

Contemporary Architectural Challenges – The Late 20th and Early 21st Centuries

Modernity at the end of the 20th century: the placement of human experience in some conscious relation to history and society.

New Urbanism. “**New Urbanism,**” write the movement’s leading architects Charles Duany and Elizabeth Platy-Zyberk, “is the revival of our lost art of place-making, and promotes the creation and restoration of compact, walkable, mixed-use cities, towns.” Criticizing ubiquitous sprawl of automobile suburbs begun with such communities as Levittown, built by William Levitt from 1947-51, New Urbanism arose in the 1980s to promote accessible, walkable communities that would recapture the essence of a perceived “ideal” American small town. DPZ (Charles Duany and Elizabeth Platy-Zyberk), **Seaside**, Florida, 1981.

Eisenman’s Institute for Architecture and Urban Studies in the 1970s as a home for both “deconstructivism” and as a grant-giving institution for authors like Rem Koolhaas of the Netherlands, who, at the Institute, writes the book *Delirious New York* (1978). The book glorifies and studies Manhattan’s “culture of congestion” and its implications for architectural form. Koolhaas’ Office for Metropolitan Architecture propels his theories into the “datascape” mode of design, example: Seattle Public Library, 1998-2004. Frank Gehry, ‘We don’t need another theorist:’ **Gehry House**, Santa Monica, CA, 1978; **Fishdance restaurant**, Tokyo Japan, 1987; **Guggenheim Museum**, Bilbao, Spain, 1992-98. Gehry’s abiding interest in sculptural form manifests over 30+ years.

Hi-Tech: According to its leading Western practitioners like Richard Rogers, Norman Foster, Nicholas Grimshaw, and Renzo Piano, Hi-Tech is not a style of architecture *per se*, but an “approach to building,” one that arises in the 1960s and 1970s and continues to develop today. Precedents: Buckminster Fuller’s experiments with geodesic domes, based on principle of “tensegrity” structures that combine the usual compression forces of gravity with additional tensional forces supplied by connected structural members organized in a space frame. Examples: Buckminster Fuller, with MIT students, **Skybreak house**, 1952; Buckminster Fuller, **United States Pavilion**, Montreal World’s Exposition, 1967, a geodesic dome in the service of the Cold War Space Race. Dome interior featured exhibitions of U.S. technology, NASA space program information, all linked by stairways and escalators; Buckminster Fuller, with Norman Foster Associates, “**Climatroffice**” project, 1971 = “No building in the conventional sense other than a closed, transparent bubble in which the office floors float; lush vegetation creates a micro-climate” (- quoted in Deyan Sudjic, *New Directions in British Architecture*); ASM International, **Materials Information Society Headquarters**, outside Cleveland, Ohio, 1980.

This evolves into Norman Foster’s realization of the true glass Miesian curtain wall at the **Willis, Faber, & Dumas Headquarters Building** in Ipswich, Suffolk, 1975. Open 3-storey office interior accented by flow-through escalators to roof garden above, and day-care and swimming pool below ground. Project architect Michael Hopkins, and again Ove Arup’s engineer Peter Rice. More transparency: Rice’s glass curtain wall without mullions. Uses silicone caulk to butt join glass plates directly, with 1st use of planar glass fittings and “spider clamps” to hold glass at joints yet allow for wind forces through use of ball joints. Combines Le Corbusier’s free plan ideas with Mies van der Rohe’s glass curtain wall of his 1921 Berlin Friedrichstrasse (unbuilt) hi-rise project.

Richard Rogers and Partners, **Lloyd’s of London Building**, 1979-84. A Hi-Tech Paradox?: Hi-tech buildings like Lloyd’s or the Pompidou Centre generally consist of carefully wrought, individually crafted and highly engineered parts that raise the individual industrial components of the structure to an art form. Buildings are a celebration of infrastructure, but machine-age standardization that these buildings seem to celebrate gives way, instead, to an assemblage of parts that for the most part continues to occur only within a single building system, not across the building industry. Hi-Tech architecture inverts the nineteenth-century “historical picturesque ideal” (follies in aristocratic landscaped gardens, for example) by exhibiting a nostalgia not for the past, but for the future (a “picturesque inversion”). Compare to Henry Hoare II and Henry Flitcroft, **Stourhead Garden**, England, 1741 to 1765, with its ½ scale building of the Pantheon as an “associational” link to a glorious, generalized past to be contemplated rather than a specific history to be studied.

Some general principles seen in (most) hi-tech buildings – Think of the Pompidou Centre or Lloyd’s of London here: “**Inside-out:**” Services and structure of a building are commonly exposed on the exterior of the building, allowing for great interior flexibility and adaptability. “**Celebration of Process:**” Often brightly painted or highly polished mechanical components featured; dramatization of building structure through maximum exposure of cross-braces, H-masts, silver ducts, top tension members, steel cables, and trusses. The servant/served problem and the façade: have the servants taken over

the house? **“Transparency, Layering, Movement:”** Dramatic uses of translucent and transparent glass, the layering of ducts, stairs, and moving escalators and elevators – all of which further articulate building’s function and use.

“Optimistic Confidence in a Scientific Culture:” Machine-age imagery bespeaks faith in the Futurist promise of an unknown world waiting to be discovered, accomplished through the last principle of an “inversion” of the picturesque.

“Picturesque Inversion:” Hi-Tech buildings borrow from older notions of the picturesque in architecture, yet they invert the underlying principle of the historical picturesque. That is, whereas the picturesque tradition invokes the past by reproducing it as evocative, miniaturized monuments or constructed ruins, (e.g., The Pantheon at Stourhead, Strawberry Hill), hi-tech architecture inverts this nostalgia for the past through an expression of nostalgia for the future. Hi-tech’s picturesque compositions of dramatized infrastructure and sleek technological prowess transcend everyday reality suggest that advanced technologies are better equipped to solve human problems. Hence Norman Foster’s assertion that his “architecture is about people” and “people questions,” and not style or aesthetics.

Rogers and Piano combine the Archigram/Superstudio/Case Study House sensibilities and win a major competition for the **Pompidou Centre**, Paris, 1971-77. Early multi-layered media-savvy façade gives way to 2-layered exterior, open floor plan achieved through engineering abilities of Peter Rice at Ove Arup & Partners Engineering Office (Rice combines ferro-cement and ductile iron to achieve unusually long interior spans).

Michael Pearce with Arup Engineering, **Eastgate Complex**, Harare, Zimbabwe, 1996, incorporates principle of “biomimicry,” or the application of principles observed in existing life forms to solve design problems. Eastgate Complex is a 324,000 square-foot commercial/office and shopping complex, the largest in all Zimbabwe. It is inspired by termite mounds and natural passive cooling. The program called for a relatively inexpensive building with acceptable levels of comfort in the offices, without air conditioning, and without compromising the aesthetics and overall quality of rentable space. The building is designed with two nine-story office buildings and a glazed atrium. Amazingly, in Zimbabwe’s hot climate the buildings primary cooling system is naturally ventilated. Engineers from the environmental engineering firm Arup sought inspiration for this naturally ventilated marvel from local termite mounds - these creatures require their home to remain at an exact temperature of 87 degrees Fahrenheit throughout a 24 hour daily temperature range of 35-104 degrees Fahrenheit (night and day respectively).

Snohetta architects (orig. from Oslo, Norway), **Memorial Museum for World Trade Center**, New York City (under construction).