

Stories of
H o u s e
&
F i r e

by
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AUTHOR'S DECLARATION

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.

ABSTRACT

For Gottfried Semper fire was the “first and most important, the moral element of architecture.” The symbol of the soul of the city and of the house, it has become a fundamental element in the rituals of urban and domestic foundation. We recognize fire as a sensational and tremendous element, and we are captivated by it. The attraction to an object leads to desire; in the case of fire, to own it, we need to restrain it. This desire is trepidatious, acknowledging the devastating capability of fire. Fire is a threat, yet we invite it into our homes.

Fire is intimately associated with construction not only in our immediate histories, but also in our myths of origin. In the classical world, fire was worshipped within the city and the home. For Greeks and Romans, the sacred fire in the centre of the city was the primary altar, the origin of its identity and the seed for religious life. Hestia, the Greek goddess of the domestic hearth, became a symbol of community and power. And the tradition endures: For instance, Frank Lloyd Wright’s homes revolve around the hearth, as both a thermal and a compositional focus around which life within the home is created. The integral flame burning deep in the heart of the home brought Wright a deep sense of comfort.

Centering our homes on fire involves a paradox; fire, whether transforming our food or warming us, is also a menace. As fundamentally as the house was built around fire, it can also be destroyed by fire. Fire grows, reproducing and dividing, all the while losing ritual and mythical

content. The multiplication of fire diminishes its symbolic value; a loss of value comes with increase. Untamed, violent, fire is ousted from its central place in the home. With the Great Fire of London in 1666, our understanding of the destructive capabilities of fire were institutionalized, along with policy to restrain it; we realized we had to implement a broader level of control.

The story of the hearth is a satire; an account of our attempt to domesticate the magical and ethereal. From these attempts, we are left unsure of our true perceptions of fire. How do we negotiate our simultaneous innate temptation with our fear of fire, our inexplicable fascinations and our corresponding trepidations?

Storytelling is deeply rooted in the gathering around a fire, and the story of architecture ultimately begins with fire. Through the selection of ten stories that chronicle of the relationship between fire and the home, we can examine our ineffable relationship with fire, vacillating between function and symbol, coloured by with themes of fascination, temptation and fear.

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DEDICATION

To my family.

C O N T E N T S

Author's Declaration	[iii]
Abstract	[v]
Acknowledgements	[ix]
Dedication	[xi]
List of Plates	[xv]
I. A Story of Death	[1]
II. A Story of Investigation	[7]
III. A Story of Origin	[19]
IV. A Story of Destruction	[39]
V. A Story of Practicality	[51]
VI. A Story of Symbols	[63]
VII. A Story of Impracticality	[73]
VIII. A Story of Domesticity	[89]
IX. A Story of Function	[101]
X. A Story of Fascination	[115]
Epilogue	[125]
References	[131]

LIST OF PLATES

I. *A Story of Death*

Fig. 1. . “Vintage Printable.” *Juvenile – Educational Plate – Infants Cabinet Of Birds and Beasts (1820) 07 Crow, Rooster*. 27 August 2010 . Swivelchair Media. 1 May 2011. <<http://vintageprintable.com/wordpress/2010/08/31/vintage-printable-childrens-educational-plates/juvenile-educational-plate-infants-cabinet-of-birds-and-beasts-1820-07-crow-rooster-2/>>.

II. *A Story of Investigation*

Fig. 2. . “Tourism Elliston Inc.Elliston, Newfoundland and Labrador.” *Kador Porter’s house (former Post Office) on fire*. 2011. Virtual Museum Canada. 1 May 2011. <http://www.virtualmuseum.ca/pm_v2.php?id=record_detail&fl=0&lg=English&cx=00000616&rd=145887>.

Fig. 3. Tibaldi, Pellegrino . “All Posters : Folklore & Mythology.” *Prometheus, Aided by Minerva, Steals Fire from Heaven*. 2011. AllPosters.com. 01 May 2011. <http://www.allposters.com/-sp/Prometheus-Aided-by-Minerva-Steals-Fire-from-Heaven-Posters_i7288119_.htm?aid=1415699673&DestType=7&Referrer=http%3A%2F%2Fwww%2Ekeyposters%2Ecom%2Fposter%2F7288119%2Ehtml>.

Fig. 4. Fernández-Galiano, Luis. *Fire and Memory : On Architecture and Energy*. Cambridge, Mass. ; London: MIT Press, 2000. Print. p 218.

III. A Story of Origin

Fig. 5. Fernández-Galiano, p 10.

Fig. 6. Rykwert, Joseph, and William Dendy. *On Adam's House in Paradise : The Idea of the Primitive Hut in Architectural History*. 2 Vol. New York: Museum of Modern Art, 1972. Print. p 115.

Fig. 7. . "Sister in Celebration." *Hearth Tenders*. 03 September 2011. Sisters in Celebration. 1 May 2011. <<http://www.sistersincelebration.org/HearthTenders.html>>.

Fig. 8. Fernández-Galiano, p 14. Joseph-Francois Lafitau, *Moeurs des sauvages americains comparees aux moeurs des premiers temps* (Paris, 1724)

Fig. 9. Hatzigeorgiou, Karen. "Karen's Whimsy." *Vestal Virgins*. 2011. 1 May 2011. <<http://karenswhimsy.com/vestal-virgins.shtm#>>.

Fig. 10. Frette, Juliette . "Examiner." *Ancient goddess spotlight: Hestia*. 20 April 2009. Clarity Digital Group LLC. 1 May 2011. <<http://www.examiner.com/women-s-issues-in-national/ancient-goddess-spotlight-hestia>>.

Fig. 11. Coates, Steve. "The New York Times." *Keepers of the Faith*. 01 July 2007. The New York Times Company. 01 May 2011. <<http://www.nytimes.com/2007/07/01/books/review/Coates-t.html>>.

IV. A Story of Destruction

Fig. 12. Bell, Walter George. *The Great Fire of London in 1666*. 3 rev ed. London: Bodley Head, 1951. Print. p 109.

Fig. 13. Bell, p 35.

Fig. 14. Bell, p 149.

Fig. 15. Jackson, William Eric. *London's Fire Brigades*. London: Longmans, 1966. Print. p 9.

Fig. 16. Jackson, p 16.

V. *A Story of Practicality*

Fig. 17. Muthesius, Hermann, and Dennis Sharp. *The English House*. 1 complete English ed. London: Frances Lincoln, 2007. Print. Book I, p xv.

Fig. 18. Muthesius, Book I, p23.

Fig. 19. Muthesius, Book III, p. 129.

Fig. 20. Muthesius, Book III, p 136.

Fig. 21. Muthesius, Book I, p. 121.

VI. *A Story of Symbols*

Fig. 22. Hvattum, Mari. *Gottfried Semper and the Problem of Historicism*. Cambridge: Cambridge University Press, 2004. Print. p 32.

Fig. 23. Hvattum, p 44.

Fig. 24. Hvattum, p 36.

Fig. 25. Etlin, Richard A. *Frank Lloyd Wright and Le Corbusier : The Romantic Legacy*. Manchester; New York: Manchester University Press; Distributed exclusively in the USA and Canada by St. Martin's Press, 1994. Print. p 31.

VII. *A Story of Impracticality*

Fig. 26. Etlin, p 145.

Fig. 27. Fernández-Galiano, p 30.

Fig. 28. Etlin, p 31.

Fig. 29. . "Frank Lloyd Wright Architecture." *Fallingwater photos: Living room, from kitchen*. 09 December 2009. Photo by the National Park Service. 1 May 2011. <<http://www.wright-house.com/frank-lloyd-wright/fallingwater-pictures/BW-living-room-fallingwater.html>>.

Fig. 30. Fernández-Galiano, p 252.

Fig. 31. Etlin, p 54.

Fig. 32. Steiner, Douglas M. . "The Wright Library." Lake Geneva Hotel, Lake Ge-

neva, WI (1911) (S.171). 2008. . 1 May 2011. <<http://www.steinerag.com/flw/Artif-act%20Pages/PhRtS171andirons.htm>>.

VIII. A Story of Domesticity

Fig. 33. Schindler, R. M., et al. *The Architecture of R.M. Schindler*. Los Angeles, Calif.; New York: Museum of Contemporary Art, Los Angeles; In association with Harry N. Abrams, 2001. Print. p 182.

Fig. 34. Schindler, p 158.

Fig. 35. Schindler, p 126.

Fig. 36. Smith, Kathryn, and Grant Mudford. *Schindler House*. New York: Harry N. Abrams, 2001. Print. p 20.

Fig. 37. Schindler, p 30.

Fig. 38. Schindler, p 172.

IX. A Story of Function

Fig. 39. Muldoon, Katy. "Aprovecho Research Center." *Oregon's Aprovecho Research Center builds stoves to help the environment, health and humanity*. 03 February 2011. The Oregonian. 1 May 2011. <<http://www.aprovecho.org/lab/pubs/media/60>>.

Fig. 40. Keefer, Bob. "Aprovecho Research Center." *Efficient stove solution : International visitors attend a workshop in Cottage Grove to see how stoves can help impoverished areas*. 24 January 2011. The Register-Guard. 1 May 2011. <<http://www.aprovecho.org/lab/pubs/media/43/56-efficient-stove-solution>>.

Fig. 41. Kaste, Martin. "National Public Radio." *Engineers Hone Clean-Energy Stoves For The World*. 09 February 2011. NPR. 01 May 2011. <<http://www.npr.org/2011/02/09/133598036/engineers-hone-clean-energy-stoves-for-the-world>>.

Fig. 42. Broder, John M. "The New York Times." *Developing Nations to Get Clean-Burning Stoves*. 20 September 2011. The New York Times Company. 01 May 2011. <http://www.nytimes.com/2010/09/21/science/earth/21stove.html?_r=1>.

Fig. 43. Feldmath, Lisa. "Global Alliance for Clean Cookstoves." *Solution : How do clean cookstoves and other clean cooking solutions save lives, empower women, improve livelihoods, and combat climate change?*. 2011. United Nations Foundation. 01 May 2011. <<http://cleancookstoves.org/overview/solution/>>.

Fig. 44. . "Global Alliance for Clean Cookstoves." *Quick Facts*. 2011. United Nations Foundation. 01 May 2011. <<http://cleancookstoves.org/wp-content/uploads/2011/03/Cookstoves-One-Page-03.22.11.pdf>>.

X. A Story of Fascination

Fig. 45. Photo taken by Kaveh Nabatian (2011)

Fig. 46. *The Sacrifice (Offret, original title.)* Andrei Tarkovsky. Svenska Filminstitutet, 1986. Film.

Fig. 47. Image by author.

Fig. 48. Wiseman, Carter. *Louis I. Kahn : Beyond Time and Style : A Life in Architecture*. 1st ed. New York ; London: W. W. Norton, 2007. Print. p 265.

Fire is the element which gives animation to everything and to which everything owes its being; which, as the principle of life and death, of existence and non-existence, acts by itself and bears within itself the power to act.¹

-Louis Reynier

¹ Reynier, Louis. *Du Feu, Et de Quelques-Uns de Ses Principaux Effets*. Paris: Kessinger Publishing Co., 1878.) 29

A STORY OF DEATH



Fig. 1
Infants' Cabinet of Birds and Beasts 1820. Black and white engraving from Vocabulary book.

When my father was 22, his uncle arrived unexpectedly bearing news of death. His other uncle, Tibor and grandmother had passed away the night before.

It was a Saturday in early December and the harsh cold had demanded the heat be turned on. Earlier that week, the family had attended the funeral of their aunt where Tibor had caught a cold. His mother had rubbed ointment on his back and they sat down to watch television. His wife Kati had been feeling ill and after putting their baby to bed in the next room, went to bed herself in a room one more over from the living room.

Their home was centered on a fireplace; a large brick chimney stove that heated two rooms, the living room and my great-grandmother's bedroom. The home did not have central heating. Rather, the furnace was divided within the house, so separate units were used in other rooms.

A few weeks earlier, a black crow had built a new nest. Hidden deep in their chimney top, she had found the perfect spot.

Around 5 a.m. that morning, Kati awoke feeling ill. Still in her nightgown, she ran outside to the refreshing cold to throw up. Outside, she noticed that the living room light was still on. She thought she had woken someone up. She didn't know why Tibor had not come to bed that night. She was confused as to why the television was still on. Kati walked into the room and saw Tibor and her mother-in-law sleeping on the couch. They appeared identical to how she had left them, with one small difference that could be missed by a careless eye. Each had a tiny stream of blood coming from the side of their lips. They had both fallen asleep peacefully last night, slowly poisoned in their slumber. Autopsy results

reported that Tibor had died first as he was closer to the furnace, about a half hour before his mother. They were both dead by midnight.

Kati's visceral scream awoke the neighbours, who phoned an ambulance. The baby's room, which was adjacent to the living room, had received a small amount of the gas. The closed door blocked most of it. The baby was hospitalized for a week undergoing intense blood transfusions to rid any traces of the poison.

Nicknamed the 'sweet, silent killer', carbon monoxide is a lethal ghost gas; colourless, odorless, tasteless, and toxic. If enough is inhaled, carbon monoxide poisoning is fatal. Scientifically, it is the result of an incomplete combustion of organic matter combined with an insufficient oxygen supply that prevents complete oxidation into carbon dioxide. It is naturally and commonly produced by heaters and cooking appliances as a bi-product of the burning of fossil fuels.¹

Carbon monoxide poisoning remains the number one cause of accidental poisoning deaths in North America. In the late 1990s a slew of carbon monoxide-related deaths and near-death accidents sparked a new by-law. The first by-law of its kind, carbon monoxide detectors became mandatory in every residence as of November 1, 1998.² In 2008, Toronto alone had 17 fire-related deaths sparking the launch of Project Zero last May. The new public education program is aimed at "reducing residential fire deaths to zero."³ The first program of its kind in the city, fire inspectors will go door-to-door in their communities "ensuring that there are working smoke alarms on every storey and at least one carbon monoxide alarm in every home visited, and that homeowners are provided with the necessary information to help keep their homes and families safe. No one should die ever in a home fire."⁴

1 Prockop LD, Chichkova RI (Nov 2007). "*Carbon monoxide intoxication: an updated review*". *Journal of the Neurological Sciences* 262 (1-2): 122-130.

2 <<http://wx.toronto.ca/inter/it/newsrel.nsf/0/1666a25f184722ee8525751c006c5623?OpenDocument>>.

3 <http://www.toronto.ca/fire/prevention/projectzero.htm>

4 <http://www.toronto.ca/fire/prevention/projectzero.htm>

A STORY OF INVESTIGATION

To the imagination, fire is not a separable datum of experience: it is already linked by analogy and identity with a dozen other aspects of experience. Its heat is analogous to the internal heat we feel as warm-blooded animals; its sparks are analogous to vitality, its flames are phallic symbols, providing a further analogy to the sexual act, as the ambiguity of the word “consummation” indicated; its transforming power is analogous to purgation.¹

-Northrop Frye

1 Bachelard, Gaston. *The Psychoanalysis of Fire*. (Boston: Beacon Press, 1964.) vi.



Fig. 2
Kador Porter's house on fire. 1965-03-20, Elliston, Newfoundland and Labrador, Canada

The human relationship with fire is complex: A vacillation between function and symbol that leaves man unsure of his true perceptions of fire. How do we negotiate our simultaneous innate temptation with our fear of fire; our inexplicable fascinations and our corresponding trepidations?

