

## Beyond Envisioning Invention in Realization

### FACE Design

The authoring process is an exercise in ego and conviction, and sound architecture is the product of authors whose vision is clear and abilities of description are capable. But surely there are discrepancies between what one may imagine and what comes to be. Space, scale, finish, the play of light and sound and air, the way in which things are put together, connections, details, adjacencies, and collisions, all must hold surprises.

When a writer puts words together it involves a process of combination, of layers of meaning combining to form idea and representation. The work is a direct manifestation of the process that allowed it to be. An author does not describe a work to a writer, he crafts it himself. There is no disconnection between the intent and the finished work. It is, of course, impossible for an architect to, through imagining alone, create space; but shouldn't architecture, in part, be an attempt at limiting that disconnection occurring at that moment when the architect hands over the documents that describe any

given vision to the professional whose responsibility it is to realize it.

Contemporary times mandate that the description an architect gives of a construction be as comprehensive as possible. Stacks of description which become dangerously binding. The ubiquitous "change order," a dark phrase with a negative connotation which, when enacted, allows the architect access to his intended design while under construction. This may explain the domination of computer graphics in the field, which allow envisioners to attempt to experience potentials in space before they are committed to.

But what if the architect made attempts to limit the loss of control in this phase of realization? Would this increase the likelihood that the solution arrived at be more effective? How could an architect be more complicit in the construction process?

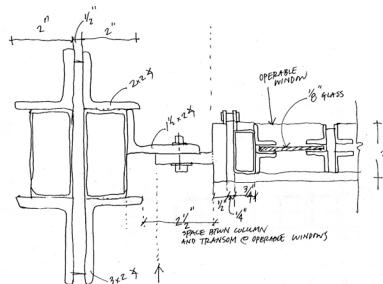
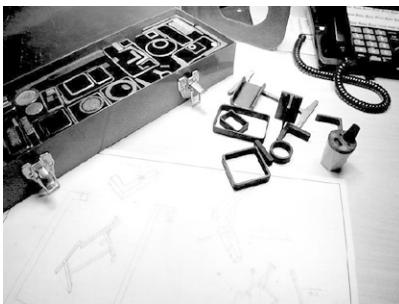
The term Design/Build has been appropriated historically to the act of wearing two hats, the architect who also has

some means to construct. This offers advantages which are predominately economic and are motivated by an attempt to streamline a process which can be very inefficient. But what if Design/Build were, in addition, motivated by the desire to achieve superior solutions. In fact maybe there should be no separation in the process; the constructor, who shapes a space in relation to his/her own body, pushing and pulling a construction midstream. This is as rare to happen as it is economically unrealistic for the building process to be so improvisational. Construction is a consort of many trades and time lines working together and ideally is expeditious. Improvisation is a component currently lost in the act of architect involved building. How might the architect be re-installed in the building process?

The prototype is often considered to be mock-up, a maquette, of condition within a building which deserves or requires an advanced look. But prototyping when applied to a building system may be considered empirical

testing of equipment that might allow for flexibility when applied to space making. The time and money spent developing any system is intended to be recouped in its deployment, either in its efficiency or in its potential for re-use. A system, once developed, is not the solution, but is simply additional language with which a solution is approached and provides inherent opportunities when applied to an envisioned construction. Often, and most efficiently, systems are re-combinations of existing technologies and processes. With increased specialization in industry comes less and less merging of separate advances. Often this combination will be missing a "bridge" which allows for their working together, providing the simplest insertion may allow for an entirely new working vocabulary.

Architecture's role is to question, recognize and predict social and cultural patterns in the habits and rituals of everyday living in urban, suburban, or rural settings. Our query is yielding what we call Spatial Equipment.



