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On Material: If these walls could talk

Preface:

The topic for this paper was handed to me by Vitruvius – through his second and seventh book on architecture, where he indicated the proximity and location of key architectural materials to building sites. (Vitruvius 42-65). It is quite interesting and advantageous that the author involved in the “beginning” architectural literature prompted this inquiry, for a question has interested me for quite some time – can materials convey the regional identity of structures? Vitruvius was an interesting starting point because as my research evolved, history entered the discussion and changed the context of question. Indeed, the question is relevant for every period of architectural history but the answer to the question, if appropriate, are different in each case. For the ancients, as well as early American builders, the relationship between material and place had tremendous relevance. For modernists, as time and material technology have no doubt transformed architecture the relationship between place and material seems less relevant. In recognizing such historical influences, starting at the beginning of architecture was advantageous for this inquiry.

While Vitruvius introduced the opportunity to explore this question, supporting texts and periodicals have revealed that the question is flawed and incomplete by immense proportions. The question, rather than being answered has led to more questions and multiple contexts. Thus, while the original intent of the paper was to explore this question and perhaps arrive at an acceptable answer, the purpose of the paper evolved to explore a few contexts in which this question can be proposed, so that in a congruent architectural conversation, a productive dialog can take place.

History is not the only variable context that can backdrop this inquiry. Socio-economic dynamics, architectural intent and functional purpose, cultural evolution and building build up (a type of architectural melting pot) and audience are all angles upon which to consider the dialog between materials and place. Each of these areas is lightly explored in this inquiry but as the reader will conclude, each context does not exist in a vacuum. Indeed, variable contexts are always in play.

And finally, the motivation for asking the question is relevant to disclose, which will conclude this inquiry.

Introduction:

What do architectural materials tell us about location? Obviously, materials serve a utilitarian purpose in construction and building quality yet this is not the purpose of this inquiry. Rather, how have materials communicated location through history and how is this conversation taking place today? A more profound question to ask is how might materials impact a building's inhabitant's sense of belonging to location?

The premise of this material-communication starts with recognizing that this dialogue only takes place if our senses are a part of the conversation. In other words, materials that cannot be experienced (see/tread/touch) are not a part of the conversation.

This topic cannot be discussed without clarifying the meaning of location or place. Unlike a car, which we all intuitively know is assembled in a factory, that has no physical roots to a specific spot, a building is grounded. It's connection to grade undeniable. And when the buildings materials are from a location, there does seem to be a connection to the place. For the same reasons a log cabin home appears "in place" in and around wood lots, the same log cabin home would appear out of place in the arid southwest where structural block and adobe façades are prevalent. In these examples, locally available materials contribute to a regional building style unique to place.

This is why some contemporary work appears to have landed. Indeed, many of the materials typically do, harvested and manufactured from far away. If there is a connection between material origin and a building's sense of place, what of this architecture? The Modernist cry was for glass and whiteness – an emancipation from bourgeois cosmetics, only to be followed by the realization that much of that same abstracted white was simply a surface coating over any old conglomeration of bricks, blocks, rubble and gunge (Cooke 34). And returning to our profound question, if contemporary works are "of another place" are inhabitants conditioned similarly?

This inquiry is not meant to discourage design. Putting aside the contribution of material to a structures identity of place, good design can also communicate place.

History:

By necessity, it would appear that local building materials are woven into architecture giving the structure both a real and representative link to the place upon which it is sited. As pointed out in a series from *The Architects Journal* on materials in their historic settings, transporting material [stone] usually makes the transported material cost prohibitive, so in many

cases, putting up with the local material was the only option (Foyle 2). Thus, local materials were used and influenced the architecture of the same place. Yet Roman architecture, as viewed today in ruin, is misleading at face value. For the rock, stone, and brick used structurally were purposefully covered by stucco or marble façade thus hiding structural materials of place (Vitruvius 205). However, as Vitruvius also points out, the stuff of the façade was also heavily influenced by location with nearly every color of dye originating from one best and unique location (Vitruvius 214-221). The common use of these colors for wall paintings “arose from a desire on the part of Roman patrons to surround themselves with the aura of great Greek art.” (Ling 5)

Therefore, it is highly questionable if the knowledge of dye location was even relevant for the audience. Wall art, was most likely about the art, about social status and story. Additionally, powdered dye is more transportable than structural building material meaning that any connection to location was lost.

