# **Lost and Found in Translation**

Paradoxically Between the Near and Far, the Virtual and Actual, the Real and Representational + Between Drawings and Buildings

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## "...whereby the possible cannot become real without something of the virtual becoming actual...That is why... the reality cannot be anticipated in the possibility." <sup>1</sup> *—Bernard Cache*

### FULL SCALE MOCKUPS / PARADOXICALLY NEAR + FAR

The differences between the proximate and the remote, suggest a change in distance between something near and far. But if the "remote" is both a tangible and imaginary space, then it defines not only a distant landscape but also a more distant perspective towards what is immediately within our reach. This paradoxical state becomes productive by illuminating the tensions between the concerns of the near and far which can be difficult to imagine while only operating within proximate spheres. Few of our architectural conventions allow for the type of productive tensions that are illuminated while considering the proximate from remote perspectives. Perhaps these differences are not something to be ignored, rather to be highlighted and mined productively for their generative potentials within architecture. It seems the differences between abstract notions of the proximate and the remote could be reframed within architecture as the differences between the real and the representational. One form of architectural convention seems to give form to the tensions between architecture's imaginary representations and physical constructions of something real. That conventions is something which exists somewhat paradoxically between drawing and building, I am referring here to full scale mockups. Mockups give form to the precise translations that occur between the two distinct conventions of drawing and building, but also more generically between the conceptual categories of the real vs representational, the optical vs physical, and the virtual vs actual. Full scale mockups are not as shallow as a drawing and not as determined as the actual building but somewhere in between, both representation and reality. This in between zone, gives form to the tensions and translations of one in relation to the other.

#### LOST IN TRANSLATIONS

Two conceptual frameworks offer a complimentary articulation of the consequences and opportunities of translation. The first is Robin Evans 1986 essay, Translations from Drawing to Building. In Evans' canonical essay he characterizes the differences between drawing and building, by referencing several types of translations from outside of architecture. He first defines translation in terms of translatory motion, which is the act of moving something without altering it.<sup>2</sup>

Evans goes on to point out that this type of translation is unique to motion because in the translation of words between languages, it is a myth to believe that nothing is altered as a result of translation. Building upon the example of translatory motion he states, "Yet the substratum across which the sense of words is translated from language to language does not appear to have the requisite evenness and continuity; things can get bent, broken or lost on the way."<sup>3</sup> It is here where Evan's first acknowledges that inherent within translation is a sometimes subtle yet important transformation. In language he states that assuming meaning may glide between languages without modulation is mistaken, but not simply a delusion. He states that within language we must pretend there is an ideal form of meaning to begin with, in order to become conscious of the distortions that occur as a result of translation.

"Only by assuming its pure and unconditional existence in the first place can any precise knowledge of the pattern of deviations from this imaginary condition be gained."<sup>4</sup>

Evans then goes on to state that in architecture, unlike language, a unique translation occurs between drawing and building. He argues that while the distortions which are exerted on primitive meaning across languages are understood but critically ignored, a similar "enabling fiction" has not been acknowledged in architecture. So what is it then that is unique to drawings within architecture? Evans explains by recalling his time teaching in an art department in which he states he assumed that artists and architects shared the visual medium of drawing as something in common. However he later realized that the architects and artists engaged drawings in difference ways. He finally observes that while artists might spend a little time sketching or producing maquettes, it was only for a brief time before moving onto the actual thing itself which absorbed most of their attention and effort. In contrast Evans notices a peculiar disadvantage under which architects work, "…never working directly



Figure 1: A prototype vault constructed from broken brick fragments as a proof of concept.

with the object of their thought, always working at it through some intervening medium, almost always the drawing." <sup>5</sup>

While maquettes and drawings are much closer to painting and sculpture than buildings, Evans also notes that within the arts the most intense creative effort is in the construction of the final artefact not the preliminary drawings which only serve to give enough direction for final work to begin. This is unique from architecture in which the most intense effort of design is invested in the drawings, not building, and whereas in the arts the drawings give initial definition to an idea which is then developed in the artifact itself, in architecture the drawings are intended to represent a complete determination of the building in advance, further divorcing the drawing from building.

