BILLBOARD:
MISSION CREEK AQUATIC CENTER

by Patrick Flynn and Joseph Barajas

Billboard: Mission Creek Aquatic Center draws inspiration from its surroundings and context, both formal and cultural. Its structure and form seeks to expand upon the vernacular precedent of a once industrial neighborhood in rapid transition, while its most public facade renews the political and decorative tradition of mural art in the predominantly Latino Mission district of San Francisco. The experience of the building is largely focused on the visitor's movement throughout the interior, dictating views and experiences of each visitor type, as well as the community's movement on the surrounding streets as we attempt to break down the monotonous façade of the industrial landscape. Submitted to the 2005-06 6th Annual ACSA/AISC Steel Design Student Competition, the Billboard project was designed over the course of a semester and was awarded an Honorable Mention in a field of more than 400 other projects.

Throughout the design process, not only did **form•Z** simplify technical details by speeding up calculations and measurements, it invaluably put language to form, helping us as designers communicate our vision. From the outset, **form•Z** permitted us to defy conventional physical model building and instead rapidly create multiple iterations of our proposed form. The animation potential allowed us to focus on the pedestrian and vehicular experience of the building grounding the project in its urban context; utilizing walk-through animations created a discourse between the desired experiential affect such as the cascading nature of spectator seating toward the pools and the formal moves that could heighten it. Additionally, while our physical sketch models allowed for rough massing and expression, the "digital" sketch model allowed for clarification and the refinement of acute angles and materiality of earlier proposals, often informing future iterations. We found such a dialogue between the physical and digital environments to be rich and productive.

Figure 1: **The billboard facade along Folsom Street.**

The emerging form of the building took the local industrial vernacular as its formal vocabulary, celebrating the historic industrial language of the Mission and Potrero Hill Districts of San Francisco (Figure 6). The initial gesture of the project was a 5° planar shift that aligns the building plan and roof profile due north from the city grid's alignment which was further articulated with saw-tooth incisions along the roof plane aligned with the superstructure, an elegant open web long span truss system supporting the modified saw-tooth roof (Figure 7). Sun exposure was a critical consideration in our design process. The modified saw-tooth roof is not only a formal nod to the surrounding neighborhood, but also a practical solution for reducing glare to swimmers through its northern orientation. **form•Z**'s sun-positioning tool digitally rendered solar azimuth and altitude allowing us to avoid direct sun exposure to the pools, and created renderings for any day of the year confirming that we had achieved the desired sun shading.

