
Fig. 5.35

*“The drawing by Charles Gere, 1934, is of Lord Tweedsmuir holding his famous goshawk, Jezebel, who was one of the great hawk characters between the wars. Over the years, Jezebel took a vast number of rabbits and all manner of other quarry, finally ending her life tragically by taking stand on an electric pylon. In defiance of all scientific reason, she exploded in a shower of sparks, flame and smoke, a fitting end, perhaps, to one of the most formidable goshawks on record.”*<sup>15</sup>

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<sup>15</sup> Ap Evans, Humphrey, 1922-2009. *Falconry*. Edinburgh, J. Bartholemew, c1973., p.18









During the Fall of 2012 my bird became ill. Her energy subsided, as did her appetite and social behaviour. She kept to herself more often, sitting at the back of her cage rarely eating or drinking. She died in January after two nights of severe seizures, and was burned in a small wooden pyre the following day.

\* \* \*

A week before her death I read *The Tibetan Book of the Dead* as she sat perched on my shoulder.





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