

Chapter 20

I. POSTMODERN MOVEMENTS: POPULISM, RADICALISM, AND IRONY

During the 1960s, mass social movements shattered the complacency of European and American cities. Protests raged in the streets against such issues as nuclear weapons and the war in Vietnam. The generation of 1968 generally advocated a "people's architecture," involving participatory design.

A. People's Architecture

1. By the end of the 1950s, Modernism began to seem more of a problem than a solution.
 - a. Younger dissident members of CIAM founded Team 10 as a critique of the Athens Charter's insensitivity to community and urban context.
 - b. Jane Jacobs led the resistance to urban renewal, and, by extension, the debunking of the International Style.
2. A new category entered into architectural theory: the "user." The respect for inhabitants led to sociological surveys of needs and desires, stimulating architects toward a "people's architecture."
3. Eero Saarinen pioneered the application of sociology to architecture.
 - a. Students filled out questionnaires—their responses led him to propose a New Brutalist version of collegiate Gothic.
4. The inability of functionalist architects to fulfill urban and social needs sparked calls for popular participation in the design process.
 - a. The Dutch architect N. John Habraken proposed the "supports" method.
 - i. His concept influenced many universities, public housing estates, and even shanty towns.
 - ii. The Memé project, the Medical Faculty at Woluwé-St-Lambert begun in 1968 on the outskirts of Brussels.
5. The Austrian painter Friedensreich Hundertwasser proposed a similar sort of colorful disorder.
 - a. Complained that standardized design dehumanized life.
 - b. The Hundertwasserhaus, funded by the city of Vienna, demonstrated how his vision could be realized in a low-income social housing project.
6. During the late 1960s, Ralph Erskine coordinated one of the most successful participatory projects, Byker Housing Estate.
 - a. Social housing had finally achieved the right mix of urban scale and program just as most governments withdrew support for it.
7. The Portuguese architect Álvaro Siza proposed a viaduct as the formal solution for the Malagueira Project in Évora.
 - a. Proposed to channel the conduits for water, gas, electricity, and telephones into an aerial viaduct raised on pylons.
 - b. The residents, stimulated by their new political freedom, pursued a communist ideology, demanding full participation, while declaring that the "architect is the tool of the people."
8. Herman Hertzberger (b. 1932) designed the most acclaimed application of Habraken's "supports" theory, the Centraal Beheer in Apeldoorn, the Netherlands, in 1968.
 - a. The structure followed a tartan grid leaving office modules to be completed in different configurations according to the occupants' desires.

9. The quest for a people's architecture responded to the 1964 exhibition, "Architecture without Architects."
 - a. Survey of vernacular buildings
 - b. The planning of Sea Ranch
10. The success of Sea Ranch influenced Christopher Alexander (b. 1936), a professor at the University of California at Berkeley.
 - a. Abandoned his positivist background to embrace the charm and wisdom of vernacular buildings.
 - b. His treatise *A Pattern Language: Towns, Buildings, Construction* proposed 253 patterns, based on vernacular solutions from throughout the world.
11. During the 1990s in Alabama, Sam Mockbee formed The Rural Studio with his Auburn University students to design and build houses and public buildings with the residents of poor rural communities.
 - Produced work bristling with innovative combinations of materials and ingenious structural solutions.