In 'The Psychoanalysis of Fire', Gaston Bachelard observes the human relationship with fire. He analyzes the existence of fire, both as a literal presence in the history of mankind and as a literary and symbolic presence. He situates himself at a crossroad of science and poetry. After his thorough analysis, he remains unable to draw specific conclusions about the human-fire relationship. In his preface, he writes,

I am going to examine a problem in which objectivity has never held sway, where the initial seduction is so compelling that it deforms the most rational minds and leads them to the cradle of poetry, where day-dreams replace thought, where poems hide theorems. This is the psychological problem presented by our convictions about fire. The problem is so directly psychological that I have no hesitation in speaking of a psychoanalysis of fire.¹

Bachelard's anthropological study on the birth of fire in human history and cultural representations of fire are unique, focusing on the concept of fire, rather than fire itself. He is interested in the human conceptualization of fire, and our subjective responses to it. Throughout his study, he points out the misconceptions of scientific objectivity, rather the impossibility of it, stating that we are simply too controlled by passion.

He scrutinizes scientific observations and their subsequent conclusions. Our determination to remain objective while looking at a flame

1 Bachelard, 2



Fig. 3
Prometheus, Aided by Minerva, Steals Fire from Heaven

or a fire is inconsequential; we project ourselves onto the flame. Through historical examples, Bachelard likens this process to ancient alchemists who studied around flames and alembics, musing their reveries as objective scientific conclusions. Bachelard doesn't disparage their findings or texts, rather the feelings induced inside each of us when we study the living objects surrounding us.

Bachelard begins by describing how our psychological problems arise from our perceptions of fire, and more than any other phenomenon, are "charged with fallacies from the past."²

What we first learn about fire, is that we must not touch it. ³

- Gaston Bachelard

Fire can be used to explain anything; it is both intimate and universal. It represents both good and evil; it "shines in Paradise" and "burns in Hell."⁴ Our understanding of fire comes from "social reality" rather than a "natural reality"⁵, in that our natural reflex to resist touching a flame actually teaches us nothing about the fire, yet we gain respect for fire through discipline. "General prohibition" quickly becomes "general knowledge," when at a young age we learn not to touch fire. Social rebellion comes in the form of "clever disobedience"; Prometheus (who stole fire from Zeus) is our model.⁶

Fire induces reverie; "Fire suggests the desire to change, to speed up the passage of time, to bring all of life to its conclusion, to its hereafter."⁷ Fire is a metaphor for nearing death, a symbolic "call of a funeral pyre."

2 Bachelard, 3
3 Bachelard, 11
4 Bachelard, 7
5 Bachelard, 10
6 Bachelard, 11
7 Bachelard, 16



Fig. 4
'Saint Barbara,' Master of Flémalle, 1438

That which is purely artificial insofar as objective knowledge is concerned remains then profoundly real and active for unconscious reveries. The dream is stronger than experience.⁸

- Gaston Bachelard

Bachelard examines how man created fire historically. Logically two sticks were rubbed together, creating a spark and eventually fire. However, this as a highly sexualized experience in that man associated the act of sex with the sensation of fire. The desire to create fire is perhaps a yearning to recreate a moment of euphoria, similar to a sexual act.

Fire is used as a metaphor for sex and reproduction; a small (even dying) spark can lead to a vast blaze; a man can begin another generation. An Egyptian myth of digestion claims that fire is an insatiable animal that feeds itself. Persians sacrificed to it, and during the Middle Ages, fire was food to the stars. Historically, scientists have been preoccupied with the notion that fire seems to have no limit to its power.

Bachelard discusses the enlightening power of self analysis and knowledge through the metaphor of the consuming fire. Furthermore, how the struggle against sexual urges is parallel to a fight against fire. Fire in nature occurs in these two categories simultaneously: pure and impure, good and evil; it is a complex concept and metaphor.

One can find paradise in fire's movements or in its repose, in the flame or in the ashes... To seize fire or to give oneself to fire, to annihilate or to be annihilated, to follow the Prometheus complex or the Empedocles complex, such is the psychological alteration which converts all values and which also reveals the clash of values.⁹

- Gaston Bachelard

Bachelard writes, "We have indeed tried to show that fire is, among the makers of images, the one that is most dialecticized. It alone is subject

8 Bachelard, 20
9 Bachelard, 112

The dove descending breaks the air
With flame of incandescent terror
Of which the tongues declare
The one discharge from sin and error.
The only hope, or else despair
Lies in the choice of pyre of pyre—
To be redeemed from fire by fire.

Who then devised the torment? Love.
Love is the unfamiliar Name
Behind the hands that wove
The intolerable shirt of flame
Which human power cannot remove.
We only live, only suspire
Consumed by either fire or fire.

Excerpt from 'Little Gidding'
Four Quartets, T.S. Elliot

and object.”¹⁰ His work does not intend “to impose a logic, or a reality” on poetic creation, rather examine the objectivity, to “set ourselves at the place at which the original impulse is directed into various channels.”¹¹ He does not draw any specific conclusions, rather probes and obsesses about the origin and root of all things fire and our subsequent connections to it. As such, this analysis, much like our own relationship to fire, remains difficult to discuss or review; fire is too elusive and our connection to it, too complex.

10 Bachelard, 111

11 Bachelard, 109

A STORY OF AN ORIGIN

The men of ancient times bred like wild beasts in woods and caves and groves, and eked out their lives with wild food. At a certain moment it so happened that thick, crowded trees buffeted by storm and wind, rubbed their branches together so that they caught fire: such men as witnessed this were terrified and fled. After the flames had calmed down, they came nearer, and having realized the comfort their bodies drew from the warmth of the fire, they added wood to it, and so keeping it alive they summoned others and pointed it out with signs showing how useful it might be. In this meeting of men sounds were uttered at different pitch, to which, through continued daily exercise, they gave customary value to the chance syllables. Then, by pointing to the things in most common use, they began to talk to each other because of this accident. Since the investigation of fire brought about the congress of men, and their counsel together and cohabitation, and since many people now met in one place, and had moreover been given a gift by nature about that of other animals, that they did not walk with their heads down, but upright, and could see the splendor of the world and the stars; and since they could make whatever they wished with their hands and fingers easily, some of that company began to make roofs of leaves, others to dig hollows under the hills, yet others made places for shelter in imitation of the nests and buildings of swallows out of mud and wattle. Then, observing the construction of others, and by their own reasoning adding new things, as time went on they built better dwellings. Since men were of an imitative and docile nature, glorying in their daily inventions, they would show each other the results of their building; and so, employment. At first, setting up forked posts, and putting withies between them, they finished their walls with mud. Others built walls out of dried clods, framed with wood, and covered with reeds and leaves to keep out rain and heat. When, during the winter, the roofs could not resist the rains, they devised gables, and smearing the inclined roofs with clay, they made water run off.¹

¹ Rykwert, Joseph. *The Idea of a Town: The Anthropology of Urban Form in Rome, Italy and the Ancient World*. (Princeton, N.J.: Princeton University Press, 1976.) 105

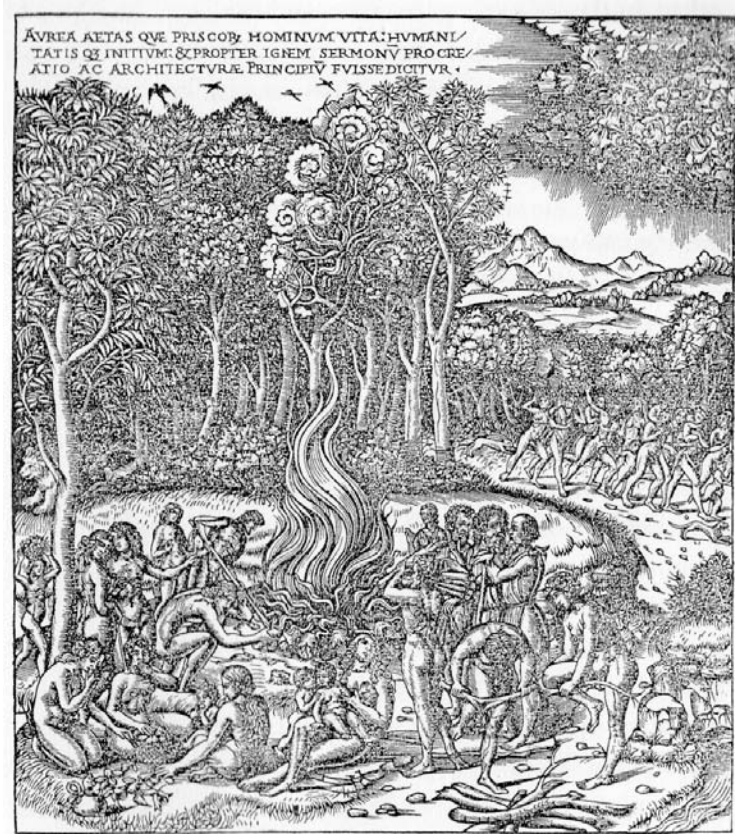


Fig. 5
The discovery of fire in Casarino's *Virtuus*, 1521

If the story of architecture begins with fire, our storyteller is Vitruvius. An army engineer who served the Roman army under Julius Caesar, very little is known about his life. His work '*De Architectura*' (or '*Ten Books on Architecture*') is the only contemporary source in its entirety on classical architecture we have today.

Written around 15 BC, '*Ten Books on Architecture*' argues that the origin of human society stemmed from the discovery of fire. This evolved into the origin of the act of building for man with the primitive hut, and subsequently architecture and the individual dwelling.¹ It was fire from which human society arose, "the congress of men, and their counsel together and cohabitation, and since many people now met in one place."

The close bond between construction and fire is clearly reflected when architecture is reduced to its most elemental and primitive form: on one hand, in stories about the origin of architecture and the rituals of urban foundation; on the other, in the infantile perception and the psychoanalysis of the house. In all beginning or origins, in myths and rituals as well as in the preconscious or unconscious mind, construction and fire are intermingled and intertwined.²

Cesariano, in his commentary on Vitruvius, states, "For it is fire which not only comforts many animals (and especially humankind) but it also moves them to speaking and then they are content and keep each other company."³ Subsequently, the construction of the first huts and shelters also began.⁴

1 Fernández-Galiano, Luis. *Fire and Memory : On Architecture and Energy*. (Cambridge, Mass. ; London: MIT Press, 2000.) 212

2 Fernández-Galiano, 8

3 Rykwert, 114

4 Fernández-Galiano, 9



Fig. 6
The invention of fire, after Fra Giocondo

The texts from poet and philosopher Lucretius who speculated the Greek Hephaestus represented “the *ignis elementatus*, the civilizing physical fire that counters the symbolic fire of knowledge in Prometheus” as a leader in humanity, teaching the crafts to men who have “lived in caves like wild beasts.”⁵ Vitruvius also uses the term *ut ferae* (“like wild beasts”) to describe human life before the discovery of fire, the resulting formation of society, and ultimately the beginning of architecture. With lightning and the swaying of branches, a manageable fire was produced. The sun showed man how to cook food and he began building his hut for shelter.

The speculation of our origin was of fundamental importance to Vitruvius.⁶ Rooted in the mythologies of several primitive societies and Epicurean evolutionism, Vitruvius’ ideas remain relevant. Anthropologists connect the separation of man from his biological predecessors with his domestication of fire. Even now, signs of combustion are assured indications of human habitation.

This relationship between the built home and fire maintains not only a functional dimension but a symbolic one, as well. Fire transforms our food and warms our bodies; it is also the symbol of the soul of the city and of the house. It has become the “basic element in the rites of urban and domestic foundation.”⁷ If the scheme of the cosmos is represented by our organization of space, fire inhabits a very privileged place in both. In everyday occurrences, symbolic and mythical occurrences, the house marries construction with combustion. “The original fire burns warmly and enigmatically in the primitive hut.”⁸ Throughout history, the fraternity between the house and fire has undergone several amendments and metamorphoses.

5 Fernández-Galiano, 9

6 Rykwert, 112

7 Fernández-Galiano, 212

8 Fernández-Galiano, 212



Fig. 7
Portrait of Hestia

If the process has a guiding thread, it is perhaps the progressive erosion of the symbolic value of fire, an erosion that flows parallel to fire's quantitative multiplication." Fire grows, reproducing and dividing itself rapidly. With a decrease in quality directly related to an increase in quantity, "losing ritual and mythical content; it is dislodged and then ousted all together, from the central place it occupied in architecture."⁹

Fire is intimately associated with construction not only in our immediate histories, but also in the myths of our origin, in which fire holds the rites of worship in urban and domestic foundations. In the classical world, fire had an extraordinarily significant role concerning the city and the home. For Greeks and Romans, the sacred fire in the centre of the city was "its prime altar, the origin of its identity and the font of religious life."¹⁰ Hestia, the Greek goddess of the hearth, was "the 'focus' of the internal space of the city... the 'home you start from.'" Her fire burned in the hearth of the city as a symbol of community and power.¹¹

Hestia is one of the least known Olympians. She has limited mention in mythologies and the Homeric Hymns. She and her Roman equivalent Vesta, were "not represented in human form by painters or sculptors. Instead, the goddess was felt through a living flame at the centre of the home, temple and city."¹² She was the oldest sister of the first-generation Olympians and by birthright one of the twelve major Olympians.¹³

Born to parents Rhea and Cronus, Hestia was the eldest of her two sisters, Demeter and Hera, and her three brothers, Hades, Poseidon and Zeus. Her father Cronos was told by his mother (the Earth) and by his father (the starry Sky) that he was to be overthrown by a powerful son. Prompting a deep paranoia, he ate his children as soon as they

9 Fernández-Galiano, 212

10 Rykwert, 12

11 Fernández-Galiano, 12

12 Bolen, Jean Shinoda. *Goddesses in Everywoman : A New Psychology of Women*. (1 - ed. San Francisco: Harper & Row, 1984.), 107.

13 Bolen, 16

To Hestia

Hestia, keeper of the lord far-shooter
Apollo's holy house in splendid Pytho;
With smooth anointment flowing through your hair:
Come to this house, draw near it, with like-minded,
Shrewd Zeus, and lend your favour to my singing.¹

To Hestia

Hestia, all the high-built homes of mortals,
Who walk the earth, and of the deathless gods,
Grant you and everlasting seat, fine portion
And right, and greatest honour. In your absence
There are no mortal banquets. You are offered
A honey-sweet libation first and last.
Come, Zeus and Maia's son, Argus-destroyer,
Luck-bringer, messenger with your gold staff,
Live with her in this bright house, in close friendship...
Join with sweet, modest Hestia and help us:
Be generous - you both know earth's people.
Cronus's daughter, joy! - and gold-wand Hermes.
I recite your hymn and then another. ²

The two Homeric Hymns to Hestia are "invocations, inviting her into the house or temple."

