When we think of buildings, we see a kit of parts, solid things that form voids and define spaces. The list of parts can be further broken down into elements that extend much deeper to include line, proportion, color, light, balance hierarchy, form, material, and even culture. Beyond this there is an entire vocabulary devoted to architectural pontification. From this visual vocabulary, it is the word and concept of ‘mass’ that not only defines these spaces, but also is inextricably linked to our buildings. In other terms, mass is ‘that’ which defines ‘that which is not,’ and it is much more.

In the United States, we have defined our own vocabulary for design. It does involve mass, but, in most cases, it is just a pragmatic application. Rarely in the past is this element realized as a formative design tool but rather a passive necessity. This is painfully true for contemporary residential architecture. Whether it is a homebuilder that measures value only by volume or a designer that wants to emulate the latest modern collection of boxes, it is the attention to the function of solid that has, in many cases, fallen to the wayside.

With the luxury of modern building materials, we who live in more developed countries experience a world where building materials are not only accessible but, affordable. Modern construction products allow us to quickly stick-frame homes from dirt to move-in within a matter of weeks. But the ease and simplicity with which these products are assembled has also given way to indolent design. In most cases, what we come away with is simply a pragmatic system of boxes cobbled together and, at best, filled with false arches, vaults and beams and veneers that are simply attached to a hidden structure. These basic shapes could be made of anything as thin as paper, each having holes punched in them for windows and doors. Elements are interchangeable and often recycled, lending to the sense of superficiality. We use façade materials that are temporary, those that evoke a fad or style, which is often replaced or covered over after it is considered ‘dated’. Where mass is present, say, such as a fireplace or a solid beam, builders and architects alike have gone to great lengths to
hide this within the structure and cover over the truth and elegant strength of the materials involved.

Even with a persistent lack of effectual massing in residential design, it is the desire to understand what it can deliver, whether by beauty or brutalism, which drives the possibility for new understanding of what can be. Properly applied, stone, brick, wood, metal, and closed forms all have the ability to convey the quality of solid, mass or weight. It matters not if the body of weight is built up or truly hewn, the qualities can be powerful. Le Corbusier says it best: “Architecture can be found in the telephone and in the Parthenon. How easily could it be at home in our houses!,” for mass, “we should use those elements which are capable of affecting our senses and of rewarding the desire of our eyes”, and he goes on to say that the site of these elements should effect us immediately.\textsuperscript{1} The solid form, or perceived closed form can deliver a sense of entry, protection, focus, anchor, access, hierarchy, gravity, longevity, connection to earth, warmth, strength, character, security, serenity, balance, line, permanence, and even sculptural experience. These solid forms provide the scaffolding in which space, light and color all live to provide a vital tectonic role. To experience and appreciate these qualities on a basic level one has only to witness the design in person. To decipher, create and understand the components, however, we defer to the masters who effectively established its use in contemporary residential structures.

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**Three Masters**

For the multitudes of buildings and designers that forego homage to this singular element, there are but a few who have successfully wielded a full understanding of the power of the solid form. Here, we will look at a few masters who, in the opinion of this writer, reach beyond functionalism and allow us to experience a timeless sense of form.

**Louis I. Kahn:**

Kahn, known most broadly for his work in commercial architecture, wields a deft hand with mass. Considering that he designed relatively few residential structures, he was clearly able to carry over his aesthetic to residential design. The Esherick House stands out as a masterful example.

The plan reveals that each living space in this single bedroom home is affected by mass (image 3). This contrast between heavy concrete and light open space accentuates the volumes to a point at which each opening is simply a void, never mind that it has
windows or doors, these are inconsequential. What Kahn is telling us is that the home is now acting as sculpture, albeit, still functional. The conveyance of a carved out space is evident in the weight, thickness and connection of the elements. While mass at the entry displays strength, security and privacy (image 2), the volume that it defines opens up to a private green- scape. By way of wall thickness, the rear openings do no less to underscore mass, exhibiting the thickness of the concrete, seemingly carved out to expose the interior.

