

architectural positions and propositions
wood and light-timber construction

positions

Wood is arguably one of the most historically profound building materials known and is part of an equally profound architecture. Evidence of the use of wood is found wherever the material occurs naturally and could be reasonably transported. This essay establishes the significance of wood in support for wood-frame architecture and contemplates new articulations of the wood frame structure.

As a building material, wood is the most available and versatile than any other single material allowing peoples from around the world and across time to express and reveal their cultures through their architecture. Palladio suggests that experts be consulted on this versatility to assure species and application are correctly matched and cites Vitruvius as a resource which illustrates the antiquity of this skill [1]. Yet generally speaking, wood is structural, responding well in both compressive and tensile conditions. It is durable, drying hard enough to bend and dull steel. It is functional enough to enable man to conquer sea and air and tool able enough to sculpt. It is available to and workable by most people, enabling a level of workmanship that is often good enough to provide for basic needs, while also requiring a lifetime to master. Even the memory of wood endures in constructed form. Palladio further suggests that the design sensibilities of the column derive their form from the observation of trees in nature [1]. The memory of wood is also relevant as ancient builders shaped stone ornamentation on temple entablatures taking queues from wood predecessors [2].

Architecturally, wood exists in a world of complimentary contradiction. A living organism, the collective wood as forest is one of the symbols of the natural world man ironically attempts to master while recognizing he is indefinitely indebted to it as guide and material provider. Wood is a product of the same natural world that would challenge our existence, and is offered as a gift strong enough to rescue us from the very conditions from which it comes.

Thus, an architecture of wood is one of ancient discourse that continues today. Light frame wood construction or light timber construction is overwhelmingly utilized for the house, villa, casa, etc... and today is the modern manifestation of the first shelter described by many scholars including Semper [3], Alberti [4] and Vitruvius [5].

Architecture as house, is the genesis of constructed form. Heidegger's suggestion that dwelling and building are inexorably tied to one another in meaning, suggests that wood is a central material catalyst necessary for man to live [6]. Once there is shelter, a house is eminent. And once there is a home, a village, a town, and a city follows. With societal development and a surplus of basic needs, design and construction serves the architectural need of a culture: communal buildings, government facilities, public places, religious and cultural monuments. While I suggest that our densely populated cities come from the accumulation of architecture that commences with the home made of wood, Vitruvius suggests that fire is the original force which organizes men [5]. While the first experience of fire by mankind as a whole probably predates the first home, the first experience of close decedents' would have been architecture that tamed the ancestral wild fire. It is this fused experience of those that follow, and the simultaneous and inseparable condition of architectural space and fire that challenges any notion of what came first in architecture: the fire or the walls that enclosed it [4].

Therefore wood is warmth. As a constructed enclosure to shelter us from the elements; as a combustible material wood embodies years of solar energy fixed into its tissue. Under modern conditions, wood as enclosure coupled with wood as fuel completes the enclosure around the hearth and satisfies our most basic needs. Yet man has not always been able to use wood in such an inseparable manner and the historical order in which the human condition first utilizes wood is one of intriguing inquiry [7]. Again, wood is wrought with interesting contradictions such as in its ability to enclose, yet its weakness to protect the enclosure from the cosmic fire that created it.

Prefabrication and modular construction trends are of related significance. Ever since wood as timber became dimensional lumber, we have been moving steadily away from craft and towards product and standardized

component assembly. This proposition is not without ethical tension for I cannot deny attachment to vernacular architecture while simultaneously believing in the modern conditions that shape relevant architecture for today.

The shift occurred as transportation and energy evolved. The challenges of landscape became less influential and the proximity of materials to building site became less significant. New harvesting and processing technologies adapted a traditional natural resource material for a less-skilled labor force and marked the dawn of a new age in which buildings contain remnants of materials that rarely resemble, are rarely local and are rarely experienced. These advancements, coupled with material technologies cause dramatic change in architectural designs and constructions and signaled the transformation of timber into lumber and the irrevocable passage of wood into a standardized, reproducible product fundamental to the hollow wall [8].¹

Because buildings no longer rely on local materials but of manufactured and transported materials, a rift occurs and weakens the dialog that materials once contributed to local context and connection to place. The same change recognized as a result of improvements in transportation and energy is now occurring in electronics. Electronic technology, computer aided design, computer controlled milling machines and the well-written assembly manual is poised to all but eliminate the dialogue between design and craft. I am not sure of what is lost (or gained), but Winston Churchill's famous saying comes to mind: Similar to how "we make our buildings, and then our buildings make us", we also create the tools that form our world. A world in which humans create machines that create environments for people treads ironically close to the fantastic fictions of human experience. Some argue that embracing this new reality today is so important to the modern expression of architecture that it has the potential to not only awaken professionals from a dream-like state of denial, but also help improve our environment [9]. Frampton also explores the notion of critical regionalism and its applicability under modern conditions and suggests locally relevant architecture is more about a conscious commitment to forming a regional identity rather than the spontaneous formation of a vernacular [10]. This position also resonates from the masters Le Corbusier: as he explains in his writing and with his architecture on the purity of form being a direct product of industrial technology that so gracefully allows man to conquer land, sea and air [11].

