

# GOVERNING BY DESIGN

Architecture, Economy, and Politics  
in the Twentieth Century

AGGREGATE

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# 10

## Marginality and Metaengineering: Keynes and Arup



ARINDAM DUTTA

*Why are the good so boring?  
The wicked full of fun?  
And citizens in conflict,  
how do we govern them?  
How can we hit the target  
while aiming East and West?  
And how make people toe the line  
when I know what's best?*

—Ove Nyquist Arup

It may be hard to determine the exact lag in time when hindsight acquires the gray weight of circumspection. Nonetheless, it may not be entirely inopportune to claim that one of the facets of the commercial extravagance of the recently deceased Gilded Age—the burst of financial speculation from the mid-1990s onward to the implausible doldrums of 2008—was the string of commissions meted out to a roster of “signature” architects with more or less one distinct mandate: to churn out iconic, formally arresting, often sinuous objects whose atypicality would create new points of visual focus for the urban environment. The icons were of a piece with dominant neoliberal ideology. In policy (or lack of thereof) terms this iconicism relied on two major funding doctrines: the use of sovereign or federal moneys to privilege particular “primary” cities within each nation-state as privileged attractors of global investment; and for “secondary” cities, given the directed retreat of public money for infrastructure support, to use the “cultural” heft from these icons to raise real estate values (and revenue).

In the process this finite roster of auteurs has come to acquire a kind of brand identity equivalent with haute couture impresarios whose status in the consumerist universe they clearly envy: Rem Koolhaas, Zaha Hadid, Frank Geh-

ry, Norman Foster, Herzog and de Meuron, and Daniel Libeskind. And yet to term these auteurs as “authors” of these technologically intricate follies of the new global urban realm would be an overstatement. Name a major iconic commission of the past two decades—whether it be the CCTV tower, the Bird’s Nest, or the Water Cube built for the Olympics in Beijing, or that city’s gargantuan new airport, the V&A extension, Seattle’s Central Library, MIT’s Simmons Hall. Note that very little of their signature flourishes would have been realized without the hybrid consulting expertise of a single firm whose practice now straddles across *every one* of the countries in which these architects may be located or may receive commissions: Arup Associates. Arup’s global presence on the building engineering front increasingly means that in the current spate of iconic architecture, it does not matter *which* so-called star or signature architect sketches out *what* scheme for *where*. What is reasonably probable is that Arup will design and build it and will be a key arbitrator in modifying design to impinging conditions, whether in terms of budgetary management or local bylaws, technological feasibility, or environmental parameters. The “signature” here is markedly a corporate one: the architect is merely a boutique practice reliant upon—if not in effect nestled within—a much larger global delivery operation to service its clients.

Arup’s professional reputation is exactly as pronounced as the prevalence of this genre of urban object, and it goes beyond so-called architecture to embrace “public art,” manifestations as much of the Potemkin structures of speculative finance: from the twenty-meter-high *Angel of the North* sculpture in Newcastle-Gateshead to the Anthony Caro–initiated Millennium Bridge in London. Not to forget, also, the enduring collaboration between Arup’s Advanced Geometry Unit and Anish Kapoor, to which is owed both the latter’s *Marsyas* in the (also Arup-designed) Tate Modern turbine hall for the 2002 Unilever series, “The Bean” in Chicago, and the Arcelor Mittal Orbit Gallery at the London Olympics.

Architectural, artistic, and technological frames of the imagination may be said to be underpinned by a kind of “economic rationale” that guides presumptions about the use of materials as the organization of society. For instance, the “modernist” assumption in aesthetics and engineering that dictated on the one hand an “honesty”—organic or industrial—of material usage and on the other rationalism in plan disposition is epistemically congruent with basic dicta in economics regarding the scarcity of resources, characterized by John Maynard Keynes as the “classical” tendency for thrift. Modernist proposals from Ebenezer Howard’s Garden City to Frank Lloyd Wright’s Broadacre, from Toni Garnier’s Cité Industrielle to Le Corbusier’s Ville Contemporaine contained elaborate prescriptions, implicit and explicit, as to the basis and limits of income, ownership, and hierarchy of labor—all of these economic propositions being without exception steeped in the classical view. Arup’s origins in Britain

as technological consultant to key modernists in the immediate prelude to the Second World War, guided by the protean sensibility of Ove Arup, might well be cast in this classical bias.