Mass, for Kahn, meant permanence, strength and simple line. In the Esherick House, as in other masterpieces, Kahn produces a dichotomy of solid and void. If the house were to fall into ruin, the principle would remain, much like the structural skeleton of an animal, it presents a clear timeless image of what was intended as well as the elegant design. For his many masterpieces, it is perhaps, most unfortunate, that Kahn did not prefer to write about his thought or design process or leave us with more examples of residential architecture but, despite these shortcomings, his lifelong pursuit is monument to what can be achieved with focus and dedication to craft.

Le Corbusier:
Le Corbusier, possibly one of the most prophetic modern proponents of inclusive modern residential architecture, states most clearly.

“Architecture is one of the most urgent needs of man, for the house has always been the indispensible and first tool he has forged.”²

He goes on to say that architecture is ‘stifled by custom’. In writing, Le Corbusier interprets the common narrative of our current architectural situation (Image 1) as ‘custom’ as if it is a sickness that we cannot see ourselves in. Custom is not style or fad, for it has a much more tenuous hold that cannot be seen. Essentially, for Le Corbusier, the only way to truly see and understand our current state of architecture is to experience it from afar, not in terms of physical distance but in terms of generational time. In our time, we see residential architecture in a very common way. It has been this way for decades and likely to continue for many more but it is also sure to be
measured by architects and designers of the future. Will they be shaking their heads in disappointment?

In his writings, Le Corbusier discusses the elements of architecture at length and includes mass as a central defining element. Boiling it down, Le Corbusier sees architecture as a play of masses brought together in light, simple enough, but not altogether a problem-solving statement. Unlike Kahn, Le Corbusier was consumed with providing honest and beautiful architecture to the common man. This was especially evident in his lengthy narratives. His position as a prominent architect concerned with rebuilding Europe after the Great War further underscored his motivation to use the modern machine of construction to provide exceedingly good design to those who were unlikely to afford it in the past.

It is in the hands of this master that we see a sensual play of mass and light. When we consider one of his later works, the 1956 Shodan House (Image 4), it is clear that the strict geometries are juxtaposition to the surroundings. His use of concrete in this serene environment is visually stimulating and even somewhat brutal. It does, however, serve a purpose. Even though this is a rather large example of a home, it is designed to be open to the very warm and humid Indian environment for which it was designed. Wafer thin concrete yields grand spaces while the formed cantilever of the roof casts a surreal weight to the top of the structure holding it firmly to the earth.

Mass, in this case conveys, strength, permanence, and character. It punctuates the serenity of the surroundings while using the actual structure to define vast openings.

**The Wright Way:**
Throughout his life, Wright was never short on words nor did he shy from speaking belief in architectural concepts. Considering that architects over 100 years later are emulating his massing and style, it is likely that some of the most cherished buildings clearly put forth the thoughts of this icon.

In his residential works, we observe mass as a central element that controls line and seemingly defies physics while giving the forms life, hierarchy, and visual integration into the landscape. Wright had a particular sensitivity to the surrounding landscape that his use of mass tended to preserve rather than fight. Skipping his early prairie style homes we jump to what is perhaps, his masterpiece of balance, mass and space, the Kaufmann House.
The Kaufmann house, more popularly known as ‘Fallingwater’ (image 5) evokes a surreal connection to earth. It is one of the most striking uses of mass in contemporary residential architecture. For the many books, accolades and references one will find in any library, the proof is in any image; the mass speaks of earth and surrounding. It is as if the stone grew out from the mass of rock on which it is attached. Wright uses a daring cantilever of solid concrete in multiple directions away from the stacked stone core axis, from which 3 levels of bedrooms, terraces, roofs and openings all extend to reach out to the landscape. Mass plays a pivotal role in homage to the earthen surroundings while it’s use in the contrasting smooth concrete cantilevers is both balanced and elegant. Wright also takes great care with the product of space, using unobtrusively framed windows and open corners of glass. The central mass is the mast from which all other elements grow, as if they are growing from the earth. While truly modern and elegant, the mass of the smooth cantilevers, which lie over the small waterfall, seem to happen naturally and, in this, evoke a sense of timeless beauty.

