



## Renzo Piano Reinvents The Natural Science Museum

Mattie John Bamman (November 22, 2008)

“Every time, it is a new adventure: A new place, new geography, new topography, new people ... How can you believe that you can impose your style?” said the famous Italian architect at the opening ceremony organized by the California Academy of Sciences.

In 1451, the painter Filippo Brunelleschi decided to paint the architecture of Florence as it was reflected in a mirror. He couldn't have known that his “duplication,” or mere copying of the reflection, would lead to one of the greatest intellectual periods in western civilization, the Renaissance. By noticing that the lines of his painting all converged at one point on the horizon, Brunelleschi had reinvented perspective. Perhaps less profound, but no less innovative, is the perspective with which Genovese architect Renzo Piano has reinvented the concept of the natural science museum. The California Academy of Sciences in San Francisco, opened on September 27th, 2008, can be seen as a dialogue between visitors and the building, the building and nature, and the Italian architect and the city of San Francisco. Piano created this dialogue in hopes that science would be more accessible to more people, rejecting the notion of a natural science museum as a “kingdom of darkness.” Most science museums are set up like an argumentative essay. The visitor is introduced to the basic concepts, e.g., dinosaur skeletons and red volcanic rock, then whisked away on a tour of the ages, e.g., animals that have come and gone, the dodo bird, the rise of man, the birth of fire, etc. before finally getting to the point, viz., the fun stuff, e.g., mechanized gazelle, polar bears, albino alligators, and steamy swamps. This is to say that most science museums have a starting point, a preplanned route, and an ending. It is this kind of directional and organizational control that Piano rejects, and he does so by designing his buildings around his love for the piazza and poetry.

Renzo Piano - Architect of California Academy of Science At the opening ceremony for the California Academy of Sciences, the Pritzker Prize-winning architect quickly stood out from the other speakers. He made great sweeping gestures to illustrate the high emotion that ran through him and at one point even cried, “Mamma Mia.” Piano's honest emotion revealed humility when confronted with his impact on a culture that is not his own. “Every time, it is a new adventure: A new place, new geography, new topography, new people ... How can you believe that you can impose your style?”

From the beginning, Piano stood out from the other prospective architects when bidding for the job. In contrast to the other architects, he did not arrive with completed plans for the building but was armed with only a notepad and green felt pen. The executive director at the California Academy, Patrick Kociolek, recounted that “instead of explaining his design for the new Academy, Piano simply asked what the Academy's ethic was.” Piano likes for his buildings to tell stories, and it is his willingness to hear the stories of others that has made the CAS building, speaking architecturally, a modern day cathedral.

To appreciate the CAS, it is best to take a tour. The CAS is the greenest building ever built; it houses the deepest living coral reef tank in the world, a 290 seat planetarium, and a completely self-contained biodome that contains four unique jungles, and it uses 1.7 million living plants as a roof. Upon entering the building, visitors immediately face a giant piazza that is the nucleus of the



building, overhung by a stunningly complex framework, which workers remarked was the hardest part of the building to construct. Natural light infiltrates at least 90% of the regularly visited areas and this is a key element in telling the story of a natural science museum: The building's duty is to look accessible to everyone.

Another storyline of the CAS building is that it should excite visitors about science by sparking the imagination. From the central piazza, visitors can go to either the planetarium or the biodome. Heading toward the fully transparent, jungle-filled biodome, visitors walk actual scientists conducting research behind transparent, plexi-glass partitions so that visitors can watch them in action, e.g., dissecting birds on opening day. Over 50 world-class scientists in eleven fields of study conduct daily research at the CAS.

Renzo Piano in an interview with Charlie Rose Inside the biodome, a spiral walkway traverses four floors of the jungles of Madagascar, Borneo, Costa Rica, and the flooded forest of the Amazon. The sloping walkway features such complex geometry that a roller coaster manufacturer was brought in to shape the steel. At the top of the biodome, an elevator is positioned to take visitors through the flooded rainforest itself, then drop them off beneath the 100,000-gallon tank that holds it. Amazingly, an acrylic tunnel allows visitors to walk beneath the aquarium as Amazon river fish swim over head.

The tunnel then leads to another set of underground pathways designed to resemble waves. The rolling walls are illuminated in shimmering blue light, and 360-degree movies are projected on them once an hour to highlight the importance of conserving water. In this dungeoned water world, all matter of water life can be found, from tide pools with starfish, to a 165-lb sea bass, to self-lighting jellyfish. A final passage way reveals a long window into a den of alligators and fish. The window is divided between the underwater world and the steaming swamp, where a sleepy albino alligator suns on a rock.

A stairway takes visitors back to the ground floor, where the alligator den can be viewed from above. The alligators, as they sun themselves, likely appreciate the significant amount of natural light Mr. Piano allows into the museum. Just past the alligator den is the main piazza again, and to its right, the planetarium. The 90-foot dome of the planetarium contains a 75-foot-wide, tilted and curved screen on which visitors discover how truly unique the earth is among the universe.

Just outside the planetarium are a number of interactive exhibits, including a video game in which visitors use a Wii gaming wand to catch different species of insects, allowing visitors to play with science. Walking past a skeleton of a tyrannosaurus rex, visitors are faced with three options, 1) cafeteria-style dining, 2) a full-service restaurant, the Moss Room, with sustainable food, or 3) elevators up to the living roof. The elevator opens to the foggy, chilly air of San Francisco and one of the most unusual roofs in the world. Three bulbous hills, designed to mimic San Francisco's own hilly geography, are filled with skylights. The roof is the largest area of native wild flowers in San Francisco county. Several Youtube videos offer a nice perspective.

California Academy of Science, Living Roof Piano's love for the piazza becomes fully realized here, for this piazza is unlike any other in the world. It has an elevator coming up through the middle, is surrounded by thousands of plants growing out of invisible coconut-husk planters, and looks across the museum's concourse to the other worldly DeYoung Art Museum. From the top of the California Academy of Science building, visitors may reflect on the work of Renzo Piano: a man who was born in Genoa in 1937 into a family of contractors, went to the Milan Politechnic Architecture School before traveling to the United States to work in Philadelphia, and built the most visited building in Paris, Le Centre Pompidou. His Italian heritage can be seen in the piazzas of his buildings, but it is his poetic, interactive approach that makes his architecture so popular. On opening day at the CAS, Piano said, "nature is the inspiration of the building." Like Brunelleschi's painting, the California Academy of Sciences building is, above all, a reflection of the world.



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