1 Ruden, 87.

2 Ruden, 92.

left their mother's sacred womb. He was the "king amongst the sons of Ouranos and did not wish any other god to succeed to his possession of this dignity."¹⁴ Before giving birth to Zeus, grief-stricken Rhea asked for counsel from her parents as to how she could bring a child secretly into the world and also take vengeance for her swallowed children. Answering her prayers, they sent her away to birth her youngest son, Zeus. Through "force and deceitful cunning,"¹⁵ Zeus eventually returned to overpower his father. The swallowed children were saved, with Hestia being the last one out of Cronus's belly. She is simultaneously the eldest (and the one devoured first) as well as the youngest (the last to be yielded up again.)¹⁶ Her brief mythology is further described in the Homeric Hymn to Aphrodite:

Shy Hestia too shuns busy Aphrodite.
This lady was firstborn to cunning Cronus-
And last born: Zeus the aegis-holder planned it.
Poseidon and Apollo both pursued her.
She was unwilling, stubbornly refused them.
The goddess swore a powerful oath
On the head of Zeus, her aegis-holding father,
To stay untouched - and this has had fulfillment.
Zeus gave a glorious gift instead of marriage:
The house's central seat and the fattest portion,
And shares of reverence in all the gods' shrines,
Since mortals give to her the greatest honour.¹⁷

Later in her life, Aphrodite induces both her brother Poseidon, God of the Sea and one of Hestia's brothers, and Apollo, the younger God of the Sun, to fall in love with her. However, attempts to woo her are firmly denied. Following a defeat of the Titans, Hestia requests of Zeus (the

14 Kerenyi, Karl. *The Gods of the Greeks*. (London: Thames and Hudson, 1951.) 22.

15 Kerenyi, 22.

16 Kerenyi, 22.

17 Ruden, Sarah. *Homeric Hymns*. (Indianapolis, Ind.: Hackett Pub. Co., 2005.) 58.

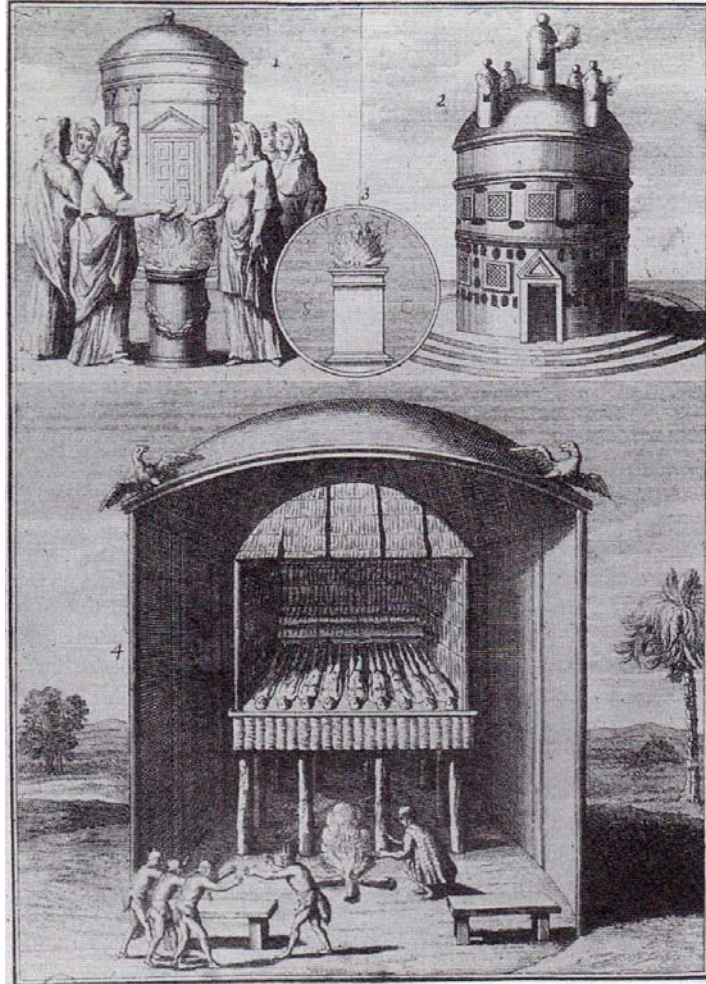


Fig. 8
The cult of Vesta and of the sacred fire compared with a similar cult of fire at the temple of Louisiana's Natchz Indians.

new ruler of the gods) the “dignity of remaining a virgin and receiving the first victim of every sacrifice.”¹⁸ Granting her this, “she obtained as her sacred place the central point of the house, the hearth - which is also the meaning of her name. Moreover, she received not only the first, but also the last sacrifice at every ceremonial assembly of mortals.”¹⁹ There have been rumors of a tale told where she was attacked by Priapos, but no story has ever shown her taking a husband or ever being removed from her established place.²⁰

In Rome, Hestia was worshipped as the goddess Vesta. In her temples, the sacred fire was tended by the Vestal Virgins, who were “required to embody the virginity and anonymity of the goddess. In a sense, they were human representations of the goddess; they were living images of Hestia, transcending sculpture or painting.”²¹ Young girls, often under the age of seven, chosen to be the Vestal Virgins were taken to the temple. There, they were dressed the same and required to maintain chastity or face deathly consequences. Set apart from other citizens, they were honoured and praised in the city.²² “In Greece, there was no persona or function comparable to the Vestal virgins.”²³

This tending of the hearth was a sacred duty performed by women, specifically the daughter of the house prior to her marriage. Hestia’s function as goddess of the hearth is related to the permanency of her virginal status.²⁴ However, there existed innately a polarity between two images on Hestia, “On one hand there is the model virgin, but on the other, in that Hestia is the power of fertility.”²⁵

18 Kerenyi, 91.

19 Kerenyi, 91.

20 Kerenyi, 91.

21 Bolen, 109

22 Bolen, 109

23 Vernant, Jean Pierre. *Myth and Thought among the Greeks*. (London: Routledge & K. Paul, 1983.) 131

24 Vernant, 131

25 Vernant, 143



Fig. 9
Vestal Virgins Services at the Temple

Upon marriage, a newlywed couple ritualized their first new household fire, consecrating their new home. In marriages, the purity of the hearth is ensured through the “integration of the wife into the household of her husband.”²⁶ They also honour Hestia as the symbol of fertility, in hopes of expanding their family with offspring.²⁷ Marriage was not solely for purposes of commerce; rather it allowed men of a particular lineage to “found a family and so ensure the continued survival of their house.”²⁸ Marriage was viewed as almost a literal “ploughing of the soil, the woman symbolizing the furrow, and the man the ploughman.”²⁹ Another Hestian ritual took place after a child was born: when the infant was five days old, he was carried around the hearth to symbolize admission into the family. Often, the naming of the child also occurred at this time.

She bestows on the house the centre that sets it in space, so Hestia ensures to the domestic group its continued existence in time. It is through Hestia that the family line is perpetuated and remains constant, as though in each new generation the legitimate offspring of the household were born directly from the hearth.³⁰

The ritual consisted of two parts: first, a ring of people stood naked around the hearth holding the newborn in their arms. Next, they laying him directly on the ground near the fire. The two elements directly inform each other; “direct contact with the floor of the house completes the integration within the domestic space which is also brought about by the motion of the child describing a closed circle around the fixed hearth.”³¹ Additionally, holding the child over the flames to be purified is an attempt at immortality, but then placing him on the ground as a rec-

26 Vernant, 146

27 Bolen, 108

28 Vernant, 139

29 Vernant, 140

30 Vernant, 133

31 Vernant, 153



Fig. 10
'Opfer für die Göttin Vesta' by Sebastiano Ricci (1723)

ognition of mortality. A festive banquet followed.³² From her Homeric Hymn:

In your absence there are no mortal banquets. You are offered a honey-sweet libation first and last.³³

Feasts began and ended with an invocation to the goddess, forming a cycle “enclosed within time as the hearth forms an enclosed circle in space.”³⁴ The food cooked on the altar of the domestic hearth engenders a religious unity and fellowship amongst the guests surrounding the table. A strong bond was symbolically created between the table companions. Strangers were not welcome to attend feasts, which were kept private, asserting family unity through consuming a feast together. When a stranger was welcomed in to share in a meal, they were first led to the domestic hearth. Here, they crouched near the fire to “recover social and religious roots” in order to become integrated into the domestic space.³⁵ “...Contact with the hearth assumes the value of deconsecration and reintegration within the family space. The centre symbolized by Hestia defines, therefore, not only a closed and isolated world: it presupposes, as a corollary, other analogous centres.”³⁶

Similarly, each city-state had a common hearth with a sacred fire in the main hall. Here, guests were officially entertained, and every colony took the sacred fire with them from their home city to light the fire of the new city. Hestia moved with people, linking old and new, symbolizing continuity and relatedness, shared consciousness and common identity.³⁷ “The communal hearth, the Hestia of the city, become[s] the centre of the state and the symbol of the unity of the citizens.”³⁸

32 Bolen, 108

33 Ruden, 92

34 Vernant, 141

35 Vernant, 141

36 Vernant, 142

37 Bolen, 108

38 Vernant, 151



Fig. 11
A vase painting of a woman at sacrifice.

The agora as a “circumscribed place round a specific centre” became the heart of the city. Citizens came to consult with the oracle of Hestia as well. Through incense burning, lamp-lighting or other actions around the goddess, the stranger is infused with the “religious qualities necessary” to be able to contact her.³⁹ Hestia’s presence in the temple was central to the everyday life.

Hestia’s symbol was the circle and her first hearths and temples were round. Neither home nor temple was sanctified until her presence was established. One could feel her through a sacred fire that provided warmth, illumination and heat.⁴⁰ However, unlike other gods and goddesses, Hestia’s significance is found in rituals rather than myths and representations. Rituals symbolized by fire were required for major rites of passage throughout civilian lives. She marked the beginning of the importance of ritual surrounding fire; she established a symbolic presence and need for fire in home.

39 Vernant, 158

40 Bolen, 107

A STORY OF DESTRUCTION

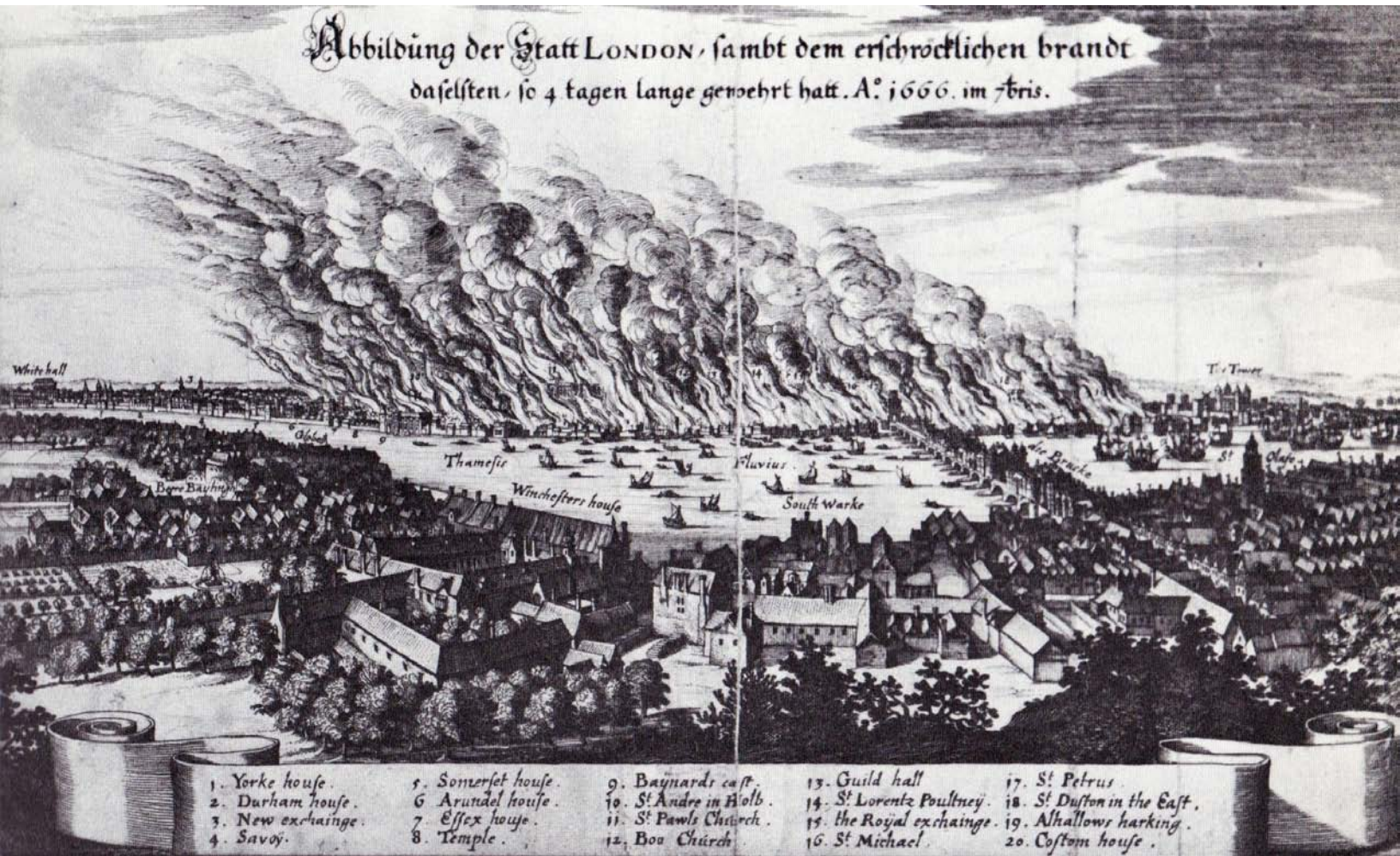


Fig. 12
 London Burning By Day, From a German print in the Goss Collection

On the morning of September 2, 1666, a local baker, Mr. Farynor awoke to the smell of smoke. He lived above his shop on Pudding Lane, a street so narrow a cart could barely pass along it, that lead from Eastchip down to the Thames river. The fire had begun across the lane from the stocks of straw and fodder kept in the yard of the Star Inn. Alarmed and frightened neighbours formed a bucket chain in attempts to extinguish the fire. The Lord Mayor arrived about an hour later, and deemed the fire inconsequential. He left the scene to return back to bed. Six hours later, the fire had rapidly spread to nearby warehouses along Thames Street as well as St. Magnus' Church. The church's roof was ablaze, viciously lighting the surrounding buildings. Houses along the London Bridge burned and collapsed, blocking the roadway. Waterwheels under the bridge, furnishing a part of the city's water supply, were also destroyed.

By noon that day, Lord Mayor returned once again. Seeing the consequences of the fire, he began ordering the demolition of buildings in order to form a firebreak. Building owners, however, resentfully refused the instructions and the fire spread before any break could be created. Witnesses gave recounts of "great tragedy, immense loss, disorganization, and one great inglorious muddle."¹ Carters and boatmen along the rivers charged inflated prices for citizens to move their goods and belongings. Crowds of looters formed, blocking the way for fire engines along streets that were already too narrow. King Charles II gave orders to Lord Mayor not to spare the demolition of any building if it could help contain the fire. He also sent along trained guards under the Duke of York, but they could do little upon arrival.

On the second day of the fire, the King revoked the authority of Lord Mayor, supplanting him with the Duke of York. Fire posts of 100

1 Jackson, William Eric. *London's Fire Brigades*. (London: Longmans, 1966.) 7



Fig. 13
Print from 1613 from "the Burning of Tiverton", in Bodleian Library

men each, were set up circling the fire, but the fire continued to spread; the timber-frame houses were only a yard or so apart along narrow streets.

The fire prevention ordinances as to building construction had been largely ignored. Apart from the few inefficient fire engines, the only fire-fighting appliances were the fire hooks, buckets and squirts. The water supply in the conduits and water pipes was totally insufficient.²

King Charles arrived that evening to view the fire himself, gifting guineas to the firefighters for their efforts. In a final effort, gunpowder was used to blow up buildings in order to form firebreaks. By Wednesday evening, the fire had finally ceased, but rendered massive tragedy and loss.