B. Radical Architecture: The Call to Nomadism

1. The politically charged atmosphere of the 1960s radicalized Western culture.
 - a. The energy of political dissidents instigated an architecture of liberation.
2. The first signs of architecture's radicalization appeared in Paris with the Situationist International.
 - a. The playful method of the *dérive* (the drift).
 - b. The Dutch artist Constant proposed a city of densely packed, multicolored volumes lifted above ground level on pylons and spread randomly across vast territories without damaging the earth.
3. A group of young Japanese architects associated with Kenzo Tange (1913–2005) prepared the Metabolist Manifesto for the 1960 meeting of World Architecture in Tokyo.
 - a. Created a futuristic proposal for constantly changing architectural elements.
 - b. Kurokawa designed the emblematic Nagakin Capsule Towers.
4. Youth culture entered architecture most visibly with the 1960 publication of *Archigram*.
 - a. Prepared such science fiction fantasies as *Plug-in City*, octopods, and inflatable envelopes.
 - b. Such nomadic projects intimated that future societies would no longer need buildings.
 - c. Clearly influenced Rogers and Piano's Centre Pompidou in Paris.
5. In Florence, the radical group Superstudio, founded by Adolfo Natalini and Cristiano Toraldo di Francia, created conceptual projects and furniture from 1966 to 1978.
 - a. They depicted a universal gridded space extending into infinity.
6. By the end of the 1960s the new ethos of "sex, drugs, and rock-and-roll" took hold.
 - a. The Summer of Love, a mass experiment in collective living
 - b. It seemed for a brief moment that rock music, light shows, and hallucinogens could achieve the ephemeral ideals of a nomadic civilization without architecture.
 - c. Communes, like Drop City, sought to provide an architectural setting for countercultural movements.

7. In Denmark, the collectivist urges of the 1960s generated the movement for co-housing, *bofællesskab* (living community), which has continued as a viable legacy.
 - a. A group of fifty families settled in the first co-housing settlement of Saettedammen in 1967.
 - b. Co-housing became a viable way of life that improved community and conserved resources.

C. Postmodernism: The Ironic Return to History

1. If Modernism seemed overly dogmatic in its goals, Postmodernism emerged with purposeful ambiguity.
 - a. The debunking of positivism and the so-called modern project, by such theorists as Michel Foucault, criticized modern architecture as an agent of social control.
 - b. Postmodern theorists turned to history for alternatives, often yielding ironic attacks on the functionalist premises of Modernism.
2. Italian architect Aldo Rossi (1931–1997) formulated a European response in his 1966 essay, *L'architettura della città* (The Architecture of the City).
 - a. He condemned the "naïve functionalism" of Modernist architects and their premise that "functions bring form together."
 - b. The rationalism of the repeated type led him to design strict geometric projects analogous to the context, scale, and system of the historic city.
 - i. San Cataldo Cemetery in Modena
 - ii. Rossi's urban projects, such as the Regional Offices in Perugia built in 1988, were flawed by a disinterest in function, technique, and construction.
3. The exponents of the neorationalist movement, known as *la tendenza*, in Italy, Spain, and Switzerland, built with more attention to craft.
 - a. San Michele in Borgo in Pisa
 - b. In Spain, Rafael Moneo produced the most eloquent interpretations of Rossi's theories of typology.
 - i. Logroño City Hall
 - ii. Murcia City Hall
4. Mario Botta in Ticino, the Italian canton of Switzerland, used Rossi's concept of the "urban analogue" for his Ransila I Building in Lugano.
 - a. Designed the 1982 Medici House, or Casa Rotonda, in rural Stabio, as a pure cylinder.
 - b. Botta's successive projects continued to work with pure volumes, clad in brick or banded masonry, usually arranged in strict symmetry.
5. In the United States, Robert Venturi launched his "gentle manifesto" against Modernism with *Complexity and Contradiction*, also published in 1966.
 - a. Using an erudite collection of historic buildings he identified architectural figures of speech capable of ambiguity and irony.
 - b. Caricature of a colossal Ionic column set in the cut-out corner of his addition to the Oberlin Art Museum.
 - c. In the house that Venturi designed for his mother, he created an elevation that looked like a child's drawing of a house with a pitched roof.
 - i. Its complexity involved interrupting the simple pitched-roof with a meter-wide gap, evoking a Mannerist broken pediment.
 - d. Venturi elaborated the distinction between the "duck" and the "decorated shed."