Figure 2: **Main entrance.**

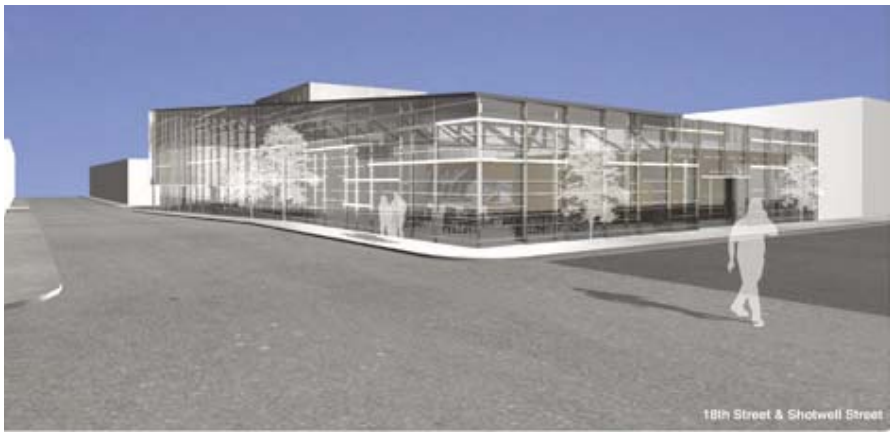

Figure 3: **Cafe entrance.**

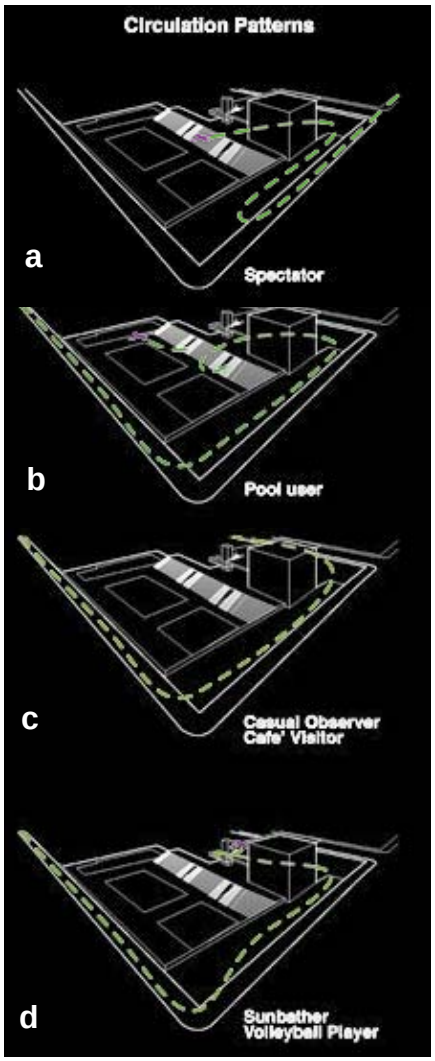

Figure 4: **Visitor circulation patterns.**

Upon completion of the schematic design phase, the design development revolved around two primary organizing principals: repetition and complex angles. The project site, along the busy Folsom Street commuter corridor called for a dramatic large-scale gesture. The goal was to design a façade that had impact at both vehicular and pedestrian scales. We quickly came to the idea that this façade should act as an oversized mural or billboard reflecting the colorful history of the neighborhood's mural arts culture (Figure 1). This move would also enable collaboration with the community and local artists in the design and creation of the mural. The primary billboard structure served as a repetitive structure, echoing the vertical fins found along California highway medians. These fins, while preventing direct sight of oncoming headlights, allow for glimpses with a more acute view angle. The fin-like "super-mullions" reflect the billboards 5° shift in building plan and section-elevation. Here again sun exposure was a big consideration, and the 250' long Folsom Street façade diagonal slope was used to allow light to penetrate the 125' depth of the pool shed while defusing direct glare caused by early morning eastern light. To achieve this new set of design goals, **form•Z** was used to cut through some of the tedium, equally dividing the 250' façade and dictating the placement of the billboard super-mullions and long span truss system. Using **form•Z**'s Boolean operations, we took the larger massing models and began to break them down in order to articulate individual building systems horizontally and vertically represented in the 5° planar shift, its dimensions, relationships to the mullion structure and glazing. The Folsom Street façade's etched graphic imagery is at a scale large enough to be read by commuter traffic, while offering pedestrians views into the aquatic center along the sidewalk through the billboards upward sloping design (Figure 2).

The aquatic center entry draws the visitor up a ramp at the slope of the sidewalk. The lobby floor emerges as a spectator plinth providing sweeping views of the pool and its steel shed. This is the heart of the Billboard project (Figure 11). Our intent was to introduce spectators, at first glace, to the building structure above with its elegant simplic-

ity then dramatically displaying the most exciting event, diving, at the spectator's feet below while offering unobstructed views to all activities from every seat in the aquatic center. The spectator seating then cascades below toward the pools where visitors can access the locker rooms, classrooms and therapy pool. The therapy pool is a glass-encased, autonomous space surrounded by the lobby yet only accessible from the pool level. When unused, the most public space of the building, the lobby, is provided a bird's eye view of the most private space, the therapy pool. As the therapy pool is activated and the room filled with steam, condensation provides privacy from the other building inhabitants; this change in transparency renders the therapy pool private. The therapy pool again takes visitor perception and experience into great consideration. With a ceiling height of 50 feet, visitors could easily get lost in such a space. The therapy pool design intent, as with the pool shed, was to enhance the senses of each visitor through transparency, light, and simple materiality. Our design does not focus on superfluous formal expressiveness, but on experiential intensities. Throughout the project's development we placed an emphasis on the processional sequence of both the approach and progression through the Aquatic Center. The animation capabilities of **form•Z** allowed us to illustrate study and develop our understanding of this movement and based on the multiple animation iterations we were able to fine-tune the building's programmatic arrangement in order to choreograph its inhabitants' experience.

Again, we exploited **form•Z**'s Boolean operations for rendering perspective-building sections for use on our competition boards (Figure 5). These perspective views better express sectional qualities of the project, creating a more experiential drawing and enhancing the typical two-dimensional building section drawing. Furthermore, material and texture renderings helped bring the building's interior qualities to life in our drawings. **form•Z**'s rendering ability enabled us to clearly communicate our design intent.

As we submitted this project to a national architecture student competition, it was important to us that we used the most sophisticated tools at our disposal. As a design team, we must find a way to take our amazing synergy and vocalize it in our work. While normally we create lucid physical models for in-studio presentations, **form•Z** allowed us to clearly articulate our design goals digitally when our competition entry boards must speak for us.