Most shop owners were left completely ruined, spending the rest of their lives in debtors' prisons. The colossal damage was estimated to cost over £10 million, and leave over 100,000 people homeless. It consumed 13,000 houses, 84 churches, 44 livery company halls and almost every public building. The King's Fire Brief that followed in order to provide aid for sufferers was a meager £13,000.

The cause of the fire still remains unclear. Mr. Farynor, the local baker swore under oath "he had drawn his fire the night before and had complied with the City's safety regulations."³ Despite England being at war at the time with the French and Dutch, all foreign suspects were cleared of charges. The Common Council of the City of London decided that the fire was due to "the hand of God upon us, a great wind, and the season so very dry." Contemporary reports confirm an unusually dry season and references to a great wind.

Experience of great fires in modern times, especially in the immense conflagrations of the second world war, shows that whenever there is a huge fire, engendering enormous heat which up rises, cold air will rush in below and create, as one might call it, an artificial wind. It seems

2 Jackson, 8

3 Jackson, 10



Fig. 14
Ludgate in the Great Fire, From a painting believed to be contemporary

probably that the 'great wind' of the Great Fire was of this type of origin.⁴

With questions of cause dismissed, questions of remedy now arose. The city was rebuilt with vigor and speed. However suggestions by local architect Sir Christopher Wren for a new town plan with an improved street layout were not accepted. Each property owner was free to build as he wished on his site. However, city authorities did produce an Act of Parliament "for better regulation, uniformity and gracefulness" for new constructions. It specified a new code of constructional requirements with severe penalties for non-compliance.

The Common Council of the City also itself promulgated in 1667 a new code of fire prevention regulations. Under these, the City was divided into four quarters each provided with 800 leather buckets, 50 ladders, of which 10 were to be 42 feet long, 24 pickaxes and 40 shovels. Each parish was to have at least two brass squirts. The 12 Livery Companies were to provide each an engine, 30 buckets, two squirts and three ladders. Lesser companies were also to make such provision as they could.⁵

Each home now required buckets to extinguish ashes each night with water. Appointed bellmen patrolled the streets by night, and plugs were put in water mains to avoid any accidental cutting of the pipes. New protocol dictated that during any large fires, inhabitants were to stay indoors to avoid disorder and confusion in the streets. Each Livery Company annually elected a representative who would assist in fire fighting, along with a skilled engineer selected by the mayor. Despite having regulations and equipment implemented, should a fire break out, there still lacked a permanent standing brigade with an organized direction.

4 Jackson, 10

5 Jackson, 10



Fig. 15
Great Fire Scene

This was the first spark of public policy regarding fire safety and prevention, as well as the creation of a fire service. Another two hundred years would pass before the public would approve of permanent formations (paid for by tax dollars) of fully trained, professional, on-call firefighters.

“Fire, as always, was a precious friend, and a dreaded enemy.”⁶

Before the Great Fire, fires occurred in the city with no implementation of reactionary policies. Typical dwellings were built of simple timber-frame construction, topped with thatched roofs and no real evidence of fire prevention. Fire fighting methods for the time included buckets of water, long fire hooks for pulling down a burning roof before collapsing, and grappling irons and ropes to prevent spread by pulling down adjoining houses. Fire was treated as a normal risk of life, much like disease or injury, and prevention methods existed in the form of religious prayer.

Additionally, making a domestic fire in those days was difficult, taking up to half an hour with a flint and tinder seldom letting the fire go out, despite curfew laws dictating their mandatory extinguishing. Often, if a fire did extinguish, a neighbour could lend a shovel of burning embers to revive your fire. The reluctant attitude of Londoners towards the risks of fire prevention was exemplified by several city fires.

Fire was feared but few precautions were taken; such regulations as existed were often ignored, or resented, especially when they involved the citizen in expense.⁷

Efforts to implement regulations had been attempted, but ignored and not enforced. The first Lord Mayor of London, Henry Fitz-Alwin issued a local law in 1189 under which all new buildings constructed were to be of stone and roofed in only slate or burnt clay tiles. The law prohibited

6 Jackson, 2

7 Jackson, 2

thatched roofs and made it mandatory to separate party walls at 3-feet wide and 16-feet high.

However, in 1212, less than 25 years later, what some consider the original “Great Fire of London” burnt down a significant part of the city. Several wooden houses along the old London Bridge and immediate surrounding area burned down, killing over 3000 people. “The fire, it would seem, could hardly have spread with such rapidity as it did, and to such an extent, if the local laws and regulations had been obeyed. In disregard of the prohibition thatched roofs remained.”⁸

Chimneys also proved a frequent and great source of danger. Until near the 14th century, domestic heating was typically a fire from a hole let into the middle of the floor. Smoke usually found its way out through a hole in the roof. Wealthier homes placed the fireplace against the wall and the hole in the roof would be capped with a louver lantern. The earliest form of the chimney made appearances, typically made of hollowed out logs, set on end above a fire, becoming illegal less than 50 years later.⁹

Before the Great Fire in 1666, London lacked consistency in enforced fire safety strategies and policies. Even where equipment was provided, there was the lack of manpower to operate it. Inviting fire into our homes involves trepidation; fire is capable of great destruction. Domesticating this menace required centuries of practice, and this Great Fire was not the first time it had escaped our boundaries. It was, however, the first time in history that we had the intelligence to create a larger policy to restrain it. Today, Canada’s national building codes (and fire codes) are directly based upon these policies.

8 Jackson, 2

9 Jackson, 2

A STORY OF PRACTICALITY



Fig. 17
Hermann and Anna Muthesius in the livingroom of the Priory, Hammersmith c. 1896

In 1896, Herman Muthesius, a German architect, author and bureaucrat arrived in London. Working as a cultural and technical attaché for German embassy, he was assigned the task of studying the domestic architecture of the United Kingdom. The purpose was to examine the history and the evolution of the grand English house in the rapidly modernizing 19th century. The approach viewed the architecture of the British house as an expression of British society. This particular subject was sparking national interest, as it was a period of intense imperial and industrial competition between the two countries. The study resulted in a three-volume text, *Das englische Haus*, first published in Berlin in 1904. The book surveys the architecture and decoration, gardens and general way of life corresponding to English houses. Tracking how classical modes were abandoned for newer styles of romanticism, it emphasizes the functional and practical aspects of the architecture in domicile design.

The genuinely and decisively valuable feature of the English house is its absolute practicality.¹

- Herman Muthesius

Muthesius admired the English architects and designers considerably and believed that Germans could learn from their achievements. Though praised in England, such a sociological approach to design and interpretation threatened German architectural theorists. Industrial development began early in England, helping it to develop richly and distinguish itself culturally from Europe. “[The riches] streamed into the rural areas, creating dwelling-places for individuals, making them into little separate

¹ Muthesius, Hermann, and Dennis Sharp. *The English House*. (London: Frances Lincoln, 2007.) Book I, xiii

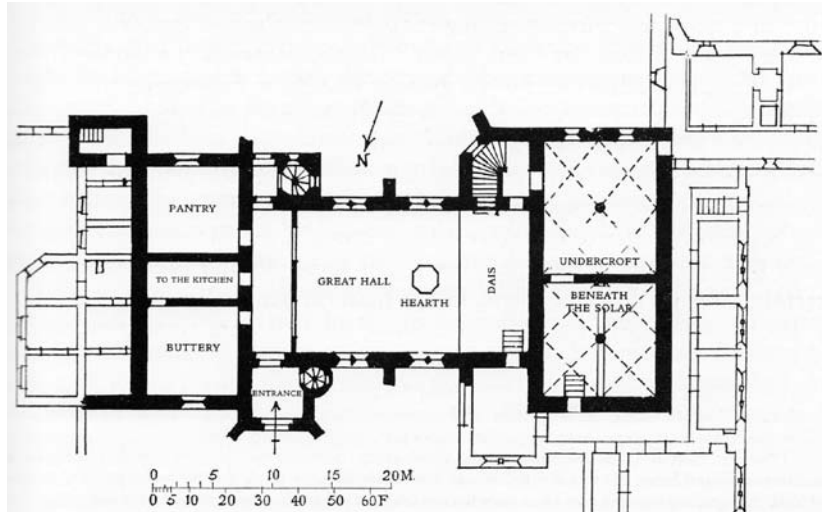
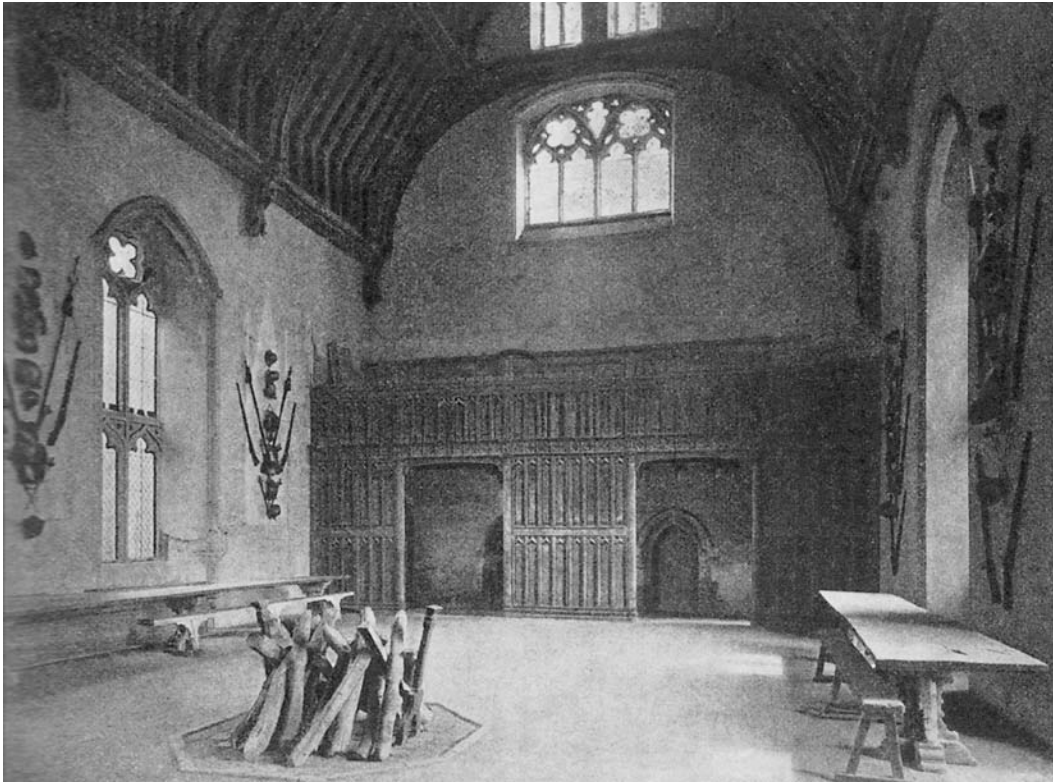


Fig. 18
Top : Great Hall at Penshurst Place, Kent, 14th century. Looking towards the minstrel gallery.
Bottom : The oldest part of Penshurst Place, Kent. Built around 1350.

worlds and concentrating and incorporating all the comforts of life in them.”² The individual dwelling became associated with English society, giving it an element of social independence, and love of the home. With the country’s temperate climate and damp-laden air, the fireplace became a focal point in the home. Muthesius observes; “Gathered round the fire in the seclusion of the room, the family seeks refuge and comfort.”³

With the emergence of the English Hall in the 13th century, a distinctive English way of life emerged. The hall was the central focus on the home. A typically larger room with smaller rooms adjoined on the sides, a large hearth was at the centre. Cast-iron crossbars allowed for good combustibility, with large wooden logs feeding the open fire. Even after surrounding rooms now built fireplaces into their walls, the open flame remained at the centre of the hall for centuries.⁴

What luxury to sit before an open fire!⁵

- Herman Muthesius

The modern English house had a simple interior to showcase the comfortable fireplace, often projecting onto the shape of the exterior. The small bay-shaped hearth became a preferred motif amongst young architects for the next few decades.⁶

To an Englishman the idea of a room without a fire-place is quite simply unthinkable. All ideas of domestic comfort, of family happiness, of inward-looking personal life, of spiritual well being centre round the fire-place. The fire as the symbol of home is to the Englishman the central idea both of the living-room and of the whole house; the fire-place is the domestic altar before which, daily and hourly, he sacrifices to the household gods.⁷

2 Muthesius, Book I, 2

3 Muthesius, Book I, 4

4 Muthesius, Book I, 21

5 Muthesius, Book III, 127

6 Muthesius, Book I, 103

7 Muthesius, Book III, 127

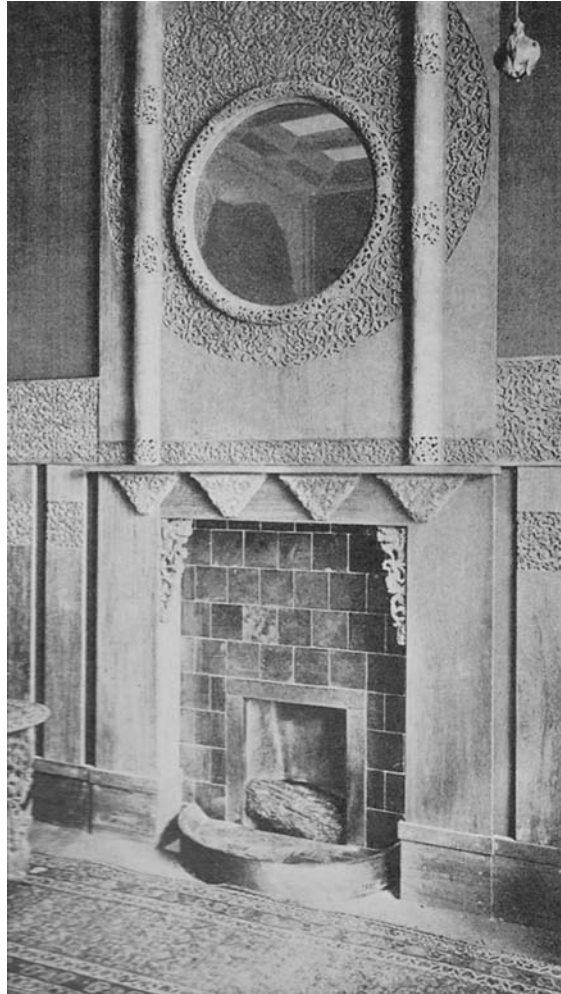


Fig. 19
Example of Rumford Fireplace; draught is conducted from sides and from below.

The English found the open flame superior to all other forms of heating, and it was the only means of heat used in the home. They ignored the efficiency of modern central heating; if it were to ever be in a home, central heating would never replace the open fire. The country's mild climate left a permanent chill, and the rooms musty. The climate also created a high humidity in the atmosphere, that required ventilation, something that fireplaces do well. Though it may not heat efficiently, the justification of the fireplace lies in its capacity to optimally ventilate. The large diameter of the flues gives a good idea of the great volume of air that must have been extracted from each room. Each bedroom had its own fireplace and each fireplace has its own flue.⁸

The actual efficiency of the fireplace was extremely low. Around 14% of the heat effects from the flame warmed the room, with the remainder escaping through the chimney.⁹ Adhering to strict specifications, the thickness of walls, the foundation, the size of the opening must all be built according to regulations.¹⁰ Through the years, the hearth narrowed in size, producing even less heat. New devices were constantly being invented attempting to improve the fuel utilization and efficiency, trying to make the fire burn slower.¹¹

One solution came in the late 19th century with the invention of the Rumford Fireplace. This tall, shallow fireplace was smaller with widely angled covings to allow for better radiation of heat. Designer Sir Benjamin Thompson, Count Rumford streamlined the throat so as to "remove those local hindrances which forcibly prevent the smoke from following its natural tendency to go up the chimney."¹² The Rumford fireplace are generally appreciated for their elegance and heating efficiency.