- i. Most functionalists abhorred decoration, insisting that their forms were inherently beautiful as expressions of structure and function—he cited a duck-shaped restaurant on Long Island as an example.
 - ii. He preferred the “decorated shed,” the standard box of the commercial vernacular which specified its function by means of a sign—he used his 1963 Guild House as an example.
- 6. The American critic Charles Jencks (b. 1939) appropriated Venturi’s categories, such as “double functionality” and “super adjacency,” and catalogued the changes in style as Postmodernism in 1977.
 - a. Many of the works that broke with functionalist dogma offered ironic revivals of historic styles.
 - i. Charles Moore’s 1976 design for Piazza d’Italia in New Orleans
 - ii. Philip Johnson’s AT&T Building, crowned with a Mannerist broken pediment
 - iii. The simulacrum of a Pompeian villa built in 1975 to house the Getty Museum in Malibu
 - b. Jencks’s survey of Postmodernism anticipated some of the most significant examples:
 - i. The Portland Building by Michael Graves
 - ii. The Mississauga City Hall near Toronto
 - iii. The Harold Washington Public Library
 - iv. These three public buildings, large boxy volumes encrusted with overblown classical decorations, vaunted a sarcastic return to Greco-Roman iconography as both accessible to the masses and amusing for professionals.
- 7. The grandest postmodern projects in Europe appeared in the housing estates of the new towns outside Paris designed by Ricardo Bofill.
 - a. Prefab units at Marne-la-Vallée in the form of Roman theaters
 - b. At Cergy-Pontoise, a column-clad crescent
 - c. In the Antigone district in Montpellier, between 1978 and 2000, he realized the consummate Postmodernist environment. The major square took the outline of Bramante’s plan for St. Peter’s, while adjacent to it stood a stadium-shaped plaza with the proportions of Piazza Navona.
- 8. In opposition to the dull urban settings of Modernism, Postmodernism attempted to generate lively urban fabric.
 - “Contextualism,” by which architects attempted to respect the scale, typology, and materials of the traditional city, gained full sway in the replanning of Berlin.

II. MULTINATIONAL VERSUS MULTICULTURAL PRACTICE

The speed of communications and the ease of travel during the late 20th century encouraged a new phenomenon: the multinational architect. Within multinational development, Japan played a unique role in creating an autonomous architectural culture that could compete with Western practices.

- A. The Age of Museums and Star Architects
 - 1. After World War II, the commissioning of outsiders became a common practice.

- a. Large American firms set up branch offices in major cities and offered complete design services.
 - b. Only the commission for museums, which assumed the symbolic status of cathedrals, remained beyond the grasp of multinational firms, their design went to a select group of star architects.
 - 2. The late 20th century became the golden age of museums.
 - a. Wright's Guggenheim Museum in New York, Mies's New National Gallery in Berlin, and Kahn's Kimbell Art Museum in Fort Worth.
 - b. Hundreds of new museums cropped up after 1975, beginning with the addition to the Neue Staatsgalerie in Stuttgart by James Stirling and Michael Wilford and the High Museum of Art in Atlanta by Richard Meier.
 - i. The contextualism of Stirling's museum, which deferred to the existing Beaux-Arts wing on one side and allowed visitors to walk over its roofs to a neighborhood behind, was completely absent from the High Museum, which stood in isolation.
 - c. A raft of spectacular museums followed.
 - i. In Mérida, Rafael Moneo's Museo de Arte Romano
 - ii. In Paris, Jean Nouvel's Institut du Monde Arabe
 - iii. In Houston, Renzo Piano's Menil Collection
 - 3. Some new museums struggled against their sites.
 - a. Arato Isozaki's Los Angeles Contemporary Arts Museum
 - b. In Rotterdam, Rem Koolhaas's Kunsthall
 - c. Peter Eisenman's Ohio State University's Wexner Center
 - 4. The star system and the new demand for museums allowed architects whose work had been mostly theoretical to realize their potential.
 - a. Aldo Rossi at the Bonnefantenmuseum in Maastricht
 - b. Robert Venturi and Denise Scott Brown added the Sainsbury Wing (1991) to the National Gallery in London, creating a synthesis of the duck with the decorated shed.
 - 5. Contemporary museums sponsored some of the most adventurous formal exercises of the times.
 - a. Steven Holl succeeded in transferring metaphors from the sciences to his first large project the Kiasma, or Nykytaiteen Museum, in Helsinki.
 - b. Daniel Libeskind finally got his chance to build such complexity at the Jewish Museum in Berlin after two decades of scribble-like projects.
 - c. Zaha Hadid, famous for her Neo-Constructivist graphic projects, designed several museums at the end of the 1990s, including the MAXXI in Rome.
 - i. This dazzling parade of museums culminated at the end of the century with the scudded, titanium-clad Guggenheim Museum in Bilbao by Frank O. Gehry.
 - ii. In contrast to Gehry's wild scenography, Swiss architect Peter Zumthor completed during the same year a paragon of understatement, the Kunsthaus in Bregenz.
- B. High-Tech: Buckminster Fuller's Progeny
- 1. During the 1960s, the American engineer R. Buckminster Fuller (1895–1983) inspired a movement to maximize the efficiency of building technologies.
 - a. Calculated that the world collectively wastes 90 percent of its resources due to poor design.