"Recognition of the drawing's power as a medium turns out, unexpectedly, to be recognition of the drawing's distinctness from and unlikeness to the thing that is represented, rather than its likeness to it, which is neither as paradoxical nor as dissociative as it may seem." <sup>6</sup>

From Evans we can understand more precisely the distinctness between drawings and buildings, and with this in mind consider full scale mockups as something in between these two distinct states.

If, as Evans states, architectural drawing gains its power from being unlike the thing it represents, we can foresee the translations which would be necessary to convert from one form of representation to the other. What then might an architecture be which existed between drawing and building more mutually invested in the generative capacities of both?

#### FOUND IN TRANSLATION

In acknowledging the distinctness of the conventions and capacities of drawing and building, Robin Evans establishes the need to translate from one form of representation to the other. To me, this thoughtful categorization serves to set the stage for mockups. If drawings and buildings are so distinct, that is if one is proximate and one is remote, then how can both exist simultaneously in a hybrid form? While Evans essay revolves around the relationship of these two conventions, another framework for translation, centers on the differences between the fabric of the digital and the material, or the differences between the frequency and the membrane.

In the recent essay titled "Projectiles", author Bernard Cache not only presents the precise obstacles of translation encountered given the new forms of digital representation, but also builds upon this conundrum as a new foundation. Unlike Evans, here Cache is not referring to conventional forms of drawings so much as digital definitions including the complexities of digital form-making in relation to the very medium of production. However much like Evans, Cache is highlighting in his essay the vital shift that occurs when translating from the virtual to the real. This dichotomy echoes Evans argument that the virtual and the real are fundamentally distinct representations of the same subject. He uses terms to describe this shift between the virtual and the real, or the proximate and remote by describing the material fabrics of these two poles. For the real forms, Cache describes them as the "Nature of the Membrane" and for the virtual forms he refers to the "Frequencies that animate." Distinguishing between the tools of computation which are virtual, and the physical forms of matter which are real, Cache highlights the productive change that occurs in the constructive makeup when translating from the virtual to the real.



Figure 2: The initial mockup vault is incorporated into the final construction, not demolished and rebuilt.

"...the virtual cannot become real unless it undergoes a change in the nature of the membrane in which it is incarnated or the frequencies that animate it."  $^7$ 

It is here where Cache acknowledges, not only that the virtual and the real are categorically unique, but that they are never able to be completely translated without altering. This is a unique observation in that typically new forms of digital tools and technologies are thought to more accurately capture the forms of the real. However Cache points out that not only does a fundamental change occur, but that this chance that occurs establishes a new approach to build upon. Instead of a suspension of critical disbelief as Evans discusses in translating languages, Cache argues for an embrace of the changes which occur. Instead of concerns for avoiding something lost in translation, in a sense here Cache is embracing something found in translation. It is the distortions encountered in the translation from the virtual to the real, that are present and which must not be ignored but instrumentalized. While forms are stable, Cache points out that there is no seamless translation between states, which are easily predictable.

"On the other hand, what we will never be able to predict is the relation between a frequency and a membrane. Selecting a still image requires us to assign a value to the parameters of our periodic functions in order to manufacture singularities in a series of objects in a specified material." <sup>8</sup>

It is the very distortions within the translations from the "frequency" to the "membrane" that reframes an approach to philosophy. It is this new approach in philosophical terms, which contributes to a

broader yet clearer definition of mockups in architecture. Cache describes this as a shift from pure philosophy to "the pursuit of philosophy by other means."

"The 'pursuit of philosophy' refers to philosophy engaged as a mode of production – and not as a contemplative activity, and even less as an instrument of communication." <sup>9</sup>

This shift in priority from the ends to the means, is coupled with a shift in the mode of production itself. Cache recognizes and acknowledges the distortions revealed by pursuing familiar aims through unfamiliar means, as in the remote and the proximate. By shifting the modes of production, the necessary step of translation is introduced, and it is this vital step of translation that Cache notes has the potential to change the outcome in novel ways.