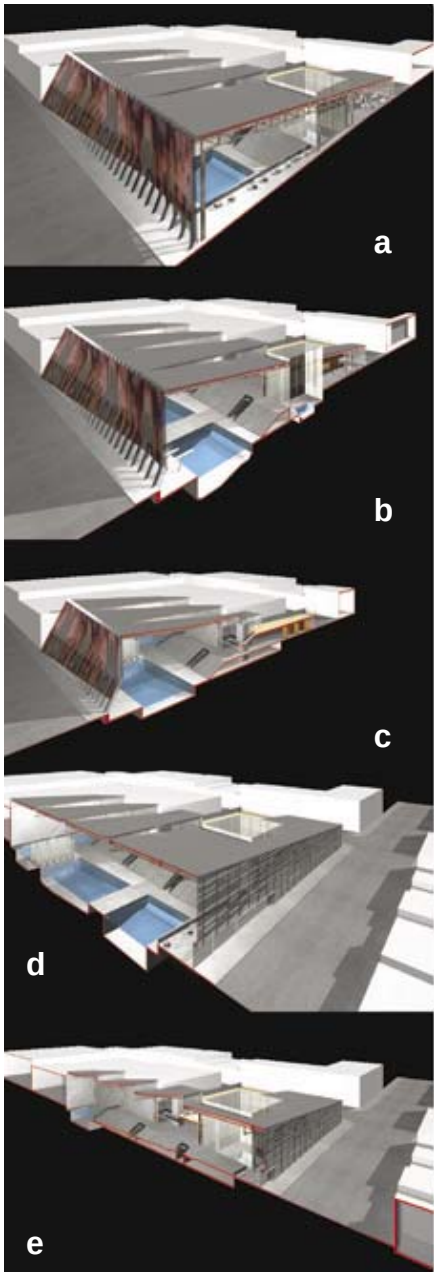

Figure 5: **Sectional perspectives showing spatial connections.**

Figure 6: **The Aquatic Center is located in the Mission District of San Francisco.**

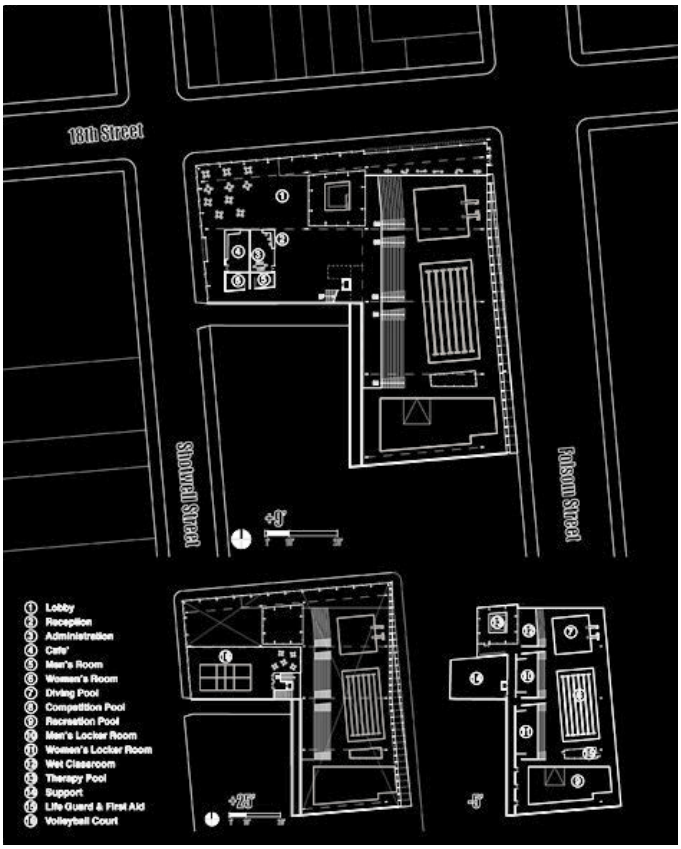

Figure 7: **Site, roof, and lower floor plans.**

Figure 8: **Structure components.**

Figure 9: **Photos from the physical model.**

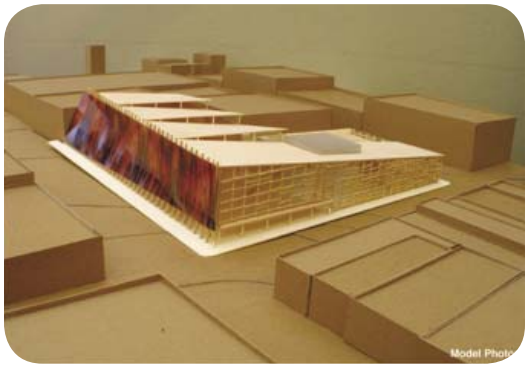

Figure 10: **The physical model.**

Figure 11: **Entrance procession.**

Patrick Flynn and **Joseph Barajas** met while classmates at the California College of the Arts (CCA). In 2005 Patrick and Joseph were part of a four-student design team whose entry to the National AIDS Memorial Competition was awarded an Honorable Mention and published in a book entitled *Emergent Memories: The National AIDS Memorial Competition*. Patrick graduated with a Bachelor's of Architecture with high distinction from CCA in 2006 and is now a Project Designer at envelope Architecture+Design. In 2005 & 2006 Patrick received awards for Excellence in Digital Media and Representation from CCA. In 2005, his entry to the AIA Boston's *In Pursuit of Housing* competition was awarded an Honorable Mention. Before attending CCA, Patrick studied Computer Science at Northeastern University in Boston. Joseph is currently completing his Bachelor's of Architecture and is graduating in Spring 2007. Joseph received the Third Year Book Award for Building Innovation and Design Excellence in May 2005. He is currently an intern at Tom Eliot Fisch in San Francisco. Prior to attending CCA, Joseph studied Interior Architecture at the School of the Art Institute of Chicago.