In stark contrast, in 1765 America “everything a man owned was made more valuable by the fact he had made it himself or knew exactly from where it had come from.” (Sloane 72) Wood supported life and was present for everyone from cradle to coffin. Young men, who would one-day build their own homes, would take special care in the design and material selection for the front door. (Sloan 29) Both the type of wood material and the design connected the owner, building and location. It can certainly be debated that this connection is more relevant for the original architect/builder than for future generations. However, in these pre-Civil War times, the architecture of nature would hold special meaning for communities:

We do therefore...dedicate and solemnly devote this tree to be a Tree of Liberty. May all our councils and deliberations under its branches be guided by wisdom and directed to the support and maintenance of that liberty which our renowned forefathers sought out and found under trees in the wilderness.

From a Dedication to a Tree of Liberty
Providence, Rhode Island.

When the colonies sought symbols of their independence for their flags and coinage, it was a tree. So it is easy to see how differently wood is revered today. An obvious connection to place through a great American building material has been widely lost.

Fast forward. Transportation and energy have evolved. Thus, the challenges of landscape become less influential. The proximity of site to site materials is no longer necessary. These advancements, coupled with material technologies have caused dramatic change. Continuing with

wood as an example, new harvesting and processing technologies adapted an 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. The advancement of wood with a set of codified dimensions for wood studs signaled the transformation of timber into lumber and the irrevocable passage of wood into a standardized, reproducible product fundamental to the hollow wall (Kennedy, Sheila; Grunenberg 6). Wood as a component is really no different than more recent “modular moves” where alternative materials are promoted for the same purpose – to make the most of structural soundness, construction speed, and utilization of non-skilled labor for the purpose of cost efficiency. Indeed, building material unique to place has been replaced by a dizzying array of disposable and or interchangeable materials (Kennedy, Sheila; Grunenberg 16). Buildings no longer rely on local materials but of manufactured and transported materials breaking the conversation that materials provided in connection to place.

The following diagrams illustrate how the relationships with respect to materials and building have changed with time and technology. Figure 1 suggests a period in history where raw materials were used more directly in building construction. In this case, the relationships between materials in buildings and the origin of materials are easily recognized.

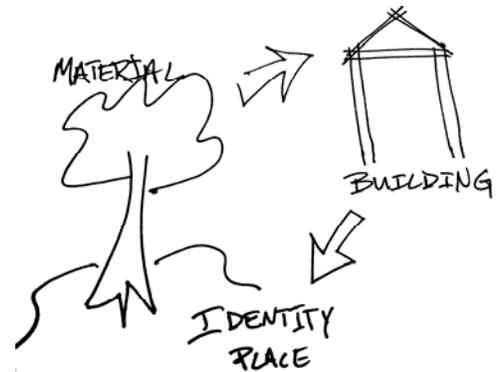


Figure 1

In Figure 2, a material transformation, or transportation takes place and disconnects the material, and therefore the structure from place.