8 Muthesius, Book II, 2

9 Muthesius, Book III, 134

10 Muthesius, Book III, 130

11 Muthesius, Book III, 134

12 Rumford, 307

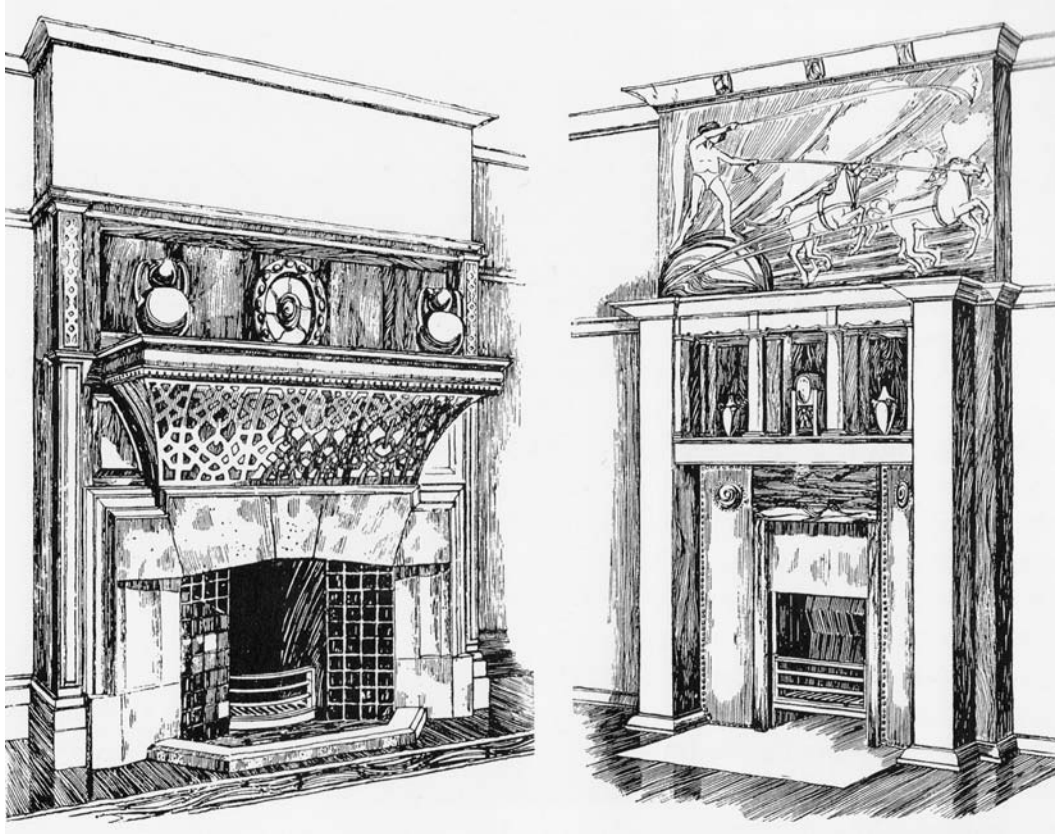


Fig. 20
Designs for fire-places by C.H.B. Quennell supplied by John P. White in Bedford.

Alternate means of heating the home were not established in the English home. Imitation gas-fires were not very common but “cultivated Englishmen with their sound good sense [to] rightly resist this substitute.” Certain difficulties arose during summer months when the outdoor air became warmer than the interior, causing the rooms to have a sooty smell. “Moreover, an unused fireplace is scarcely a cheerful sight.”¹³

Despite its irrationality and trouble, the English could never seem to relinquish the fireplace; removing the fireplace was synonymous with “removing the soul of the body.”¹⁴ The practical issue that it does not actually provide adequate heat for a majority of the year is overlooked. Homes will always have one, justified through “almost exclusively ethical values.”¹⁵ Muthesius had visited the homes and interviewed several leading architects, several of whom became his friends. He was experiencing the blossoming of domestic design in Britain, the birth of the Arts & Crafts movement, highlighting the works of Mackintosh, Norman Shaw, Voysey, and Lutyens, and many other lesser-known talents. It was here that Muthesius found architects working to make practical use of the fireplace, which had proved relatively impractical for the people. Through centering the home and its rooms around the fire, life was breathed into homes and a focused design realized.

As the most important part of the room, decoration and furnishings revolved around the fireplace. This position remained at the forefront in England interiors, as well as early Western homes. A revival of an Elizabethan regard for the fireplace occurred in conjunction with its alliance to the modern movement in art in the latter half of the century. Before this period, the fireplace was a far more ornamental show piece. Designers such as Philip Webb, Eden Nesfield and Norman Shaw have centered their designs to showcase the fireplace as their principle motif. A sense of comfort and coziness began to develop with the fireplace, and

13 Muthesius, Book III, 141

14 Muthesius, Book I, 190

15 Muthesius, Book III, 127



Fig. 21
Diningroom at Cragside, Northumberland. By R. Norman Shaw, for Lord Armstrong, 1870.

it has continued to progress more in the last half century than in its entire history.¹⁶ First translated into English in 1987, “The English House” remains the only truly comprehensive survey of English houses during that period. Muthesius’ understanding of this period has become congruous with public perception of the time.

16 Muthesius, Book III, 128

A STORY OF SYMBOLS



Fig. 24
Allegory of Architecture Returning to its Natural Model, Laugier

Upon completing his studies in 1830 architecture at the University of Munich, Gottfried Semper travelled between Greece and Italy studying ancient architecture. By 1834, he had become a Professor of Architecture at the Dresden Academy of Fine Arts. The city of Dresden was thriving creatively during this time, and Semper had several of his building designs realized. Actively political, he took on a leading role in the 1849 May Uprising that took over the city. When the rebellion collapsed, he was convicted and forced fleeing the city for London. Though this was futile time professionally, it proved to be a fertile period for theoretical, creative and academic development. In 1851, he published *The Four Elements of Architecture*.

Considering fire as the “first and most important, the *moral* element of architecture,’ Semper identified three other elements of architecture; the roof, the mound and the wall. He concentrated his theory on these four elements and their corresponding material-functional categories: ceramics (the hearth), textiles (the wall), stereotomy (the mound), and tectonics-carpentry (the roof).

Semper begins by describing the architecture in ancient Hellenistic Greece through mythology: an “independent creation of Hellenism” that flourished through a trusted system of natural symbolism. “Original constituent parts can still be distinguished, and it’s essential to trace them in order to understand certain manifestations.”¹

In his *Essay on Architecture* (1753), Marc-Antoine Laugier theorizes the preeminent problems of structure and construction, focusing on columns, the entablature, and on pediments. Semper builds on these

1 Semper, Gottfried. *The Four Elements of Architecture and Other Writings*. (Cambridge England: Cambridge University Press, 1989.) 101

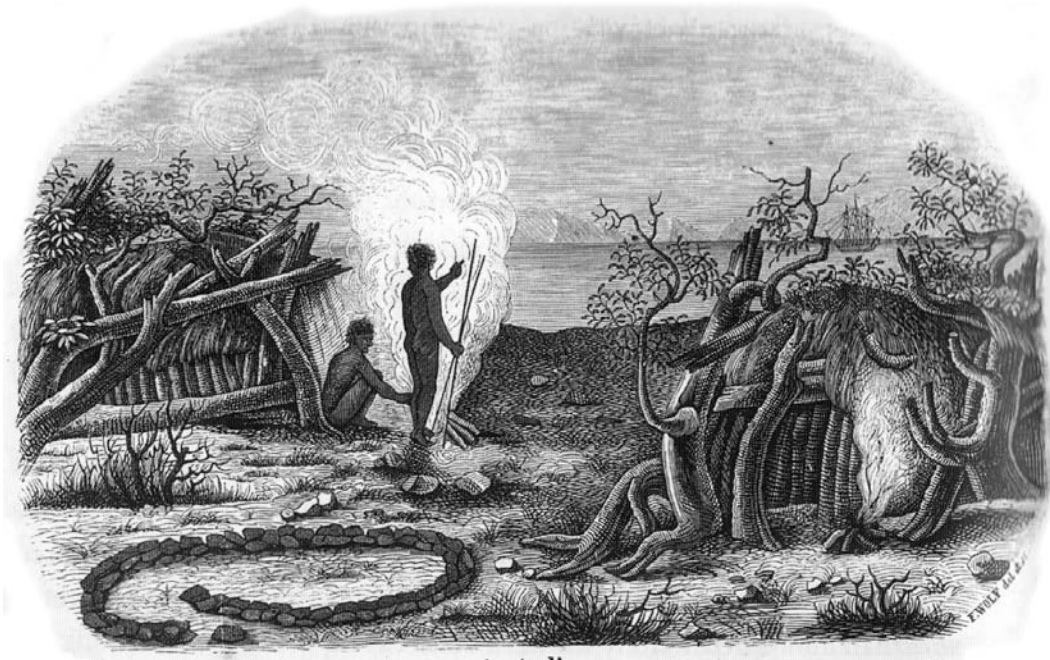


Fig. 23
'Australia'. Frontispiece to Gustav Klemm.

theories, concentrating on how to produce his speculated four elements and the ancient crafts to which they relate.²

Semper challenges the notion of restraining architecture to essential construction and subsequently removing its ornament. “Architecture, like its great teacher, nature, should choose and apply its material according to the laws conditioned by nature, yet should it not also make the form and character of its creations dependent on the ideas embodied in them, and not on the material?”³ Through the selection of suitable materials, a building could fully express itself as a natural symbol of beauty and meaning. Anciently, however, this materialistic approach proves false as it overlooks several significant artistic developments. He returns to the primitive human conditions to propose the following:

The first sign of human settlement and rest after the hunt, the battle, and wandering in the desert is today, as when the first men lost paradise, the setting up of the fireplace and the lighting of the reviving, warming, and food-preparing flame. Around the hearth the first groups assembled; around it the first alliances formed; around it the first crude religious concepts were put into the customs of a cult. Throughout all phases of society the hearth formed that sacred focus around which the whole took order and shape.⁴

The hearth centered the other elements. The roof, the enclosure, and the mound acted as protectors of the hearth’s flame against the environment. Their arranged combinations varied according to climate, natural surroundings, and social relations allowing certain elements to develop while others receded into the background. This was directly related to man’s developmental skills: ceramics and metal works around the hearth, water and masonry works around the mound, carpentry around the roof and its accessories. The primary momentum behind historical architecture was the central hearth and the creation of a shelter to surround it.

2 Leupen, Bernard. *Frame and Generic Space*. (Rotterdam: 010 Publishers, 2006.) 28

3 Semper, 102

4 Semper, 102

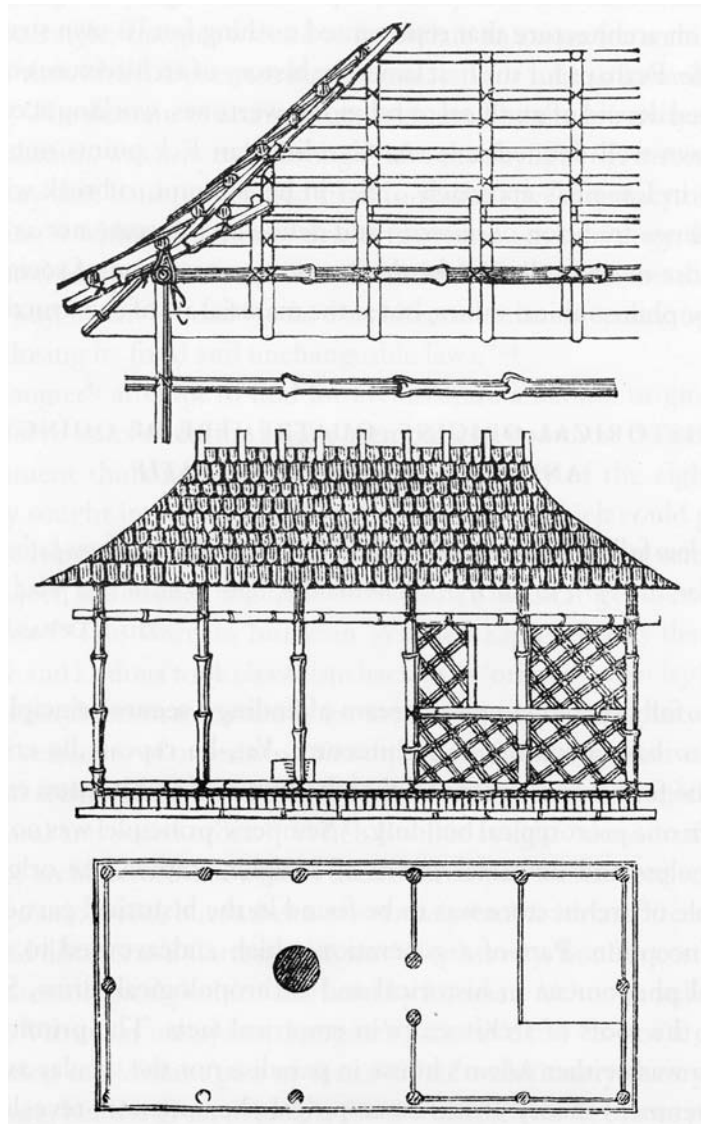


Fig. 24
'The Carib Hut,' Gottfried Semper

The hearth is the first embryo of the social settlement. Around this hearth the first family groups gathered. It was here that the first treaties were made and the first religious rites practised. The hearth is the holy center and the focus to which the different parts of a settlement were directed during all the periods of development of society. Even today it is the center of our domestic life and its higher meaning as an altar, the center of our religious institutions. It is the symbol of civilization and religion.⁵

- Gottfried Semper

German architect Frederick Baumann, who was living in Chicago around this time, introduced Semper's theories to the public through lectures and forums. Recorded and published in local papers and journals such as "Inland Architect" and the architecturally progressive "News Record," the ideas circulated rapidly. Around the same time, "News Record" also published and translated Semper's 'Ueber Baustyle':

The domestic hearth of the wandering nomad, with its sheltering primitive roof-covering remained through all times the sacred symbol of civilization, and retained its bright consecration as altar and as temple-cell. It was the fundamental form of the concealed Egyptian sekos, the Chaldaic Assyrian pyramidal superstructure and the Jewish tabernacle, through all phases of culture to the Holy Kaaba and the Christian Tabernacle, added to this separating enclosure and the hearth-protecting lower structure. We will find all the inventions of architecture expressed in those few primitive motives borrowed, we might say, from the first couple in Eden.⁶

Several years after the publication of Semper's ideas, young progressives from the Chicago school of architects began to take notice, including recently arrived Frank Lloyd Wright. Featured in the World's Columbian