"...our aims can easily be distorted by the means we use to achieve them."  $^{^{10}}$ 

If our intentions, which are immediate, can be distorted by the distant means we use to achieve them, then the same is true of our architectural representations.

#### ALCHEMICAL TRANSFORMATIONS

Two practices which I have recently become familiar while conducting research into this topic are noteworthy for how they each approach these issues of translation. In addition these two practices have some shared material and tectonic qualities in their work, however counterintuitive that may initially seem. The first is the Paraguayan Architecture practice, Gabinete De Architectura, led by Solano Benitez, and the second is the United States based practice Matter Design, led by Brandon Clifford and Wes Mcgee.

Much of the way that we understand the role of the brick in construction is by applying it in ways that are pre-defined. But what occurs in the architecture of Solano Benitez, is that bricks are not utilized in their typical orientations, rather they are radically reconsidered, mortared end to end in triangular modules, cast as broken fragments into thin shell concrete structures, and stacked at rotated angles into toothed slabs of brick and mortar which seem to defy gravity and logic.

This experimental approach is not based on conventional norms, but grows out of empirical evidence and observation, resulting from the architect abandoning conventions, and working directly with mockups. By beginning anew often with a single brick, Gabinete de Aquitectura imagine new configurations that defy a brick's typical bonds, coursing and orientations. This approach requires not only a tacit understanding of engineering and construction, but also subtle reconsiderations of the typical frameworks for engaging materials and structures. There exists a conceptual reconsideration of materials in the work of Solano Benitez. While all of the buildings are constructed of bricks, each is treated in unique way.

In an early project, Benitez conceives of a thin shell vault in the interior of a children's rehabilitation center. Without drawing the structure in detail, Benitez first instructed the masons to stack



Figure 3: Matter Design's La Voute de LeFevre project, consisting of stacked load bearing voussoirs made from plywood.

broken brick fragments onto a thin rolling formwork in the shape of a parabolic arch. Beginning at the bottom, brick fragments were stacked and mortared between in a single layer of thickness. To provide additional support two diagonal lines were traced by embedding bricks which were rotated vertically onto their edges and stacked end to end constructing stiffening ribs.

An initial section of this vault was constructed as proof of concept. This initial construction seemed impossibly thin, and in addition could be considered what we might think of as a full scale mockup. (Figure 1)

The engineer on the project, inspected the prototype and recommended that the diagonals reach all the way down to the ground in subsequent sections, and also be thicker by adding additional layers of brick. What is unique in this project is that the initial mockup was not discarded which is what is typical of mockups in the western world, but left in place and improved upon with each iteration in the construction of the vault. (Figure 2) Instead of a constructing a mockup, which is demolished and then reconstructed as a final building, here the mockup is the building, and the architecture is the mockup, they are not separate. As surreal as this simple vault is, this project is typical of the work of Gabinete De Architectura. By reimagining brick into new unconventional configurations, through full scale prototypes, the preconceived notions of construction are reconsidered, outside of drawing, stretching proximate thoughts into the remote territory of the material itself.

#### PRECISE TRANSFORMATIONS

The second practice that provides an intriguing example with much in common with Bernard Cache's framework is Matter Design. Much like Bernard Cache's essay in which conventional drawings are not discussed so much as a new focus on the fabric of the media itself, Matter Design, seem to not produce drawings at all. Invested in load bearing, stacked masonry construction, the work of Matter Design is intriguing because it doesn't seem to fit the normative categories of small scale representation. Even in small scale study models, glue is not used, and the small scale pieces are still stacked demonstrating their vitality as structural prototypes. Matter Design seem to engage forms by exploring their structural malleability. In a very



Figure 4: Matter Design's Project titled "The Warm Room," based on ancient Incan Wedgestone construction principles.

early project they assume the mechanics of thin shell construction but unlike the premise of structural efficiency in which thinner is better in the construction of thin shells, the architects here thicken the stacked structural elements. By thickening these constructions the architects argue in favor of forms which are both structurally derived but also able to address the other requirements of architecture outside of structural performance including formal and programmatic concerns, something not quite possible in purely thin configurations.