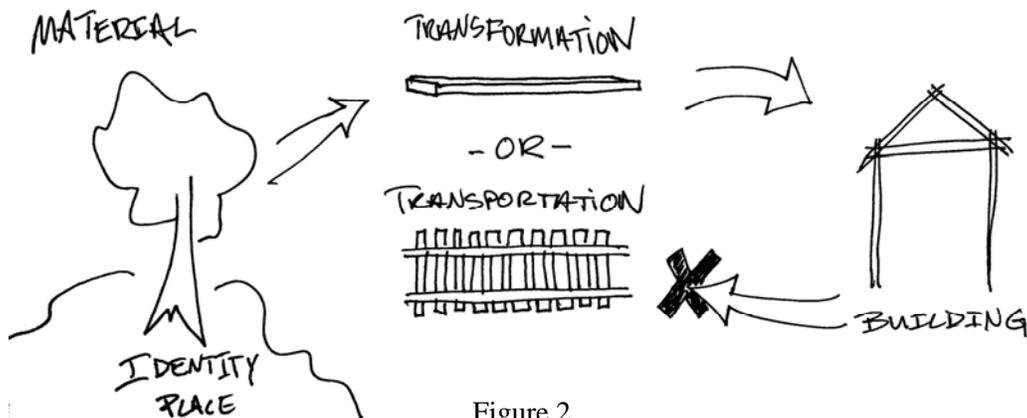


Figure 2

Despite the observation that material productization can initiate inconsistency with place; architects can have it both ways. A more current terminology of ‘skin’ is a new take on an age-old technique of covering structure with a plane of different material, such as stucco. The application of skins is poised to create a new dialogue between material and location. To a large audience of students and faculty at Virginia Tech, Steve Kieran of Kieran and Timberlake explained his dedication to manufactured material and construction processes. He highlighted a project – his own Loblolly House. While 70% of the Loblolly House was manufactured off site, the most striking exterior component are vertically applied cedar planks, in a calculated randomness that ties the building to the site by creating with the existing loblolly pine forest. Cedar, being a different material than the local pine is inconsequential. Cedar is not only an indigenous wood to the Virginia-Maryland eastern shore, but also a more appropriate wood for such an exterior application.

In the not-so-distant future, and perhaps following an age of cheap energy, the production and transportation cost of materials might be such that history may repeat itself, and traditional building practices and materials return to the stage. It is ironic to think that just as architecture has reached an exciting high point with regard building material technology, liberating the artisan with endless material choice; material availability and cost will present an obstruction that may leads to location and place becoming again more readable through architectural material.

Socio-Economic:

Just as conditions of transportation and appropriateness influence material selection, the socio-economic condition in play translates into material selection and identity of place in powerful and often disturbing ways. According to United Nations Human Settlements Programme or UN HABITAT, we live in a world where half the population – 3 billion people — live in urban areas, almost 1 billion of them in slums. Slum populations grow daily, especially in Africa, Asia, Latin America and the Caribbean (www.unhabitat.org)

The large metropolis from a central observation point appears similar to most any industrialized-nation city. However, look downwind or down river in developing nations and you will see a desperate housing condition. Attempts to link experiential connections between material and place and people are suggested in the conclusion of this paper: a valuable connection to place can be obtained for people. In the example of slums, connecting people to place is a cruel material connection. However cruel this connection, it is powerfully relevant and supports the argument that materials can speak about place. An ironic comparison exists in

instances of well-to-do home builders with strong environmental ethics. The trash and discarded that is the primary building material of necessity in slums is indeed repurposed for some environmental green homes. Alas, while material may speak to us about place, the dialog here seems to be as variable as a conversation between strangers. In this dualistic comparison, materials are constant. So, if materials speak is it because of architecture or in spite of it?

When designers can enter an impoverished arena, purposeful architecture can invest in a sense of place by using local labor and materials as reported by Anooradha Iyer Siddiqi, AIA in “Making Place in Banglador”. Local firm, “Shilpa Sindoor reinterprets local traditional construction methods and building types. It relies on resources available specifically in the region, tying its projects to the land by default. The firm blends local building traditions with a modern architectural vocabulary. This response realizes both a traditional reliance on locally available materials and an ideal modern aesthetic” (Siddiqi 57). This example is note worthy because material selection is motivated by interests in economy and regional identity.

Contrast this effort with neighboring buildings of budget. With no motivation to utilize local materials, building stature and personality takes on a whole new and regionally irrelevant connection to place. Or do they?

Cultural Evolution:

The function of a single building for its inhabitants is one thing. The function of a building in relationship to surrounding buildings, and the urban society is another – and perhaps more relevant to this conversation about material and place. For eventually, a series of built forms creates “place” in and of itself. And material becomes relevant in a different sense. No longer is it confined to a single structure, but becomes involved in a thread of conversation across many structures. In a description of collective Portuguese architecture: “Whether the forms are drawn from the pitched roofs of the granite north, the orthogonal, colonnaded farmhouses of the centre, or the rendered, blocky, cabins of the south, the same features predominate – a very few windows; flat walls with a horizontal emphasis; a close connection to the earth; very little timber; reductive detailing and flush junctions; a sense of tightness, rather than enclosure. And, above all, the only true colour, heavenly blue, emanating form the intensity of the Iberian sky (Brittain-Catlin 78).

Cities with history experience structural repurposing and offer a unique position on material and place connections. “The aim is not to reconstruct the old brick building into what it once was, but to use it in conjunction with modern construction methods and materials and

continue the subsequent use and reuse and transformation making the house a reflection of the architectural spirit of Paris itself” (Hayes 1).

And closer to home, the Virginia Tech campus for example, is better defined by a series of structures with its iconic hokie stone material than any one structure standing alone adorned similarly. The same dynamic can exist in small towns and large cities, but does not necessarily mean that a consistent material dynamic or identity occurs. Many examples of rapid growth and sprawl are blamed for attributing to a lack of regional identity.