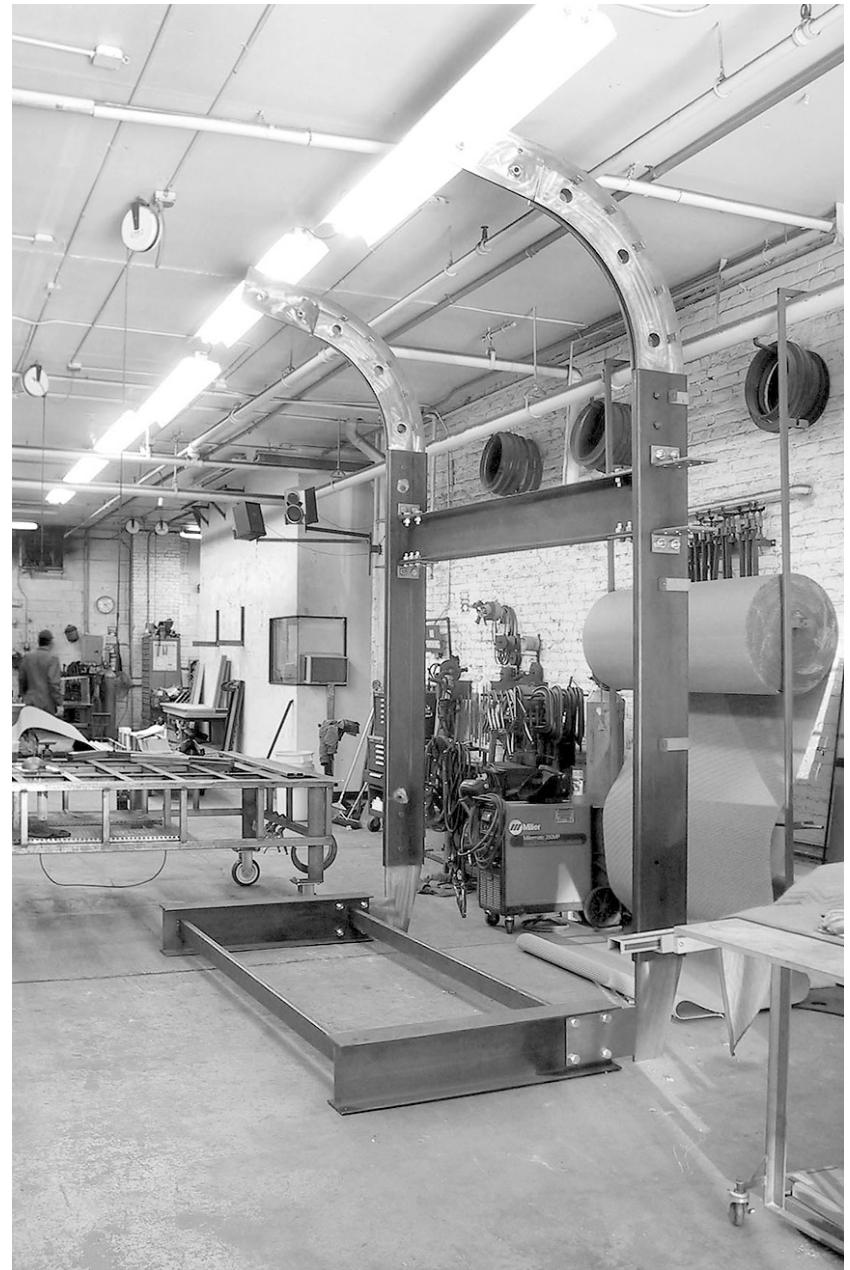
Spatial Equipment began as an attempt to place architecture within the pre-built urban landscape. The compression of existing spaces and the transient/mobile nature of clients, for whom investment in site-specific build-outs and renovations was unrealistic, called for solutions. Apartments and workplaces are most often rented and spatial improvements may be considered lost investments. Building owners, aware of tenant turnover and the value of every square foot, desire a level of flexibility in their building pursuits. These parameters among others have informed our interest in the development of intimate architectural systems.

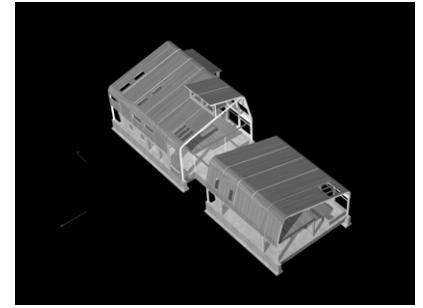
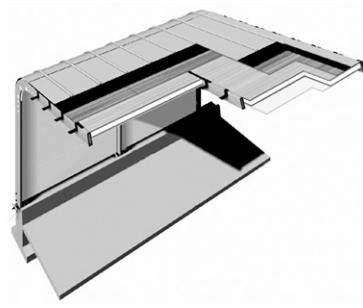
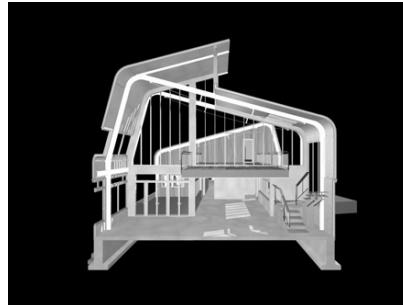
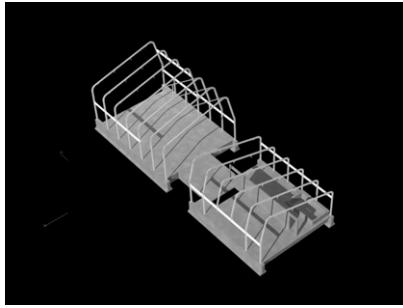
Spatial Equipment manifests as organizing frameworks, sites which integrate and overlap differing programs, converting typically static services and functional needs into custom components. Pre-plumbed walls, pre-wired platforms, and specialized cores become elements that satisfy function yet also define space: a vocabulary of recurring details, assemblies, and