- i. The Dymaxion House.
- b. Fuller pursued "tensegrity" as the solution to structural efficiency.
 - i. The geodesic dome.
- c. The British architects Norman Foster and Richard Rogers came to the United States to study with Fuller at Yale in 1961.
 - i. Their research culminated in the two major expressions of High-Tech in the mid-1980s.
 - ii. Foster's Hong Kong and Shanghai Bank, and Roger's Lloyds of London.
 - iii. Foster also pursued less structurally expressive strategies in such projects as the Willis Faber & Dumas Building in Ipswich.
- d. The Spanish engineer Santiago Calatrava diverged from High-Tech to develop a personal language of biomorphic structures.
 - i. The Alamillo Bridge in Seville
 - ii. The Stadelhofen Station in Zurich
 - iii. The Lyon Satolas Airport
 - iv. The City of Science in Valencia

 - v. Calatrava created biomorphic exoskeletal structures, pursuing the search for structural efficiency found in nature.
- e. The evolution of High-Tech toward a biomorphic aesthetic guided the work of the London-based Future Systems led by Jan Kaplický and Amanda Levete.
 - i. The Selfridges Building in Birmingham
 - ii. While Fuller's ideals to save the world through the increased efficiencies of well-made machines were at its origins High-Tech evolved into a style that proposed the beauty of technology rather than its utility.
- f. The architectural profession was one of the first to be affected by new computer technologies.
 - i. CAD eliminated the tedious reproduction of drawings through graphic programs.
 - ii. Further programs for rendering and analysis have made computer simulations, or virtualism, almost as important as real environments.
- g. The transition from High-Tech to computer-derived biomorphic designs influenced the development of Japanese architect Toyo Ito.
 - i. His cylindrical Yokohama Tower of the Winds and the blimp-shaped Egg of the Winds in Tokyo, in which he integrated light-perforated aluminum structures and multimedia, were ephemeral products of High-Tech.
 - ii. In the Sendai Mediathèque (2001), Ito invented with avant-garde engineer Mutsuro Sasaki a biomorphic structural solution

generated by computers, which they call "flux" structures inspired by the swaying of underwater seaweed.