How does this human manifestation of place evolve? Can leaders of men be in a position of such power that consistent and coordinated architectural moves can be made on a large scale and over decades of time. For some of our ancient civilizations, this seems plausible. This would seem to require an inconceivable combination of architecture, urban planning and a multi-generational lineage of like-minded control. Or maybe a direction, once set is almost natural to follow. Consider the slow evolution of a metropolis: organic growth based on single and incremental structural developments within a village that forms a town, which creates a city that ultimately becomes a metropolis. This organic growth of built forms is based on a series of conscious individual moves on the landscape that appear coordinated. These small circumstantial actions that ultimately create collective and significant development are interesting to consider as a result of “architectural” Swarm Theory.

Swarm Theory primarily explains the collective behavior of animal herds, fish schools and insect colonies; it has been recently related to collective human behavior. A recent article in National Geographic points to examples of the internet, a human swarm enabler, where Google uses group smarts to find what you are looking for and Wikipedia, an online encyclopedia is contributed and edited by anyone. “Such comparisons underline an important truth about collective intelligence: Crowds tend to be wise only if individual members act responsibly and make their own decisions. A group won’t be smart if its members imitate one another, slavishly follow fads, or wait for someone to tell them what to do. When a group is being intelligent, whether it’s made up of ants or attorneys, it relies on its members to do their own part.” (Miller)

While the article accurately implies that swarm behavior is amazing due to rapid and accurate responses of seemingly instantaneous communication, the evolution of a city and its architecture might be simply a slower version of swarm behavior present in human society. All of the same types of goals are being obtained, just at a different pace and scale of an ant colony.

The idea of collective architecture and material communication is relevant throughout history. Poverty Point is a colossal earthwork overlooking Lower Mississippi River swampland. It incorporates between two-third and three-quarter million steres [cubic meter] of dirt, making it

one of the largest earthworks ever built in America north of Mexico. Yet, it was constructed between 3,700 and 3,300 years ago by Archaic fisher-hunter-gatherers, whom scholars long considered incapable of carrying out such labor-intensive feats (Gibson 509). The scholars go on to contemplate if the builders constituted a community, a historically lasting and socially connected network of persons bound by place, people and history, or a periodically gathered amalgam, whose unrelated constituents arrived from distant lands.

A architectural historian taking a page from Swarm Theory might conclude that for the purpose of explaining Poverty Point as a built form, a societal explanation and cultural differentiation is pointless. Regardless if these peoples were a close-knit community or a random bunch, the built form was based on collective activity – individuals taking queues transferred from one person to the next...and in the process materially bound the form to place.

Conclusion:

As conveyed in the preface of this paper, the question of materials linking architecture to place is too general and requires specific contexts upon which to offer answers. At the very least, the question could continue to ask “connection for whom?” For the trained architect? Or for the lay person? Ideally if a material connection to place was intentional, it should be recognizable by anyone who would experience it.

This clarification leads to intention. Why ask such a question? I am prompted to ask the question as it relates to users. If a building can communicate to the users the nature of the world outside of the building, the way in which they conduct themselves in life might be influenced because they will come to understand the world outside a space, from within a space. Would this lead to a more conscious existence? Is there a cocooning existence occurring that disconnects us from our greater world – is this disconnection one in which perpetuates itself and will surprise us one day to be extremely relevant? And if a building can contribute to this dialog and connect people with their environment so intimately that behaviors are changed, why would not the materials also contribute to this conversation?

Although the relationship between inside and outside seems to have more to do with the spaces themselves, as architectural events, than the material of which the space is constructed (Venturi 86), others would add, “It is about the feel of a place, the setting for discovery and delight and it might even (still) be about the touch of the thing.” (Cook 34)

Even so, is it an appropriate question? The majority of building materials is not sculpture or art in and of themselves, but is part of a larger architectural move. Even old and historic examples where materials and place seem to have a stronger connection, man’s manipulation of

the material suggests that “the nature of a material used in construction is the outcome of human artifice” (Leatherbarrow 161).

Thus, it could be stated that material can have various degrees of impact or none at all, and that impact can be in control of the architect. Thus, the question might be flawed because it is simply posed as a question. Rather than asking a question, a statement might be more appropriate. The use of material in architecture to connect people to place is a purposeful act – sometimes taken and sometimes not.

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