5 Elin, 27

6 Elin, 27

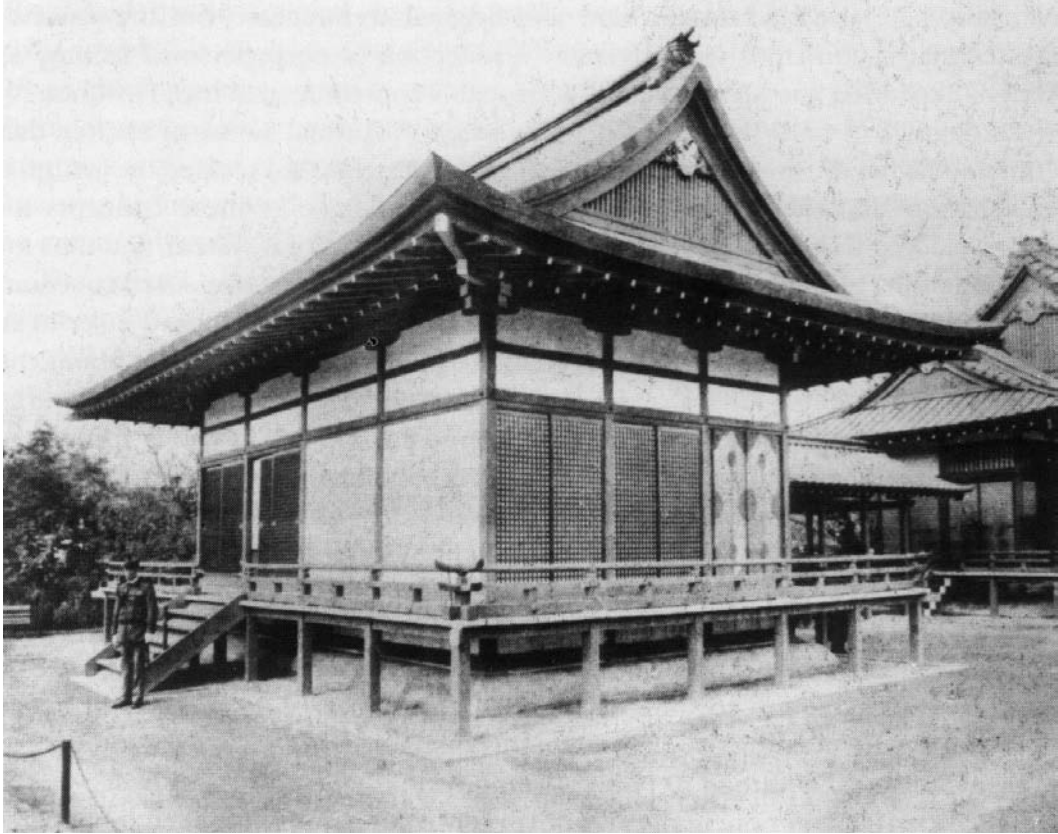


Fig. 25
Japanese Ho-o-Den, World's Columbian Exposition, Chicago, 1893
Detail of South Pavilion

Exposition in Chicago in 1893, scholars were impressed by the Ho-o-Den, the secular adaptation of a Japanese temple, which presented the integral elements of Semper's symbolic architectural system. "The basic elements of this Japanese structure were its shrine, which corresponded to Semper's hearth; its platform; its non-structural, sliding screen walls, which were analogous to Semper's wickerwork walls; and its broad, spreading roof."⁷

Through an anthropological lens, Semper began to dive into the origins of architecture, striving to "delineate and explain the origin and transformation of the formal motives of the technical and tectonic over the course of their historical development."⁸ He created "a comprehensive architectural theory explaining the meaning and transformational nature of architectural form."⁹

7 Elin, 27

8 Mallgrave, Harry Francis. 1996. *Gottfried semper : Architect of the nineteenth century : A personal and intellectual biography*. (New Haven, CT: Yale University Press.) x

9 Mallgrave, x

A STORY OF IMPRACTICALITY



Fig. 26
Frank Lloyd Wright, 'Fallingwater'

Semper, as we have seen, had argued that historically the mound, the enclosure, and the roof had clustered around the hearth to protect the fire from the other three elements. At Fallingwater, the architecture makes a celebration of the four elements, with fire, in the form of the hearth, at the symbolic core. Through the walls, the chimney-stack, and even the cantilevered terraces, the earth pervades the house in actual and metaphorical ways.¹

1 Elin, 53

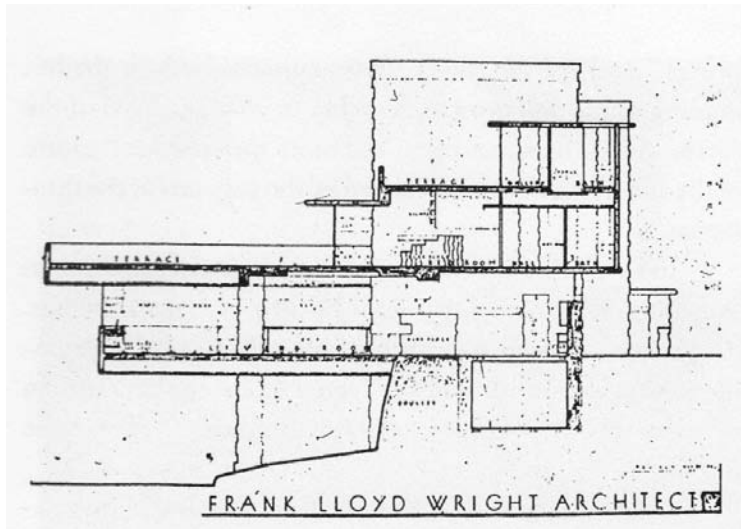


Fig. 27
"Frank Lloyd Wright at the service of fire: the hearth is the heart of the home, and the ceremonies of domestic life are celebrated around its sacred and changing flame."
Top : Fallingwater; a fire on a rock. Frank Lloyd Wright, 1935
Bottom : Interior of the second Jacobs House. Frank Lloyd Wright, 1946

Robert Misrahi considers the philosophical building of a hearth a metaphor;

The central foyer... like the fire that is at once punctual and cosmic, from which all these movements and all these beginnings emanate, will be created by reflection, that is, the optic and reflective interaction that the visitors work out among and in themselves, nourished as they will be by their respective, common and mutual affirmation. ¹

The mention of fire introduces “agitation and interchange, movements and beginnings, interaction and unpredictably.”² Wright is representative of this igneous, organic and emotionally agitated view; “Fire is precisely where the keystone of Wright’s environmental vision resides.”³ His Prairie House style revolves around the hearth, both as a thermal and compositional focus around which “architectural space and the life of its inhabitants are elaborated.”⁴

In Wright’s prairie houses, the architectural grammar used was directly rooted in the four elements of Semper, and the equivalent Japanese Ho-o-den. The integral elements of the Prairie House type were the fireplace, featuring a prominent chimney and treated as a domestic altar; the wide spanning roof; the low base from which the building rose; and the walls, “conceived as space-enclosing screens, which rose from the base until they reached the line of windows below the roof. These windows, often a continuous series, allowed the roof to float visually above the walls, thereby articulating each element.”⁵

1 Mishari, Robert. *Traite de bonheur, vol. 1: Construction d'un chateau.* (Paris: Seuil, 1981.) 45

2 Fernández-Galiano, 24

3 Fernández-Galiano, 28

4 Fernández-Galiano, 29

5 Etlín. 28

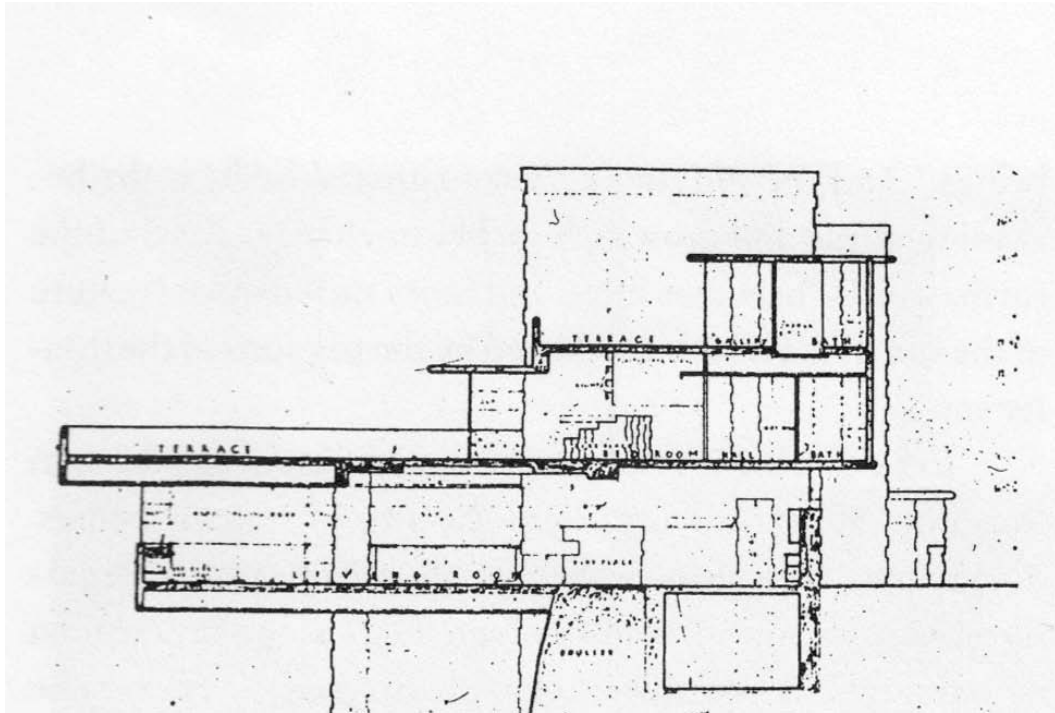


Fig. 28
Frank Lloyd Wright, Frederick C. Robie House, Chicago, 1909

Semper's theory was strengthened by the Japanese example, which demonstrated a new way of realizing the goal of "securing a psychological sense of shelter in domestic architecture," as stated by Chicago architect Irving K. Pond, future president of The American Institute of Architects. Prairie homes are known for their strong and comforting sense of shelter. Wright recognized the importance of tapping into our primal needs and satisfactions through this type of architecture. He added a sense of shelter to each of Semper's elements of symbolic architecture. The platform was seen through a projecting base that made the house, along with its exterior walls, appear as if it rose from the ground. The "integral fireplace" was architecturally impressive, boasting an opening encased within a broad expanse of masonry, leading to a great chimney on the exterior.⁶ Wright described his intentions:

The big fireplace in the house below [a 'broad generous' roof] became now a place for real fire. A real fireplace at that time was extraordinary. There were mantels instead. A mantel was a marble frame for a few coals in a grate. Or it was a piece of wooden furniture with tiles stuck in it around a grate, the whole set slammed up against the plastered, papered wall. Insult to comfort. So the integral fireplace became an important part of the building itself in the houses I was allowed to build out there on the prairie. It comforted me to see the fire burning deep in the solid masonry of the house itself. A feeling that came to stay.⁷

- Frank Lloyd Wright

Wright conceives the house as an extension of the earth; the earth possessing a natural architecture that grew from the ground; "The long, low lines of colorful, windswept terrain, the ineffable dotted line, the richly textured plain; great striated, stratified masses lying noble and quiet or rising with majesty above the vegetation of the desert floor: nature-masonry is piled up into ranges of mountains that seem to utter a form-

6 Etlin, 30

7 Wright, Frank Lloyd. *An Autobiography*. (New York: Horizon Press, 1977.) 138-9



Fig. 29
Fallingwater Living Room, Photo by National Park Service

language of their own.⁸ Wright referred to this as “earth-architecture.” He states “in responding to the lessons of the earth, the architect was to create forms that, through varying degrees of imitation and abstractions, seemed to belong to the earth.”⁹

The single intention that is present throughout all of Wright’s work is an “imitation of nature,” focused around a thoughtful imaginative process believing architecture springs from and belongs to the earth. It is not an imitation of nature according to any “classical meaning” of “architecture as an art of representation.”¹⁰ In Wright’s architecture, the “dialectical pairing of poetic elements became the basis for ordering the design.”¹¹ The prairie house takes advantage of the dual intentions of the chimney stack: rooted in the earth while rising towards the sky. Enclosing walls seemingly grow out of the earth, extending to the roof that soars through the sky while anchored to the chimney. “In both instances, the main poetic elements are earth and air, mediated by fire.”¹²

During one of his regular visits to Japan, Wright discovered a local version of a Roman hypocaust, “a hollow space under the floor of an ancient Roman building, into which hot air was sent for heating a room or bath.”¹³ Wright, who had despised radiators, became an enthusiast of building heating systems into the floor slabs. In fact, his most important contribution to architecture became what he called “gravity heat.” He first built this into the Jacobs House in 1937 by installing hot water pipes into the foundations. The pipes allowed an alternate to the radiator, which he had gone to much trouble to conceal in earlier houses. “The resulting warmth - homogenous, regular, and totally invisible - made for an unmistakable

8 Brownell, Baker, and Frank Lloyd Wright. *Architecture and Modern Life*. (New York: Harper, 1937.) 20

9 Etlin, 34

10 Bolon, Carol R., et al. *The Nature of Frank Lloyd Wright*. (Chicago: University of Chicago Press, 1988.) 21

11 Etlin, 39

12 Etlin, 39

13 Maliszewski-Pickart, Margaret. *Architecture and Ornament : An Illustrated Dictionary*. (Jefferson, N.C. ; London: McFarland, 1998.)



Fig. 30

“Great modern architecture combines thermal muteness with symbolic eloquence. Though Wright installs the heating system under the floor slab, the house is not deprived of a fireplace.”

Top - Underground heating system in teh first Jacobs House. Frank Lloyd Wright, 1937.

Bottom - Fireplace of the first Jacobs House. Frank Lloyd Wright, 1937

modern thermal space.”¹⁴ Wright wanted to somehow make this “atmospheric regulation” visible; he imagined that “at the centre of the house rose a voluminous fireplace.” Despite being functionally redundant, it was symbolically essential: “once again, the original fire inhabiting the heart of architecture.”¹⁵

In 1900, Wright began to develop what became known as his Prairie House style. His designs used the mass of the chimney as a vertical element that tied the house to the ground, allowing layers of horizontal forms to radiate from the hearth. He built fireplaces not only in living and dining rooms but in bedrooms, solidifying the fireplace’s presence in the home. Simple and straightforward planes of brick, usually Roman (which were longer and shallower bricks), surrounded a large opening which was wider than it was tall. Horizontal counterpoints were provided in each individual design through “artistic use of stone lintels, plinth blocks, wood decks, and wood banding.”¹⁶

Wright’s Prairie House typology expressed the homogeneity and thermal tranquility that characterized modern space. Simultaneously, his sensibility “reached down to deep layers of the human spirit, [while he] introduced ancient symbols that eloquently expressed architecture’s intimate relationship with fire.”¹⁷ The result was a richer and more equivocal architecture well suited to the uncertainties and troubles of the time.