arrangements that may efficiently be produced and deployed. Sometimes kinetic, sometimes serene, these constructs often out-live the context for which they were created and move on with the client as would an heirloom.

It is from this referential perspective that we approach the task of new home construction. We have attempted to fold lessons learned in the interior landscape outward to provide an example of how systemization and manufacture might be applied to create a progressive and capable envelope.

This first attempt at home construction has been motivated by both the traditional set of formal and functional parameters and a desire to address certain deficiencies apparent in the contemporary world of construction. As a prototype construction it may be considered a first in a series which will evolve; lessons have been learned and improvements are inevitable. It is sited in Southern New England on the banks of a brackish river and is still in construction, but nearing completion.





A major formal inspiration for this project has been the traditional timber-frame barn structures which are numerous to the region; often dilapidated, but surviving to remind us of a rural industrial building type that was austere and somehow noble in its scale, proportion and utilitarian detailing.

To achieve a generous volume of space while creating a domestic scale has been the challenge. Avoiding the use of old-growth timber led to the development of a post-tensioned steel moment frame which is more capable in its spanning abilities. This structure was pre-engineered and component-based to allow for flexibility in its erection and the ability to re-configure its assembly in future deployments. Laser cut gussets join

structural tube lengths and allow for attachment of post-tensioned assemblies. Pre-fabrication and finishing of all components in the shop meant the elimination of all on-site welding, a traditionally expensive process. Simple mechanical connections allowed this fairly complicated structural system to be erected in just seven days. Much like a timber frame “raising,” large bents were assembled flat on the ground, tilted into place, and temporarily braced awaiting an integral stressed-skin.

This stressed-skin is becoming more common in construction for its super insulative qualities and, again, speed of erection. These structural insulated panels, or SIPs as they are known, are six-inch thick sandwiches of high-density foam and recycled flakeboard,

which are computer milled to specification and delivered *en-masse* to site. Typically they are used in two ways, either as insulating skin over a self-supporting timber frame, or at small scales, as structural envelopes. When coupled with a steel frame and allowed to work, large volumes can be contained quite efficiently. Curved SIPs were also developed (a first for the industry) for transitions at peaks and eaves and SIP clips were developed to translate loads between frame and skin. The chief benefit of this skin system is that it allows for the carving of openings without the typical structural compromise as it is a composite material. The ability to bring light and air to any point in mid construction is quite liberating. The “skinning” of this structure took just three weeks.

This home is situated on a long narrow lot and is accessed from a busy street on its western side. At 5,500 square feet, it sits on a large footprint and two major issues influenced its siting.

First, was the attempt to orient views to the cold, picturesque, north face and river while allowing natural light to filter from the south. Strategic carving of the envelope was studied digitally to maximize winter light, while providing shade in the heat of summer and to frame views of the river. A large sun-scoop sits atop the roof allowing reflected sun to spill down into the house and providing whole house ventilation against the heat.

Second, was the desire to afford a level of privacy both indoors and out. There was not the width in the site to allow