C. The Architectural Consequences of Petroleum

1. Petroleum surpassed coal as the prime source of energy by the mid-20th century.
 - a. Petrol literally fueled the sprouting of high-rise cities, suburban sprawl, and the rapid development of oil-rich nations.
 - b. The hermetically sealed structures built at the point of petroleum import, and the instant cities stocked with equally high-entropy structures at the points of export, characterized the architecture of late 20th-century globalization.
2. Until 1973, the competitive world of multinational corporations spurred the race not only for the world's tallest building but also for the most energy-consuming structure.
 - a. 100-story John Hancock Center.
 - b. 110-story Sears Tower.
 - c. 110-story twin towers of the World Trade Center.
3. The possibilities of total climate control through cheap energy led to such hermetic architectural packages as Pennzoil Plaza in Houston.
 - a. The works of architect-developer John Portman best represented the high-entropy way of life, as colossal glazed volumes sheltering majestic voids.
 - b. From the initial Hyatt Regency in Atlanta's Peach Tree Place with its soaring twenty-story atrium animated by transparent elevators, he went on to create other spectacular hotels.
4. All of these high-entropy projects were conceived before October 1973, when the Yom Kippur War in Israel led to the first energy crisis for the West.
 - a. While the continued rise in energy costs during the 1970s led to stagnation in the U.S. building industry and boosted the research on energy-conscious design, it simultaneously fomented a building boom in the oil-producing countries.
 - b. Because of the lack of professionals in these countries, most of the significant new buildings came from Western or Japanese offices.
 - c. The only country in Southwest Asia with a surplus of architects was Israel.
 - d. Many Americans had worked in the region before the oil embargo.
 - i. TAC, an office founded by Walter Gropius in Boston, designed the extensive campus of Baghdad University.
 - ii. A surprising difference in approach occurred after 1973, when some of the multinational offices became more considerate of environmental factors.
 - iii. Gordon Bunschaft of SOM invented a passive solar skyscraper, the National Commercial Bank.
5. The most poetic translation of the nomadic heritage of the region occurred at the King Abdulaziz Airport, known as the Hajj Airport, in Jeddah, Saudi Arabia.
 - a. Designed by SOM's engineer Fazlur Khan as a series of tents, it can accommodate over a million pilgrims per year during the six-week *hajj* season in Mecca.
6. One significant modern project in Egypt, the Bibliotheca Alexandrina in Alexandria stands against the trend of extravagant energy use.
 - a. The natural energy advantages coming from the sunken structure, the thick southern wall, and the natural daylight through the sloping roof resulted in optimal comfort without mechanical assistance.

7. At the turn of the 21st century, the vanity of owning the world's tallest tower passed to the source of petroleum.
 - a. The skylines of the Persian Gulf cities of Kuwait, Doha, Abu Dhabi, and Dubai sprouted a large crop of glass and steel skyscrapers, most ignoring passive environmental controls.
 - b. In the contest for the tallest structure, the state oil company of Malaysia financed the Petronas Towers in Kuala Lumpur, designed by Cesar Pelli.
 - c. Their 450 m (1476 ft) spires have since been topped by the Burj Khalifa (Khalifa Tower) in Dubai.

D. The Emergence of the Non-Western Architect

1. In 1979, Jay Pritzker created the Pritzker Prize for architecture.
 - a. The first was awarded to Philip Johnson, and over the course of three decades, the prize has with few exceptions gone to Western star architects and a few Japanese.
 - b. In 1980, another architectural prize was founded by Aga Khan IV.
 - i. The award acknowledged multiple projects mostly in developing countries, many of them mosques, and others concerned with heritage preservation districts.
 - i. Hassan Fathy received the first Chairman's award, and later prizes honored non-Western architects.
 - c. The difference in the two awards programs underlines an obvious divergence in values: the Western prize promotes celebrity careers, while the non-Western one favors the quality of places and communities.
2. Contemporary architecture in Japan provides one of the few cases of resistance, showing a modern, non-Western approach to design.
 - a. Japanese architects pursued their own approach to form.
 - i. Kenzo Tange, one of the four Japanese architects to receive the Pritzker Prize, prevailed as the leader of an independent Japanese Modernism from the 1950s onward.
 - ii. Tadao Ando, one of the few famous Japanese architects not connected to Tange, drew inspiration from the cosmic void in Zen gardens.
3. A decade later in South Korea, a similar development of an autonomous modern architecture took place.
 - a. During the 1970s Kim Swoo Geun promoted a cultural synthesis of arts and architecture.