This connection between construction and fire is deeper than conventional associations between the hearth and the heart of the house; fire is not only present in the centre of the house, but burns “deep in the masonry of the house itself.” The fireplace in Fallingwater rises so precisely

14 Fernández-Galiano, 251

15 Jacobs, Herbert Austin, and Katherine Jacobs. *Building with Frank Lloyd Wright: An Illustrated Memoir*. (San Francisco: Chronicle Books, 1978.) 18

16 Lind, Carla. *Frank Lloyd Wright’s Fireplaces*. (San Francisco: Pomegranate Artbooks, 1995.) 25

17 Fernández-Galiano, 254



Fig. 31
Frank Lloyd Wright, Edgar J. Kaufmann House ('Fallingwater') Bear Run, Pa. 1935
Partial view of living room with fireplace on the exposed bedrock.

over the large rock upon which the building sits. It is argued to be “more than a house over a cascade, a fire over a rock.”¹⁸

At a fireside, our primordial memory is aroused; we feel secure and bonded to others.¹⁹

Wright designed more than a thousand fireplaces with no two being alike. He consistently maintained that in each of his houses, the fireplace was to have a dominant presence and be the hearth of the home. Even after the introduction of stoves and furnaces to provide sufficient heat, Wright maintained fire’s symbolic position as “a sign of comfort and protection.”²⁰ Critic John Ruskin connected domestic architecture with domestic virtues, writing that every house should have a fireplace with a prominent chimney, “to help evoke the value of trust, protection, and traditional bonds.” He argued that the fireplace symbolized the importance of family and stability.²¹

In his own three homes, Wright designed forty-four fireplaces, nearly one per room. Mastering proportion and use of materials, his fireplaces were usually built of brick or stone, often incorporating wood, tile or glass.²² Wright molded his fireplaces as if they were sculptures, conceiving of designing the entire wall rather than just cutting a hole and applying a frame to it. The majority was of brick, a material he chose to use unplastered indoors, not restricting it to the exterior. The interior brick also suited his rectilinear designs, particularly emphasizing horizontality with specified deep and contrasting mortar joints. Wright also loved stone, stacking it naturally in ways it would form in stratified layers and setting it ruggedly on shallow mortar beds. He used limestone,

18 Fernández-Galiano, 29

19 Lind, 9

20 Lind, 9

21 Lind, 10

22 Lind, 12



Fig. 32
Hotel Geneva Lobby Fireplace, Photo by Richard Nickel, 1967

sandstone, field stone, granite, and even loose rubble stone; anything that would create a natural extension of the surrounding landscape.

Contrary to convention, sculptural compositions often trumped functional requirements. Wright preferred wide openings and low chimneys, rarely specifying dampers, flue liners, or ash dumps. He ignored the recommended ratio of 1:8, regulating the flue-to-fireplace opening. He advised clients complaining about drafts to simply build a larger fire.²³

Our current sense of shelter is a reflection of profound and personal feelings from our primal senses. This combination is what Bachelard coined “material imagination” with “the poetics of space.” Bachelard asserted that great poets based their works in reveries about the four classic elements - air, water, earth and fire. Feelings of “cozy shelter” are conveyed through certain spatial configurations, such as miniatures, nests, corners and the movement from the cellar to the attic. “To illustrate the poetics of space, Bachelard recounted Charles Baudelaire’s observation that a fire indoors feels so much cozier when it is snowing outside.”²⁴

Wright had a commitment to what he called “the sense of shelter.” With his prairie houses, he created this comforting sense through a selective combination of “the poetics of space” with “material imagination.” He used the prairie house to create a haven for the family and their togetherness. He preserved the massive fireplace as his central element; marking a shift from the formality of the Victorian era to an informality of the industrial age. Removing superfluous elements and stripping it down to its essential elements, he reassessed the design of the American house. However, he refused to remove the fireplace, likening it to removing the “soul of the building”. Despite the fact that the fireplace was neither essential for cooking nor heating and would reduce construction budgets, the fireplace maintains its position at the centre of the home.²⁵

23 Lind, 16

24 Etlin, 32

25 Lind, 12

A STORY OF DOMESTICITY



Fig. 33
Pueblos in Taos, New Mexico. Photo by R.M. Schindler.

Rudolph Michael Schindler moved from Vienna to the United States in 1914 and began working for the firm of Ottenheimer, Stern, and Reichert. Schindler had began studying architecture at the Imperial Technical Institute in 1906, joining Otto Wagner's studio in 1910. Befriending and studying under such greats as Adolph Loos, Richard Neutra, he also worked for firm of Mayr and Mayer. "As a result of this progressive education and training, at an early date he rejected academic architecture in favour of an interest in industrial materials and methods, a simplification of form, and an awareness of architecture as the manipulation of space."¹ On a vacation to California, Schindler stopped in New Mexico and Arizona along the way. He was becoming disenchanted by the stark commercial architecture of Chicago and upon seeing the multi-storied homes of New Mexico, he had developed a deep enthusiasm for pueblos.²

The work of Frank Lloyd Wright appealed to him so greatly, that he was cited as a main reason for his emmigration; Schindler had a great ambition to work with Wright one day. In a letter to Richard Neutra, Schindler writes of Wright:

He is the first architect - the first who truly accomplishes what I was looking for and defended in the Wagner School... His art is spatial art in the true sense of the word and has completely shed the characteristics of sculpture which all architecture of the past possessed. The room is not a box - the walls have disappeared and free nature flows through this houses as in a forest. He is a complete and perfect master of any material - and modern machine techniques are at the base of his form-making.³

-December 1920

1 Smith, Kathryn, and Grant Mudford. *Schindler House*. (New York: Harry N. Abrams, 2001.) 7

2 Smith, 10

3 Smith, 11

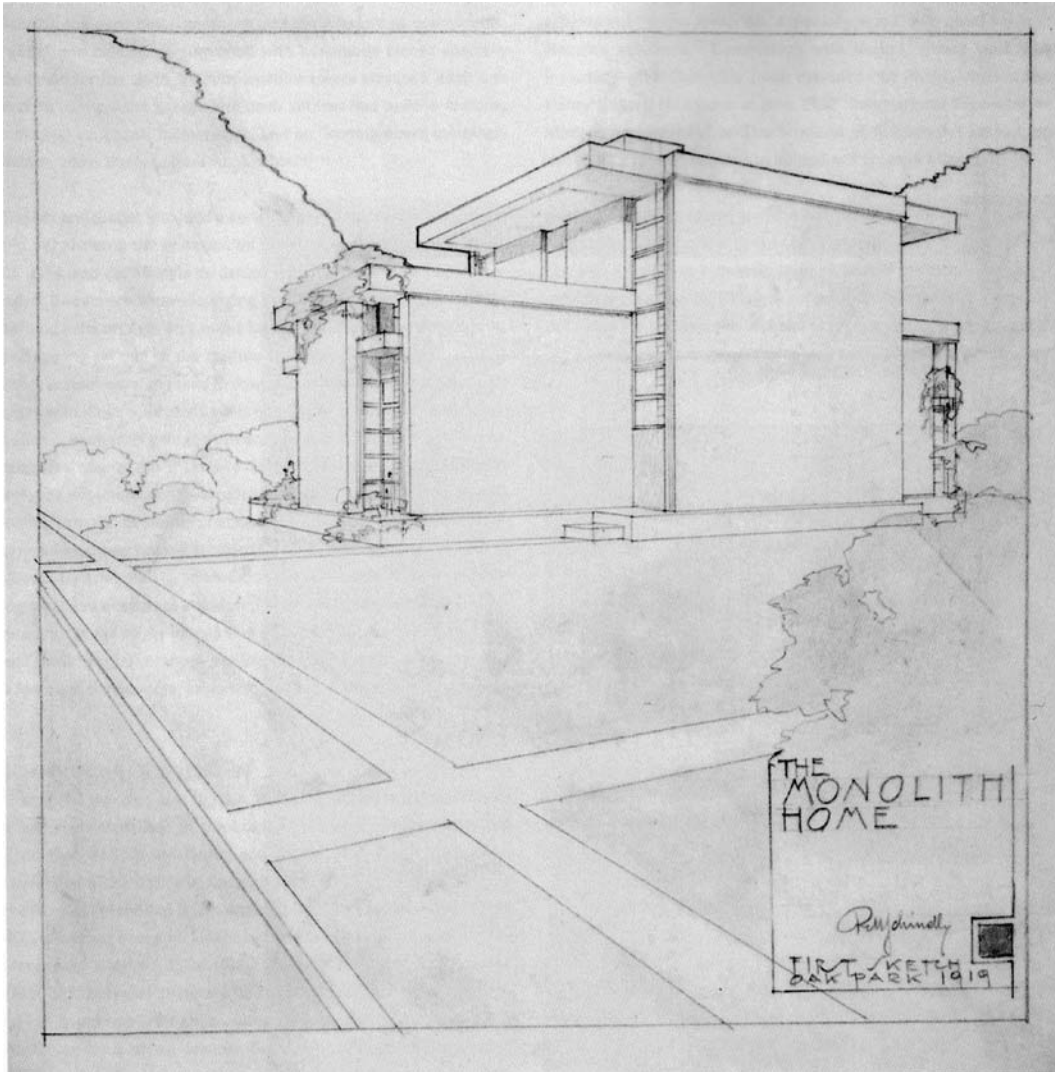


Fig. 34
Monolith Home (Project for Frank Lloyd Wright)
Location unknown, 1919

Within the next few years, he was invited by Wright to join him in Taliesin, Wisconsin to begin producing working drawings for his newest commission, the Imperial Hotel in Tokyo. Schindler took on the “unusual” role, running the Chicago office while Wright was away in Japan.⁴ In 1919, he designed the Monolith house for a former Prairie House client, Thomas P. Hardy. Using only cast concrete throughout the interior and exterior, the design experimented schematically and “was an important step further in [the] degree of abstraction and [a] compromising use of unfinished concrete.”⁵

The consequences were threefold: structurally, the materials declared their industrial origins and implied methods of mass production; socially, the low-cost, minimal dwelling was directed at the worker; spatially, outside and inside interpenetrated fluidly through the vertical slots of glass, although the interior was compartmentalized to accommodate the program.⁶

Though never built, the early experiment laid out his intentions regarding “materials, construction systems, and a social vision.”⁷

By 1920, newlywed Schindler had settled in Los Angeles with his wife, Pauline Gibling. Despite a shared disdain for traditional institutions, they married agreeing to maintain their independence while living as a couple. They had fallen in love with the Californian climate and “beautiful landscape of orchards, canyons, and hills.”⁸

Marian Chace, an old college friend of Pauline’s moved to Los Angeles in 1921 with her husband, the couples befriended. Schindler began working with Chace, an engineer, on projects for Irving Gill, a local architect who “tried to drop all meaningless style forms and reduce the

4 Smith, 11

5 Smith, 14

6 Smith, 14

7 Smith, 19

8 Smith, 16



Fig. 35
Kings Road House, View of Pauline Schindler's studio.
Photo by Grant Mudford.

building to a simple mass form.”⁹ Schindler had decided to begin his own practice and building his own studio-residence upon returning from an camping trip to Yosemite National Park. Inspired by camping shelters, he wanted to “impart to his own house the same freedom and celebration of life he had experienced in nature...”¹⁰ Within two weeks, Schindler had finalized his design working with Chace as his builder. Everything about the house, from its program to its construction, was unconventional. In a letter to his in-laws, Mr. and Mrs. Edmund J. Gibling (Nov. 26, 1921), Schindler wrote about his concept: “The basic idea was to give each person his own room - instead of the usual distribution - and to do most of the cooking right on the table - making it more a social ‘campfire’ affair, than the disagreeable burden to one member of the family.”¹¹

The concept of separate studios represented his interpretation of the family as “a group of independent individuals with common goals.” Furthermore, he opted for a common kitchen, eliminating conventional kitchens for each couple. Cooking and cleanup could take place informally in the studios with utilities being placed into the wall beside the fireplaces.

The program included an individual studio rooms for each of the adults, each with a hearth. Each pair framed an outdoor room with its own fireplace for communal living and socializing, and had a sleeping porch on the roof. The large studios had concrete walls on 3 sides, the fourth open to the outdoors (enclosed in glass), each anchored by a large fireplace. Unlike Wright’s prominent hearths, fire’s were built directly on the ground in this home, emphasizing the elimination of boundaries of the space. ¹²

Wright’s Taliesin home had served as the main precedent for this house; the residence, the architecture studio, and the farm wing were three dis-

9 Smith, 18

10 Smith, 21

11 Smith, 20

12 Sheine, Judith. *R.M. Schindler*. (London: Phaidon, 2001.) 111

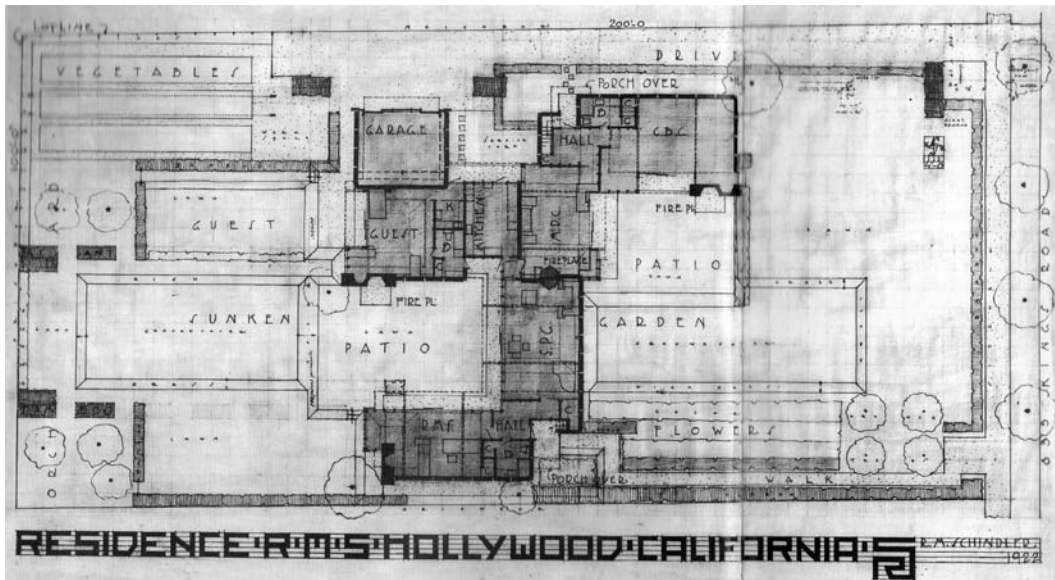


Fig. 36
Top : Ground Floor Plan.

Fig. 37
Bottom : Kings Road House, Photo by Grant Mudford.

tinct parts that made up the whole. Schindler had a less conventional philosophy. He dispensed the traditional room arrangement and designed each studio as a “universal space: ... it existed as a void and derived its meaning from the furniture arrangement, which could be changed at will to serve a variety of functions as needs arose over time.”¹³

More rigid in his material selection and more radical in his social program, the house provided the basics of a camper’s shelter.

The design focused on simple elemental forms created with unfinished materials. A four-foot cube formed the three-dimensional grid which contained a pinwheel of three L-shaped arms that pivoted around a double fireplace. A fourth pinwheel was created by an enclosed exterior garden that acted as an extension of the house. Each portion had its own fireplace that was built into the walls. The fireplace at the pivot was double the size of the others and clad in copper.