It is no secret that Fallingwater was an intensive project, both in time and money. In fact, it was also structurally controversial. For the masses, however, a home of this caliber is not financially possible but we can take cues form this and other works to define a new aesthetic standard moving forward.

The Case for Change:

In consideration of the above architects, we see the genesis of our current modern architectural masterpieces that are created daily. It is the true test of time that sets the values of these masters apart from those still living and designing. That is not to say there is a vacuum of genius but rather to point out that time, the great leveler, speaks clearly where architectural style is concerned. With each architect, the influences that shape design are part of life experience. In many cases, such as Wright and Kahn, this influence harkens back to ancient times and pulls through critical elements.

Change has been a central force, even in the lives of profoundly popular architects. This is especially true for our group as each underwent change in their lives to reflect use of mass. For Kahn, it was not until his later 40’s that he discovered how the ancient world of mass and structure would profoundly influence his signature style for the remainder of his career. His epiphany occurred when he experienced other ancient architecture but was also the product of a lifetime of work up to that point. It produced a style that endures and continues to influence new students and practicing architects to this day. In contrast, Wright was clearly affected by Japanese Architecture and Ancient Central American Indian civilizations in his travels. These influences, especially Japanese art, not only come through in his evolving design but actual rendering techniques. He also took cues from the Incan ruins he visited. We can see this in the forms and massing of his
later California homes. Le Corbusier saw the purity in engineering and the limitations thereof which architecture must transcend to both demonstrate truth but also undeniable and unchanging beauty that endures not just for the elite, but also for the masses. After the war, Le Corbusier also underwent change as he saw the possibility of the machine of architecture born from the industrial revolution and as a product of the machine of war. He saw the possibility of architecture becoming more modern and accessible so that the common man could afford true genius. This focus brought him to create masterpieces in residential and multi-family community living that endure and hold true in today’s world.

In earlier writings, addressing the current urban blight, the landscape of boxes that shape the world of the working middle-class America, we see a country that has become, for the most part, architecturally homogenous. This is the ugly side of the ‘machine’ that Le Corbusier defines as both ‘elegant and dangerous’. The way a society lives and how it dwells is a reflection of virtues. This holds true for the United States. The propensity to achieve ever larger living space, focus on the automobile as the centerpiece of the façade, the need to have a room for every function and whim; this is, in many respects, the current state of the ‘American Dream’ in which we live.

Consider the paradigm below. Space can be defined and approached with mass as a fundamental design element. First, we consider a simple box. Cut into this box is an opening for a door and a window to provide access and a view. We have a pragmatic form that is essentially, punched out (Sketch 1a). Consider the same form but this time cut away the wall altogether and expose the massing of the structure. The opening now floods the space with light, the mass of the form and void within are both visible to experience. Space is supported by structure while the opening serves as access and light (Sketch 1b). Essentially, in this concept, mass creates and defines space but also exhibits strength by revealing the thickness of the structure. This is a dogmatic approach to what can be a much broader paradigm shift in other architectural rationalizations of mass (see Part 2 of this text). For our purposes, it proves the simple point that a space can be more than the sum of its parts or, rather; the sum of the parts, exposed and carefully considered, can produce a much more elegant, expressive and sustainable space.

Sketch 1A

Sketch 1B
Through all of the interpretations, the appeal of adding back the lost massing in residential architecture in a more broad sense will involve a revolution in culture that treasures quality of architecture above gross space and vehicle centric living. Le Corbusier’s utopic view of the machine of mass building has indeed come to fruition and, clearly, as he understood in his writings, so too did the profound negative architectural possibilities (image 1). Of all accomplished architects studied for this writing, it was Le Corbusier’s own expressive texts baring a passionate desire to provide healthy and sustainable living environments to the masses, that proved most stimulating. Like the other masters of Architecture, his genius lives on in his buildings and stand as a monument to what we too can achieve for our future residential inhabitants.

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End Notes:

2 Le Corbusier, et al. 17