- i. His most accomplished collaborator, H-Sang Seung, continued to develop a new Asian alternative.
- 4. Taiwan emerged during the 1980s in the same economic updraft that favored Korea.
 - a. The office of C. Y. Lee created the Hong Kuo Business Center in Taipei.
 - b. Reigned for three years as "world's tallest," a 101-story structure, rising pagoda-like from its base as a succession of eight, eight-story stages with flaring eaves separating each stage.
- 5. Such literal use of Chinese iconography has been extensively imitated for the crowning elements on the thousands of skyscrapers built during the turn-of-the-century building boom in Beijing, Shanghai, and Shezhen.
 - a. Western and Japanese architects arrived to create entire new cities.
 - b. A few small offices emerged as a new wave of local culture, attempting to establish a modern Chinese architecture that comprehends the essence of traditional design without falling into the trap of iconographic kitsch.
 - i. Yung-Ho Chang opened the first private studio in Beijing in 1993.
 - ii. Wang Lu in Beijing designed the Museum at Tiantai.
 - iii. Wang Shu, of Hangzhou, created the Ningbo Historic Museum.
 - c. The new generation of independent Chinese architects has attempted to recuperate the subtle scale of the traditional Chinese environment.
 - i. Ai Weiwei contributed the "bird's nest" woven with steel flanges to cover the Olympic Stadium in Beijing.
- 13. An Afro-centric modern architecture has been slow to emerge.
 - a. Egyptian architect Hassan Fathy argued for a return to traditional building techniques.
 - b. The Bank of West Africa commissioned several projects that draw on African traditions.
 - i. Pierre Goudiaby Atepa designed two of their headquarters.
 - ii. Wango Pierre Sauwadogo designed the same bank's headquarters in Ougadougou, Burkina Faso.
 - c. Some of the more insightful works in Africa have come from Western aid.
 - i. Laszio Mester de Parajd attempted to create modern works using mud walls.

- ii. Heikkinen and Kommonen created the Kahere Eila School for poultry farming in Kindia, Guinea.
- d. African architecture has found its first hero with the success of David Adjaye, born of Ghanaian parents in Tanzania and educated in London.
 - i. Acclaimed for his Dirty House (2002) and the Idea Store library (2005) in Whitechapel
 - ii. Recently awarded the commission for the National African-American Museum in Washington, D.C.
- e. Most of the large cities in South America, like those in Africa and parts of Asia, are being pulled in all directions by informal shanty towns.
 - i. At the beginning of the 21st century, more than 50% of the world's population lived in urban situations, and 30% of these, over a billion human beings, in shanties.
 - ii. "Sites and services" programs.
 - iii. Argentine architect Miguel Angel Roca (b. 1940) created a series of public buildings, cultural centers, and parks in his home city of Cordoba, Argentina, that attempted to focus development as a civic process.
 - 1. He continued a similar program in Bolivia by inserting a series of monumental public health centers.
- f. During the 1990s, Medellin, Colombia became one of the most violent cities in the world.
 - i. Mayor Sergio Fajardo instituted a widespread program of civic centers with libraries and public spaces, establishing a new sense of order and responsibility amid lawless urban sprawl.
 - 1. The Santo Domingo Library in the Parque España neighborhood, designed by Giancarlo Mazzanti.

III. TOWARD AN ECOLOGICAL WORLDVIEW: ARCHITECTURE IN THE AGE OF GLOBAL WARMING

It is increasingly apparent that modern architecture and urbanism have contributed substantially to the rapid alteration of the planet's climate. The demand for "sustainable" environments has infused architecture with a new functionalist imperative to reduce both the consumption of fossil fuels and the emissions of CO₂ gases.

A. Land Architecture

- 1 Land architecture emerged as a symbolic response to the environmental crisis of the late 20th century.