The most important features of the plan were the visual axes through the building, most of which were diagonal and constantly shifting as you moved through the space. Concrete, glass both clear and sandblasted, created transparent, translucent and opaque surfaces that established “contrasts and interplays with one another as they are animated by natural light.”¹⁴ The figure-ground relationship was replaced with an equally weighted balance between building and landscape. Hierarchically, the four large concrete block chimneys were the most important in terms of mass.¹⁵

The Schindler-Chace House set the pattern for future work in Los Angeles. It became known as “the first modern house to be built; ...the house just did not look like anything else of its time.”¹⁶ It provided the basics of a camper’s shelter; “...while the house possesses the elemental qualities of a camp in the desert, complete with open-air living room and sleep-

13 Smith, 30

14 Smith, 33

15 Smith, 34

16 Smith, 39



Fig. 38
Kings Road House, Photo by Grant Mudford.

ing porches, made of raw materials, concrete, redwood and canvas, at the same time it is clear that something much more sophisticated is going on here.”¹⁷

The house is simultaneously romantic in feeling and disciplined in its planning; primitive in its statement as shelter and modern as a piece of architecture; functional as a place for the owner to live and timeless as a work of art. It is both influenced by its site and is an influence on its land. It is constructed of hard materials, but also of light. In short, it is an organic piece of Space Architecture.¹⁸

17 Schiene, 40

18 Schiene, 112

A STORY OF FUNCTION



Fig. 39
Lokiko Hall, of Cottage Grove, Ore., uses Aprovecho wood cooking stoves to cook the meal at the center. Last week the center welcomed representatives of the World Food Programme and the United Nations High Commission for Refugees. Visitors from Switzerland, Italy, Darfur, Sri Lanka and elsewhere came to study ways to alleviate indoor air pollution.
Photo by Thomas Boyd/The Oregonian

In the last week of 2009, the New Yorker journal published an 11-page article focusing on a week-long excursion modestly known as Stove Camp, now in its tenth year. Held annually in small town of Cottage Grove, Oregon, the Aprovecho Research Centre hosts a few dozen “engineers, anthropologists, inventors, foreign-aid workers, and rogue academics”, setting up tents along the Willamette River. Days are spent “designing and testing wood-burning stoves, their nights cooking under the stars and debating thermodynamics.” The gathering is an attempt to solve a single troublesome issue: “How do you build cheap, durable, clean-burning stoves for three billion people?”¹

The Aprovecho Research Centre is “dedicated to researching, developing and disseminating clean cookstove technologies for meeting the basic needs of refugees and impoverished people and communities in the developing world.”² Employing seven staff and a handful of rotating volunteers, the centre tests and develops projects internationally. In the late 1970s, when the centre was founded, building stoves was far less complex than it is today. Based on the teachings of leaders such as Ghandi and economist E.F. Schumacher, “the philosophy held poor countries best served by low-cost, low-tech, local development. Better to teach villagers to make a stove than to give them stoves that they can’t afford to repair or replace.”³ The small group of artists and academics aimed to teach Americans to live more sustainably, rather than bringing American know-how to the Third World. One of the founding members, architect and ecologist

1 Bilger, Burkhard. “Heath Surgery : The quest for a stove that can save the world.” (*The New Yorker* 21 & 28 December 2009) 86.

2 <http://www.aprovecho.org/lab/home>

3 Bilger, 88



Fig. 40
Kithsiri Mullegamgoda (center) of the U.N. World Food Programme leans in to get a better look
at a wood-burning stove.
Photo by Amanda L. Smith/For The Register-Guard

gist Ianto Evans, was convinced that stoves were the solution to deforestation, a major issue at the time.

Their 40-acre lot houses the complex of offices including a corral, workshops, and a labyrinth of labs. When they first bought the lot in 1981, the centre built passive solar cabins and tree houses, and planted a variety of fruits and vegetables; *Approvecho* is spanish for “*I make good use of.*”⁴

They began making stove prototypes based on 10 principles. These new “rocket stoves” were small and lightweight, efficient in not wasting heat on warming the stove itself. The rocket stoves had vertical combustion chambers that acted as chimneys, the gases of the burning wood heating the rocks more efficiently. To heat the pot as quickly as possible, the walls were well insulated to force the hot gases through narrow gaps around the pot.⁵

In 2000, the centre built their first emissions detectors to begin testing designs. Grants from the EPA and the Shell Foundation in 2004 allowed them to expand into testing stoves for other programs. Today, they have half a million dollars in funding and a staff of young engineers. The camp is self-sustaining, supporting itself in good part from the sales of microprocessor-controlled portable emissions detectors, designed and built in-house.⁶

For half of the world’s population, cooking is practiced in kitchens stocked with the latest appliances, fueled with gas, kerosene or electricity; the hearth is a luxury reserved for camp fires. For the other half, whose kitchen is simply a place to build an open fire, the hearth is necessity.⁷

A map of the world’s poor is easy to make...

Just follow the smoke.

-Jacob Moss, Founder of Partnership for Clean Indoor Air

4 Bilger, 89

5 Bilger, 88

6 Bilger, 91

7 Bilger, 86



*Fig. 41
This stove at Aprovecho's lab in Cottage Grove, Ore., has a basic "rocket stove" design built from a 55-gallon oil drum. Its insulated "combustion chamber" is precisely engineered to extract energy from wood.
Photo by Martin Kaste/NPR*

Clean air, as defined by the EPA, contains less than 15 micrograms of fine particles per cubic metre. A smoke alarm is set off with five times that amount. A slow death is inevitable with 300 times that amount, (roughly what the wood smoke from an open fire produces.) This type of smoke is a mixture of various chemical agents: benzene, butadiene, styrene, formaldehyde, dioxin, and methylene chloride. The effect of these corrosive fumes can consume a piece of untreated steel in less than a year; similar effects can be seen on the body. According to the World Health Organization, one and half million people are annually killed by indoor smoke. Additionally, pneumonia, bronchitis, emphysema, cataracts, cancers, heart disease, high blood pressure, and deformities are just a small glimpse of a long list of debilities it can also cause.

In recent years, this smoke from the Third World has moved from a local to a universal threat. The average cooking fire produces as much carbon dioxide as a car, and far more soot. Soot, (or black carbon) is about 700 times more warming than smoke. Cooking fires each release 1000-2000 grams of soot annually; a single gram of it is comparable to a 1500-watt space heater running for a week straight. With over 3 billion people relying on open fires to cook, cleaning these emissions may be the quickest and most economic way to lower global warming.

A well made stove uses a chimney to pipe out smoke and burns its fuel efficiently, subsequently cleaning the air. Most manufacturers recognize this as a non-profit venture, lacking any lucrative promises. Most aid agencies prefer alternate ways of assisting the poor, such as vaccines. Stove-makers are consistently underfunded.⁸

Building a stove is simple. Building a good stove is hard. Building a good, cheap stove can drive an engineer crazy.⁹

- Burkhard Bilger

8 Bilger, 86

9 Bilger, 88



Fig. 42

Using a primitive stove in Koluha, India. An alliance that includes the United States wants to replace 100 million stoves by 2020.

Photo by Adam Ferguson for The New York Times

In June 2009, the U.S. senate passed the Waxman-Markey climate bill. Its brief section on the EPA outlined a 5-year plan of promoting stoves to 20 million households through international co-financing, carbon-credit subsidies, and cooperation from major appliance manufacturers. A “good stove” is defined as reducing fuel usage by more than 50%, reducing black carbon by 60% and reducing childhood pneumonia by at least 30%. Apr-ovecho’s Dean Still adds in that no stove could triumph without also being affordable (retailing for under \$10), cooks should love using it and it ultimately needs to get funded. To date, no stove has ever met all six criteria at once. The bill catalyzed Stove Camp engineers into somewhat of a spotlight. “Kill a million and a half people and nobody gives a damn,” one member states, “but become part of this big climate thing and everyone comes knocking at your door.”¹⁰

Stove design is careful. Fire is fickle, unpredictable and non-linear; every millimeter of design is significant. Variables including the size of the opening, the shape and material of the chamber, or the thickness of the grate, each amplify each other. Most are the size and shape of a stock pot, with a cylindrical combustion chamber and a cooking grate on top. Lit twigs put in the chamber heat the pot atop the grate. One stove uses at least one pound of wood to boil a gallon of water.¹¹

A small village in Guatemala, San Lorenzo, is home to the world’s longest-running stove study. In houses made of mud and straw in the remote western highlands, almost nine thousand feet above sea level, the cooks are among the most observed and studied in the world. Electronic sensors and transmitters (motion detectors or carbon-monoxide monitors) can be found everywhere, from the walls of local kitchens to the inside of children’s clothing. Each chimney atop a stove is equipped with a small

10 Bilger, 86

11 Bilger, 88



Fig. 43
Children with clean cookstove.

microchip that can tell you when and for how long the stove was used in the previous month.

Smoke testing culminates in numbers: “minutes to boil, grams of fuel, milligrams of black carbon,” leaving the practical effects much more difficult to measure. Founder Jacob Moss explains that “we have no idea how long you have to go before you get the majority of the health benefits. Is it peak exposures you want to get rid of, or is pollution a steady-state thing? Cutting them in half, or even by two-thirds, may not be enough.” The Guatemalan study is aimed at these uncertainties.

Eight years ago, Kirk Smith, professor of global environmental health at Berkeley, teamed with a group of students and researchers, to begin tracking over five hundred families with infants or expecting mothers. The families were randomly divided in half; one group was given a plancha stove (with a chimney), the other half continued cooking with an open fire. After two years, the latter half received stoves as well. Each family received weekly medical checkups, during which sensor data was collected. Today, the study generates so much information that it employs two full-time staff to enter findings into a database.

I sat and watched the women cook. Diminutive and shy, in their bright embroidered blouses and tapestry skirts, they quickly answered questions as their children clutched their legs or peeked out from behind doorframes. The houses were low-ceilinged and bare, with earthen floors, corrugated roofs, and a tree stump or two for furniture. Some had sheaves of Indian corn drying from the rafters, or raised eaves that allowed a little light to leak in.¹²

In the homes with stoves, the air was becoming cleaner. In homes that still use open fires, air hangs so “thick and noxious that the walls were blackened, the joists and beams shaggy with creosote. It was like sitting in

12 Bilger, 93



Fig. 44
Children with clean cookstoves.
Photo by Ben West, 2010

a smoker's lung."¹³ According to health experts, "stoves must give off only 10% of the emissions of an open fire for a cookstove to not present risk of upper respiratory infection and pneumonia to the women and children who inhale these fumes."¹⁴

In 2011, the main goal of the Aprovecho Research Center will be to "develop and test stove improvements that decrease emissions, or indoor air pollution, by 90%." This reduction will also help reduce global warming. Additionally, last year, ARC launched two stove distribution programs: StoveTec, "a for-profit company that sells the ARC-designed rocket stove," and the new Institutional Stove, designed to hold a 60L pot to feed hundreds of people. Under the umbrella of ARC, StoveTec distributed over 24,000 stoves in 2010. Reports state that "...users really like the stoves. The households that received the stoves are still using the stoves over and above other technologies." The plan for 2011 is to make StoveTec its own entity, while still benefiting from having direct access to ARC's research and development lab. This will create a unique "social entrepreneurial model of a for-profit business with a "social good" mandate that supports [the] non-profit with royalties and other resources." Meanwhile, the Institutional Stove program is continuing to distribute and produce projects internationally with the World Food Program and 10 multilateral government aid agencies.¹⁵

13 Bilger, 93

14 <http://aprovecho.org/lab/work/rad>

15 <http://aprovecho.org/lab/work/rad>

A STORY OF FASCINATION



Fig. 45
Photo taken on night of fire.

A few months ago, a friend awoke to a thunderous sound coming from outside. Peering out, he was shocked to see his neighbours home on fire. Their 3-storey brick homes were separated by only a slender alley; his feeling of terror was instantaneous. In the following moments, he evacuated his home, grabbing only a handful of small personal possessions and his camera. Standing outside looking at the flame, he was silenced by his fear. All he could do was document the monstrous blaze, praying the winds would not push it south to his home.

Fire can grow, rapidly reproducing and dividing itself, all the while losing ritual and mythical content. When fire displaces itself from the centre of the home, becoming untamed and violent, all myth and symbol is lost.

Feral fire is fearsome; this fire is also fascinating. We recognize fire as a sensational and tremendous element, and we are captivated by it. Fire is a threat, yet we invite it into the centre of our homes. The implications of this cannot be ignored.

When fire leaves its place at the centre of the home, in an effort to consume it, fire becomes dubious and violent. The feeling of seeing your home ablaze is one of immense and overpowering fear. Regardless, a fire that large cannot help but evoke feelings of awe and reverence.

La maison de mon rêve is a project that reveals this clash; seeing a childhood image of your home ignited in flames. The iconic image of the five sided house evokes nostalgic memories of drawing your home as a child. Scaled to the size of an adult, this 'home' sparks the feeling of being young. The intention of the scale is to embrace the certain freedom with which children are unabashedly fascinated. Fire induces reverie, Bachelard wrote. This fire can also induce fear and fascination.



Fig. 46
Still from 'The Sacrifice' by Andrei Tarkovsky (1986)
Fig. 47 [On next page]
Image by author.

Since we must disappear, since the instinct for death will impose itself one day on the most exuberant life, let us disappear and die completely. Let us destroy the fire of our life by a super-fire, by a super-human super-fire without flame or ashes, which will bring extinction to the very heart of the being. When the fire devours itself, when the power turns against itself, it seems as if the whole being is made complete at the instant of its final ruin and that the intensity of the destruction is the supreme proof, the clearest proof, of its existence. This contradiction, at the very root of the intuition of being, favours endless transformations of value.¹

- Gaston Bachelard in *The Psychoanalysis of Fire*

1 Bachelard, 79







Fig. 48
Louis I. Kahn

At the age of three, the boy had an accident that would mark him for the rest of this life. According to family members, he became fascinated by the glowing embers of the coal fire that heated his house. One day, he reached into the grate and scooped some of the coals into his apron, which burst into flame. Parts of his hands and much of his face were scorched before his mother arrived. His intense blue eyes were spared, but the burns were so bad that his parents were not sure the boy would survive. He did, but his face remained permanently scarred. Family accounts record that [his father] thought his son would have been better off dead than disfigured, but his mother insisted that he would become a great man someday.¹

1 Wisemna, 14

EPILOGUE

Our story of the hearth is a satire; a narrative of our efforts to domesticate the magical and ethereal. Sometimes met with success, often met with failure, we have overlooked what it means to invite this demon into the home. Our relationship to fire in our home keeps not only a functional dimension, but also a symbolic one. Standing as the original root of architecture, we are fascinated by the mystical power of fire. The attraction to an object often leads to a desire to own it; in the case of fire, we desire to control and restrain it. This desire is underlaid with trepidation and acknowledgement of the devastating ability of fire.

The paradox of centering our homes on fire are fatal and flawed. Our relationship to fire is ineffable; simultaneously about origin and destruction, fascination and fear. The constellation of ideas presented in these ten stories speak to our confusion of this unique relationship. Deeper than want vs. need, fire in our homes comes down to creation vs. destruction; life vs. death. The intention of this chronicle is not to impose logic or rationality to this topic, rather to examine and begin a conversation of our origins and values, our reverences and fears. As long as we sit around open fires, comforted by their warmth and light, telling our stories, we also wait for their spark, the consumption of our lives and homes.

At times some truly diverse images that one had considered to be quite opposed, incongruous, and non-cohesive, will come together and fuse into one charming image. The strangest mosaic of Surrealism will suddenly reveal a continuity of meaning; a shimmering will reveal a profound light; a glance that sparkles with irony has suddenly a flow of tenderness - the drop of a tear in the fire of confession. Such is, then, the decisive action of the i m a g i n a t i o n : of a monster it makes a new-born babe!¹

- Gaston Bachelard in *The Psychoanalysis of Fire*

1 Bachelard, 110

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