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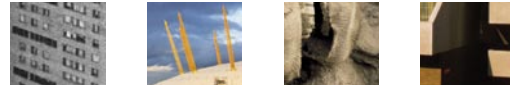
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Photo Essay: "Unintended Consequences"  
by Hubert Murray AIA, RIBA

Pages 28-33

# Unintended consequences

A catalogue of catastrophes  
by Hubert Murray AIA, RIBA



From Prometheus to Faust, and from the cathedrals of the Middle Ages to London's Millennium Dome, Western culture is replete with the myth and the reality of striving beyond the norm, wagering all against the risk of simple failure or abject disaster. As many architects know, success and failure are both the children of ambition, each an education, sweet or bitter. Working up the scale from the mildest of unintended outcomes to the most egregious catastrophe, a taxonomy of disaster quickly emerges.

First there are the **magisterial misconceptions**, those projects ably executed but wrongly conceived. Some are misconceived within their own terms — France's new *Bibliothèque Nationale* comes to mind with its stacks in the air and reading rooms in the basement. Then there are those that fail for having been overtaken by events in the changing world about them. As Emily Thompson points out in her brilliant *Soundscape of Modernity*, Radio City Music Hall in Rockefeller Center was the finest technological realization of electro-acoustic auditorium design of its time. When it opened in 1932, however, it was ignored by audiences and critics alike as being "thoroughly characteristic of the pre-1929 age of elephantiasis and vulgarity" and the "most expensive white elephant in the world."

**Public embarrassments** refer mainly to bureaucratic blunders, usually concerning budget and schedule, but without fatality. Examples abound: the Sydney Opera House and the Channel Tunnel were each wildly over budget and behind schedule. Bearing in mind that these large projects are often deliberately low-balled so as not to frighten off investors or taxpayers, the short-term anxieties of time and money quickly vanish in the mists of time if the completed project serves its purpose well. Indeed it is the low-cost and quickly executed projects for which we repent at leisure.

The **lethal error** is the type of disaster caused primarily by a technical mistake leading to actual or potential loss of life. A recent example is the 2004 collapse of the roof at the Charles de Gaulle airport (causing four deaths and three injuries), due to technical error and organizational failure. "Near misses" in this category include London's Millennium Bridge, which started swaying when

crowds walked on it; and New York's Citicorp Center, whose initial structural vulnerability to strong winds was described in Joe Morgenstern's now-classic 1995 *New Yorker* story, "The Fifty-Nine Story Crisis." Both have been fixed without loss of life, and for his candor, Citicorp engineer William LeMessurier is now considered a model of professional ethical behavior.

Beyond the physical failure of individual structures there are the **social disasters** enshrined in the urban clearances of the 1950s and '60s, the single-minded social engineering that was visited upon the urban poor across the world. In Europe, the devastation of wartime bombing was both catalyst and opportunity for urban renewal on this vast and alienating scale. In the United States, it was the migration into the big cities for the postwar industrial boom that offered both the impetus and the occasion for providing housing in such massive quantities. Modernism carried with it the mission for social cleansing by eradicating the slums and relocating entire communities either to heroic new projects within the city or to the suburbs.

At the top of the heap is disaster on the grandest scale, the **environmental catastrophe** that promises death and destruction at a regional or continental scale. The Aral Sea of northern Uzbekistan was sucked dry by the Soviet regime that used it as a reservoir for irrigating the vast hinterland for cotton. Africa's Lake Nyanza (Lake Victoria) is a sump of social, economic, and ecological pestilence following the introduction of the omnivorous Nile perch. Southwest Utah and vast swathes of Nevada are irreversibly damaged by radiation from nuclear testing and dumping.

The lexicon of disaster conveys variations of *degree* and of *kind* reflecting at once *consequence* and *intent*. While the former is more or less quantifiable in terms of the number of fatalities or the scope of ruination, the latter is beyond measure except in units of arrogance, hubris, greed, ignorance, and incompetence — the coin of the great tragedians. In a fragile biosphere, the distance between misconception and catastrophe has grown alarmingly short.

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## Magisterial Misconception



France's new **Bibliothèque Nationale** (above left), located in La Défense, at the east end of Paris, opened in 1996. The four book-like, L-shaped towers accommodate the stacks of 10 million volumes, exposing the books to direct sunlight. The reading rooms surround an inaccessible courtyard garden below grade. W.G. Sebald, in his novel *Austerlitz*, delivers a scathing attack on the library for its fundamental programmatic flaw — the erasure of memory.

**The Cutty Sark** (above right), the finest and fastest clipper ship of its day, designed to sail between England and China, was launched on November 23, 1869 — six days after Ferdinand de Lesseps opened the Suez Canal to the relatively shallow-draft steamships that gained an instant advantage over sail.