Early on the architects constructed two projects which dealt with exactly the possibility of thickening load bearing structural elements as full scale prototypes. What is noteworthy in each is that the forms are conceived of within the computer, without conventional drawings. In this case the forms actually go through less translation as a result of being conceived of in the computer, as opposed to being drawn on paper drawing, which is then interpreted and constructed by a stone mason, as Robin Evans mentions in his essay. For Matter Design, they are explicit about the fact that they really don't produce drawings at all, conceiving of the project in the environment of the computer, and then using digital means to fabricate and assemble the project in a truly digital approach. While we would expect to avoid many of the distortions that occur in translating drawings into buildings, through this new approach, the architects encounter many of the similar issues forecast in Bernard Cache essay.

In 2012, Matter Design completed the construction of a structural vault, for which no representational drawings were prepared. The design was conceived of utilizing advanced computational tools, constructing a virtual model of the project in its three-dimensional entirety, while also anticipating its structural performance. Based on this highly sophisticated digital model, the architects already knew that this structure could stand, that it could indeed be built, and what it would look like, yet they built it anyway. Remarkably they were still surprised by the results. In the case of the project titled La Voute de LeFevre, a freeform, compression only structural vault was designed to be constructed of series of stacked compression only members called voussoirs. (Figure 3)

The form was modelled in the computer, and subdivided into individual units to be machined out of blocks of laminated plywood. The accuracy of the computer was intended to be reproduced in physical materials through a zero tolerance approach. By machining each voussoir with such a high degree of precision through digital fabrication, each edge would lock into position with its adjacent member, just as in the virtual environment of the computer. Ultimately what occurs in the construction of this zero tolerance approach is the discovery that while the virtual model, maybe zero tolerance, the physical environment in which the model is constructed is not, and ultimately those two environments create conflicts.

Much like in Bernard Cache's essay in which he embraces the phase changes between the virtual and the real, Clifford and McGee take on the conflicts of these seemingly non-negotiable realities. In later projects they design exactly for these conflicts attempting to bring zero-tolerance construction into contact with the far less precise environment, mining ancient Incan Wedgestone constructions and advanced computation in constructed projects which serve as proofs of concept like full scale mockups. (Figure 4)

The paradox, is that while digital models imply a seamless transition from the virtual to the actual, while accuracy of form may be better described in the model, there exists a necessary and disruptive phase change in the translation from the virtual to the physical, which is not formal. It is this process of translation, from one form of representation to another, which is unpredictable and must be guided. Matter Design, offer a vital example to this dilemma, advancing a design practice immersed in computation and materiality which insists on physical constructions, learning from the tensions that exist in the translations between virtual + actual, digital + material, and ultimately between representation and reality. It is this focused tension in their work which offers a narrower but deeper engagement with the motivations of mockups, through physical translations.

#### LOST AND FOUND IN TRANSLATION

The particular ideas of translation of Evans and Cache, and the work of the architects discussed in this chapter, each demonstrate a unique approach bringing the remote into conflict with the proximate. These approaches provide examples for utilizing the virtual to find new distant actualities. Perhaps these examples suggest new ways of finding unexplored territory, without having to travel so far, through deeper engagements with the proximate to find new remote realities, always within our grasp but rarely viewed so closely from afar.

#### ENDNOTES

- 1. Bernard Cache, Projectiles (Londaon: AA Publications, 2011), 27.
- Robin Evans, "Translations From Drawing to Building," in *Translations from* Drawing to Building and Other Essays (London: Janet Evans and Architectural Association Publications, 2011), 154.
- 3. Ibid, 154.
- 4. Ibid,154.
- 5. Ibid,156.
- 6. Ibid, 154.
- 7. Bernard Cache, Projectiles (Londaon: AA Publications, 2011), 29.
- 8. Ibid, 28.
- 9. Ibid, 20.
- 10. Ibid, 20.