- a. Many architects treated their buildings as landscapes, returning to the land and local materials.
 - b. The precursors of land architecture coincided with the first atomic bombs and their subsequent potential for nuclear overkill.
 - i. The palpable fear that the biosphere was in mortal danger led both to activism and artistic acts of redemption.
 - ii. Frank Lloyd Wright designed the Second Jacobs House as a "solar hemicycle.
 - iii. Le Corbusier built several late projects with sod roofs.
 - iv. Alvar Aalto created some of the most appealing precedents for land architecture, such as his 1953 Summer House at Muuratsalo.
 - v. Kevin Roche's Oakland Museum pursued an initial below-grade "bomb shelter."
2. Later works that treat architecture as a landscape related more closely to the land art movement in the arts.
 - a. The sculptor Robert Smithson proposed a geographic vision for works of art that he called Earthworks: *Spiral Jetty* on the Great Salt Lake.
 - b. Michael Heizer made depressions in the desert, culminating in the ambitious excavation for *Double Negative*.
 - c. The Bulgarian artist Christo predicated less damaging methods of land art, performing ephemeral interventions with recyclable materials.
 - d. Running Fence
 - e. Land art crossed into architecture with the Vietnam Veterans Memorial by Maya Lin
 3. Like land art, works of land architecture became inseparable from the landscape, either through addition or subtraction.
 - a. The Dominus Winery in Napa Valley, CA, added to the horizontal landscape of orderly vineyards a long stone wall like that of an agricultural terrace.
 - b. The Dutch office of MVRDV created a long block of offices for the RVU television company in Hilversum that is partly sunk into the site, permitting the grass-covered sloping roof to blend into the lawn of the ground plane.
 4. Many works connected to the renewal of Barcelona during the last two decades of the 20th century fit the trend toward land architecture.
 - a. The Igualada Cemetery is designed as a fissure in the hillside, partly sustained with gabion cages.
 - b. The Archery Range for the 1992 Barcelona Olympics rolled in paraboloid humps from the edge of the ringroad incline, like the folding of land forms.
 - c. The Botanical Gardens of Montjuic was conceived as a series of topographic pleats, articulated by V-shaped retaining walls made from sheets of Cor-ten steel.
 - d. Farther afield in Catalonia, RCR Arquitectes emulated the bold steel forms of the sculptor Donald Judd.
 - i. Bell-Lloc winery
 5. One approach to land architecture juxtaposes fragments of a strong architectural order against the flowing forms of the land.
 - a. The neoclassical Nelson Atkins Museum of Art in Kansas City is a series of enigmatic opaque light boxes popping enigmatically out of a grass-covered knoll covering the underground galleries.
 - b. Tadao Ando's Chichu Art Museum on Naoshima Island pushes a series of randomly scattered pure concrete-lined voids through the surface of the grassy hillside bringing light to three-level halls beneath.
 - c. The Thermal Baths at Vals are subtly integrated into the slopes of a spa town in the Swiss Alps, blending the planted roof effortlessly into the hill.
 6. Peter Eisenman progressed from an architect obsessed with geometric overlays, to one fascinated by topographic patterns.