The Anglo-French **Concorde** supersonic jet (left), conceived in 1962 and launched into service in 1976, arrived at the dawn of the environmental movement, which severely limited its operations because of noise, damage to historic structures, and destruction of the ozone layer. The jet's wings were effectively clipped, restricting it to limo service for the transatlantic *überklasse*.

## Public Embarrassment



In 1957, Jørn Utzon's design for the **Sydney Opera House** (top) was projected to cost AU\$7.2 million and to be completed in 1963. It actually cost AU\$102 million and was completed in 1973. A *World Architecture* magazine survey in 2007 reported the Sydney Opera House as the architectural profession's "favorite building."

**The Millennium Dome** in London (bottom), an engineering marvel (the entire structure weighs less than the air it encloses), was a politician's fantasy, designed to recapture the glory of the Festival of Britain of 1951. The crown of "Cool Britannia" was finished on time and more or less on budget but was a case of a building all dressed up with nowhere to go: only half of the projected number of visitors showed up.

PHOTOS: THIS PAGE: TOP, CORBIS; BOTTOM, GETTY IMAGES; FACING PAGE: TOP, CORBIS; MIDDLE, ASSOCIATED PRESS; BOTTOM, FROM THE ROTHERY REPORT/COURTESY OF DUNDEE CITY COUNCIL

## Lethal Error

On May 23, 2004, part of the new roof of the **Charles de Gaulle** airport in Paris (above right) collapsed, killing four people and injuring three. A subsequent report indicated a failure of support struts, a fracture in the shell's edge beam, and the inherent weakness of the long-span shell. Technical issues apart, a critical failure was in the monolithic design build organization in which the owner, designer, and construction manager were all part of the same team, with no third-party review of design or construction protocols.

The **Hyatt Regency Hotel** in Kansas City, Missouri (middle right) was designed with an atrium penetrated by four suspended walkways. On July 17, 1981, in the middle of some festivities, the second- and fourth-floor walkways collapsed, leaving 114 dead and over 200 injured. The ensuing enquiry revealed that the design of the hanger rods had been changed by the fabricator without checking or formal approval by the engineer. It also revealed that even the original design had been inadequate.

The collapse of the **Tay Bridge** in Scotland (below) on December 28, 1879 resulted in a passenger train falling into the estuary below with a loss of 90 lives. An official enquiry concluded that the recently completed bridge had been constructed with substandard materials and had not been braced for wind. Today, the tragedy is noted for a contemporary poem on the subject by William McGonagall, memorable chiefly for the concluding lines of advice: "For the stronger we our houses do build, / The less chance we have of being killed."



## Social Disaster

**Thamesmead** (right) is a “new city” nine miles from Central London. Designed for 50,000 residents by the Greater London Council and started in the late 1960s, it soon became such a by-word for social morbidity that Stanley Kubrick chose it as the set for his study in nihilism, *A Clockwork Orange*. Impediments to success included garages in lieu of ground-floor units and the pervasive and unremitting use of concrete. Moreover, the population had been evacuated wholesale from various locations in Central London without any serious attempt by the authorities to maintain the residents’ old social ties or to create new ones. Privatized under Thatcher, Thamesmead is now a bedroom suburb in (partial) recovery.

**The Pruitt-Igoe** housing complex (below) in St. Louis, Missouri was completed in 1954 and demolished in 1972. The complex consisted of 33 buildings of 11 stories each, containing 2,870 apartments that were originally planned as segregated housing — African-Americans in Pruitt and whites in Igoe. The 1954 Supreme Court verdict in *Brown v. The Board of Education* deemed segregation unconstitutional, so Pruitt-Igoe opened as an integrated project. Within two years, nearly all the white residents had left. Bedeviled by the poverty of the remaining residents and the dangers and inconvenience of its skip-stop elevators, the complex was largely abandoned by the mid-'60s.



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## Environmental Catastrophe



The US military controls 4 million acres of land and 70 percent of the airspace in **Nevada and southwest Utah** (above), and has been using this part of the country as bombing target and ammunition dump for over 40 years. The devastated landscape, heavily irradiated with human and animal casualties, is the subject of the grim photographic portfolios of Richard Misrach (*Desert Cantos*, above) and members of the Atomic Photographers Guild.

**The Aral Sea** (left) used to be the world's fourth largest lake. From the 1950s through the late 1980s, the Soviet Union drained the lake to irrigate cotton fields in Uzbekistan and southern Russia. What was once a lake is now desert. As a result, temperatures have become more extreme, and windblown salt is devastating both the cotton crops and what towns and cities remain.