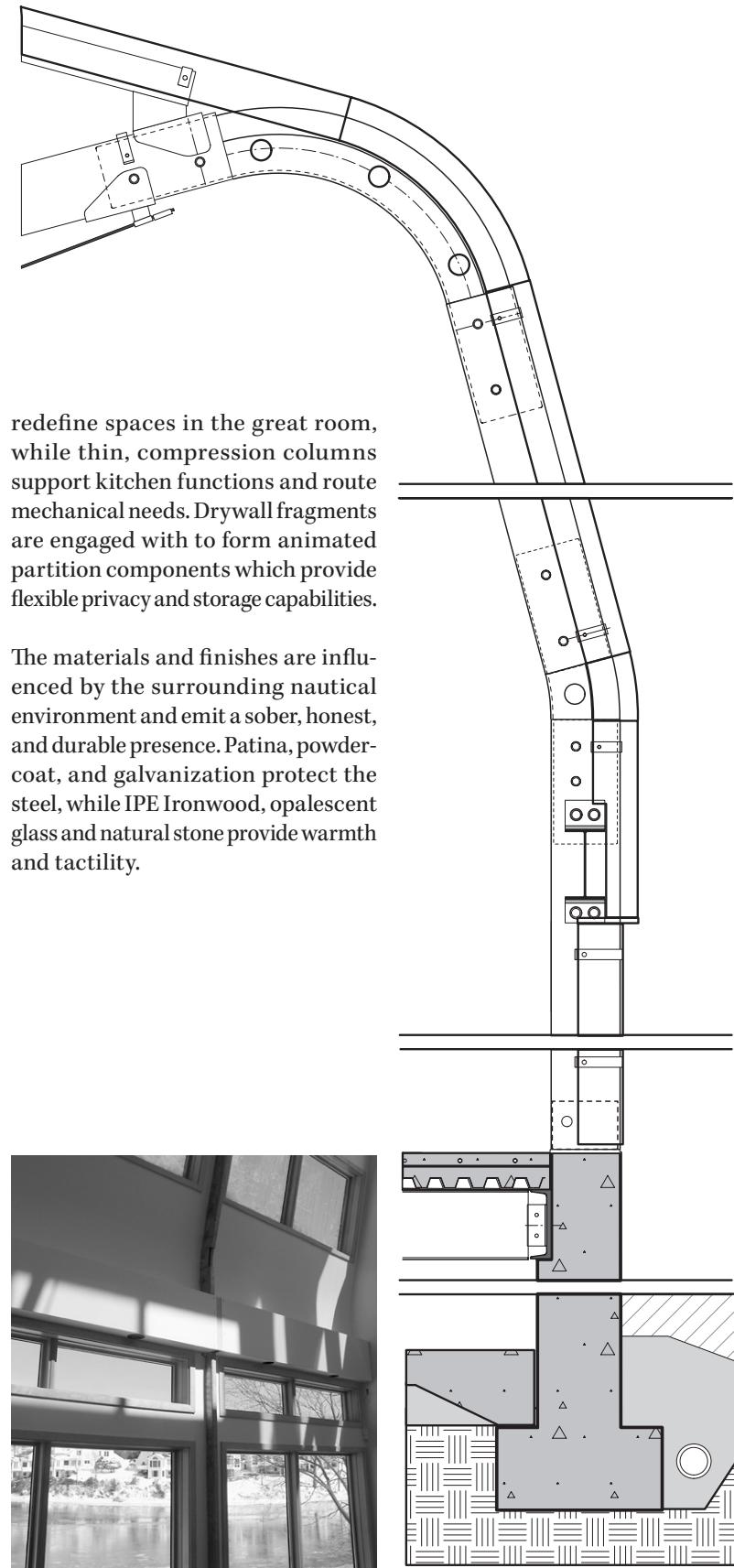


for a courtyard parti which was an obvious solution. Instead the courtyard was split in half and allowed to flank a breezeway which connects the two main volumes of the house. These two volumes are sectionally inverted and altered respectively. The roofs become walls stressing a continuity of form, away from the post-and-beam to fluid, structural skin and also perform the task of reducing the building's visual bulk.

The main body of the house may be considered one large volume which contains a sizeable mezzanine housing two master suites and an overlooking library and lounge area. This mezzanine extends to bridge itself across a two-story, vaulted, great room to connect with the breezeway roof-deck and is accessed from an open steel-

and-glass stair. Below, at ground level is an open plan organized around a loosely-defined kitchen which connects itself with all surrounding programs. Dining, living, and lounge share the north face and river views, while pantry, office, and bath reside in the south. A long circulation axis defines the halves and connects through the breezeway separation to the smaller wing to the east. This second body contains guest accommodations, a spa area, and a garage with studio above. The ground floor sits atop a full basement space and its cast concrete slab allows for integral radiant heat with proper thermal mass.

Throughout the home are areas that have been articulated with Spatial Equipment. Large steel-and-glass sliding wall portions are allowed to



redefine spaces in the great room, while thin, compression columns support kitchen functions and route mechanical needs. Drywall fragments are engaged with to form animated partition components which provide flexible privacy and storage capabilities.

The materials and finishes are influenced by the surrounding nautical environment and emit a sober, honest, and durable presence. Patina, powder-coat, and galvanization protect the steel, while IPE Ironwood, opalescent glass and natural stone provide warmth and tactility.