While certain resistance to *architecture in a box* is understandable, these conditions have been with us for some time, just to a different degree. For example, a local historian surprised me when he said my 80-year old farm house probably received a manufactured trim package from a catalog. To reconcile the differences between the highly manufactured world of modern times and the memory of vernacular architecture central to architectural education, one might rely on an emerging sensibility in each design condition rather than determining a career choice based on conflicting (albeit justified) ethical positions.

Indeed, the profound connection between the wildness of wood and its humanly influenced modification into dimensional lumber to create a living place is fundamental to certain traditions and celebrations. These celebrations are rights of passage, if you will, for humans that tame wild material for habitable spaces and places. For example, portrait photographs of owners on the structures they commission, or "wetting bush" celebrations establish a spiritual connection to wood, natural order and architecture [12]. Of course, the modern condition is one that insulates us from the very things that sustain our lives, so these important ceremonies are less practiced. However, considering the dynamics of our modern condition, it seems these ceremonial oversights are warranted as the situations that provoked such ceremonies are no longer relevant.

propositions

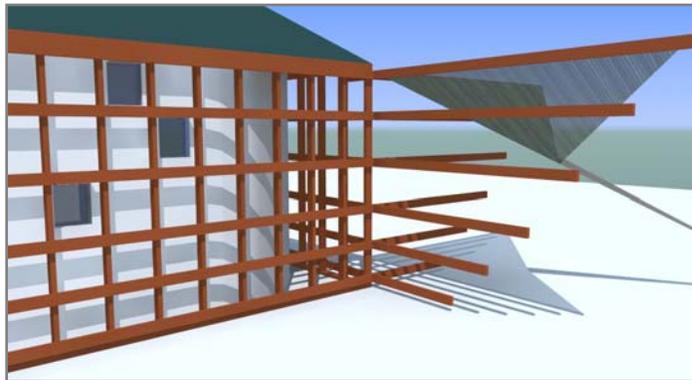
inside out - I have yet to conclude a dramatically different method of organizing wood within a built structure such as Rudolf Schindler describes [13]. However, I have been interested in studying the effect of turning traditionally constructed wall and roof planes inside out for an enduring presentation. Initially this condition might be read as a way to express structure. Inarguably, this is one reading. Another reading and our purpose here, is to convey presence. It is opacity with the potential to reveal via literal transparency and induce oscillating readings from phenomenological transparency as so carefully described by Rowe [14]. Like brick course work, one can see through traditional exterior façades into the structure and perhaps beyond into the

¹ Material in this paragraph was originally presented in a paper by the author entitled "if these walls could talk" for K. Edge.

appearance interior surfaces. Or perhaps the interior condition is of a difference consequence and concentrates more on the idea of threshold, providing visitors a visual entry into the building prior to a physical one. Depending on how direct the architect intends to be, external and approaching views of walls and roofs that turn inside out could very well express the nature of the architecture within. However, the "outside is the result of the inside" might also be obscured by this inversion [15]. Whether it be curtain walls in large projects or a version of balloon-frame wood construction with the intent to express, or repress the interior via exterior views, turning architectural planes inside out is worthy of study.

This idea however is not without historical reference: European timber frames that express themselves in visible layers with stucco infill suggest an internal wall condition from the outside. Challenges certainly exist with turning walls inside out. The very materials that act as a skin to the skeleton of a building are designed to protect the structure from weather and form a layered membrane to help control a human environment within the broader and less predictable context of the unenclosed world. These materials are the modern equivalent to the woven solutions of the *wall fitter* [3].

curved corners – While recognizing the paradox of a curved corner, I challenge the paradigm of 90-degree corners in wood construction and internal spaces as I attribute this more to a condition of manufacturing rather than an expression of an idea. Thus, the 90-degree corner in wood frame construction seems to be more indicative of habit and an absence of thought. Granted, there is something human in the right angle and to disregard it in favor of something visually free of constraints is not the point. How can a curved space be articulated by an orthogonal wall turned inside out? A rendering from a digital sketch study suggests one possible approach.



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