- a. The City of Culture in Santiago de Compostela, begun in 1999, covers a site as large as a traditional city with undulating volumes that intermingle with folded landforms.
 - b. In the Monument to the Murdered Jews of Europe, he erected 2,711 sarcophagus-size squared-off slabs at differing heights across an entire block in the city center.
 - 7. Renzo Piano purposely toned down the exposed technology in his projects to devote more attention to landscapes.
 - a. For the Schlumberger Headquarters in Paris, he renovated old industrial buildings into offices, lining the court with a superb garden by Alexandre Chemetov, and placed the three-level parking garage under a densely planted, artificial hill.
 - b. His Jean Marie Tjibaou Cultural Center in the South Sea island of New Caledonia looked to local *kanak* traditions in the design of ten hut-like apses, clad in double layers of wooden poles, amid the trees on a small peninsula.
 - c. At the California Academy of Sciences in San Francisco's Golden Gate Park, Piano posed a single, planted roof with seven bulging knolls on top of slender steel colonnades, wrapped with photovoltaic pergolas.
 - 8. Land architecture, either through digging into or rising out of the ground, keeps a building from being seen on its own.
 - a. It interjects a symbolic gesture of the return to the land while promising the reconciliation of the artificial environment of architecture with that of nature.
- B. Architectural Responses to the Ecology Question
 - 2. In 1962, Rachel Carson published *Silent Spring*, interjecting the ecology question as a political issue.
 - a. Architects did not generally recognize the connection of architecture and urbanism to the ecology question until the 1973 oil embargo.
 - i. The ensuing energy crisis led to energy-conscious mandates and legislation for material changes, such as more efficient insulation.
 - ii. The governor of California, Jerry Brown, appointed one of the leading spokesmen for ecological architecture, Sim van der Ryn, as state architect, resulting in a series of energy-efficient office buildings.
 - 3. The awareness of urbanism as the key to a sustainable future began to take precedence.
 - a. Cars contribute to the problem
 - b. Green urbanism involved rethinking infrastructure, replanning neighborhoods for self-sufficiency and density, and revising the distribution of resources.
 - c. Peter Calthorpe's *Next American Metropolis* (1993)
 - i. His 1990s regional plan for Portland, OR.
 - ii. Zaha Hadid's Hoenheim-nord intermodal station (2001) on the outskirts of Strasbourg.
 - 4. Curitiba, Brazil, became the first city to effect comprehensive ecological policies.
 - a. More than 80 percent of Curitiba's three million inhabitants use public transportation.
 - 5. Freiburg in southwestern Germany became Europe's most progressive city in terms of "green" management.
 - a. Has encouraged solar industries and the widespread use of photovoltaic panels on the top of public structures like garages and stadia.
 - b. Densely arranged apartments constructed with sophisticated insulation, natural materials, and a collective heating system using biomass fuel.
 - c. More than 70 percent of the residents received a tax incentive to not own automobiles.

6. Bill Dunster created BedZED as a pilot project in the suburbs of west London to demonstrate an optimal model for an urban block.
 - a. Built the project on a brown field site.
 - b. The densely set rows combine good insulation, solar orientation, triple-glazed windows, a biomass-fed furnace, wind pipes for ventilation, and planted roofs with recycled rain water.
 - c. Car-sharing electric cars
 - d. Such alternatives as BedZED have become competitive with market-rate housing and cut as much as 80 percent of an individual's energy use.
7. For developing countries a different model was proposed at the Barefoot College, a village in the arid region of Rajasthan, India.
 - a. Revived Gandhi's principles of economic justice, nonhierarchical life styles, and self-sufficiency
 - b. Produces intermediary technologies, such as solar cells and rain water conservation tanks, for use in rural areas that lack power and water.
 - c. The lesson of living well with less and producing enough energy to be self-sufficient can reduce a sub alternate area's dependency on outside aid.
8. Some argue that if advanced technology caused global warming, it will also be part of the cure for it.
 - a. The higher the technology, however, the more it is capital intensive.
 - i. Norman Foster's pickle-shaped high-rise in London built for Swiss RE insurance.
 - ii. Most buildings would be more sustainable simply through correct solar orientation and better insulation.
 - iii. Dutch architect Ton Alberts pursued an integrated approach at the NMB Bank in the Bijlmermeer suburb of Amsterdam.
 - b. Sustainable buildings need not appear organic.
 - i. The Burton Barr Phoenix Central Library. Designed like a colossal breadbox, integrating active and passive solar technologies.
 - c. The expense and complexity of the NMB Bank and the Phoenix Library required a high degree of financial and political support.
 - i. "Appropriate technology" related to the limits of resources that condition a project.
 - ii. The Australian architect Glenn Murcutt has been particularly careful in his work to conserve resources and not use more technology than necessary to achieve a comfortable and sustainable environment.
9. The ecology question has become a global discourse.
 - a. Positive change at the global level can come only from collective and cumulative actions of the sort promoted by the Kyoto Accords and Agenda 21.
 - b. Models of sustainable environments need to come both from the high economic zones and from developing situations, where people are still connected to traditional technologies.
 - i. Primary School in Gando