Arup's expertise in the new global iconicism of the 1990s might be described as diametrically opposed to the modernist and engineer's assumption of thrift: these speculative structures, in both form and content, indicate a shift as much in the theologies of the aesthetic as in technological concerns on optima. In fiscal terms this reversal has been generally attributed to the rise of monetarist doctrine, and, unilateralism in monetary policy practiced by the United States and the United Kingdom, after the 1970s.<sup>1</sup> In that period that the role of the aesthetic might be undergoing a kind of displacement was observed at the very beginnings of this era in the various debates on "postmodernism." Various theorists of the time noted how in "post-Fordist" capital a certain mobilization of the aesthetic might be seen to be translating the modus of the *agonistic* basis of political consent to one of *pleasure*, more specifically, libidinal desire. Arup's transformation from a largely "supportive" engineering firm into a global turnkey operation—its business comparison should be drawn with Halliburton or McKinsey or PricewaterhouseCoopers rather than SOM or KPF—in many ways exemplifies a similar shift from the classical framing of technology. This chapter looks at the history of Arup to discern how the shift in monetary and fiscal outlooks is necessarily caught up with corresponding shifts in aesthetic and technological conceptions: the infrastructural mandate to *design pleasure*, or venues for pleasure, as it were, and the subsumption of the aesthetic as the privileged vehicle of pleasure rather than of an agon.

Arup's international growth, riding on the back of British financial investment abroad—into a company today boasting nine thousand staff working in eighty-six offices in more than thirty-seven countries and ten thousand projects running concurrently—rests significantly on its ability to operate as a unique kind of "para-statal" presence offering technological and legal consultancy to different levels of different governments. Examples are its 2004 report to the Blair government to "determine if the current statutory requirements for publicizing applications for planning permission, listed building and conservation area consent are effect and *value for money*"; its full-service master plan for Dongtan Eco-City, a "sustainable" urban counterpart to deflect criticism for Shanghai's Pudong; and more recently, the services rendered to Indian Railways, the world's biggest corporation in terms of the number of employees, to upgrade its aging colonial infrastructure and facilities in line with India's new economic presence on the global stage.<sup>2</sup> The iconicism that we have laid out above is literally the front end of an infrastructural transformation whose impetus is to transform the modalities of governmentality as such: the manner in which the delivery of goods and services by the state produces the rationale

for transforming subjecthood itself. We may use Rem Koolhaas's description of Arup's expertise quite against his grain: Arup's "metaengineering" consists in that its remit goes well beyond the mere manipulation of statistics and materials to that of accountancy, financial consultancy, and, most important, the drafting of legislation, in Koolhaas's words, "a form of emancipation—now exploring in a kind of science fiction, *meta-engineering* as a total answer to everything."<sup>3</sup> What we have here is a technopolitics that operates in enclaves somewhat remote from the normal realm of politics but nonetheless will heavily determine the course of our future politics.

To understand the convergence between authorial signature, corporate intervention, and the libidinal economy, between the governmental impetus for territorial restructuring and the iconic, let us take as an instance a piece of Arup's home territory, the South Bank of the Thames River in London. Since the late 1990s, several projects have been constructed on the ancient bank of the Thames: the Millennium Bridge and the Tate Modern, the London Eye, and the headquarters of the Greater London Authority and the mayor of London (City Hall). Standing on this bank, one can look across the river where these edifices appear to indicate an iconic kinship with the Swiss Re Bank (the "Gherkin") on the one hand, and opposite the Eye, the rococo Embankment Place over Charing Cross station. Arup designed each one of these buildings. The South Bank is also home to Royal Festival Hall, for which the architects had initially approached Ove Arup on the eve of the Festival of Britain but were overruled by the London County Council. Arup designed the pathways and bridges for the festival. In the mid-1960s, when the Royal Festival Hall was integrated into the more comprehensive South Bank Arts Centre, including the Queen Elizabeth Hall and the Hayward Art Gallery, Arup was the firm called on to design the new complex.<sup>4</sup> Arup's relationship with the planning of this site dates back to 1972, when it organized its first Thames-side Symposium to consider options for future development of the area, following it up two decades later with a full-fledged "strategic" plan in 1995.<sup>5</sup>

Let us then go to the following pronouncement by one of the greatest economic minds of the twentieth century, the content of which may appear peculiar to those unfamiliar with his biography, economists and architects alike:

Taking London as our example, we should demolish the majority of the existing buildings on the south bank of the river from the County Hall to Greenwich, and lay out these districts as the most magnificent, the most commodious and healthy working-class quarter in the world. The space is at present so ill used than an equal or larger population could be housed in modern comfort on half the

area or less, leaving the rest of it to be devoted to parks, squares and playgrounds, with lakes, pleasure gardens and boulevards, and every delight which skill and fancy can devise. Why should not all London be the equal of St. James's Park and its surroundings? The river front might become one of the sights of the world with a range of terraces and buildings rising from the river. All our architects and engineers and artists should have the opportunity to embody the various imagination [*sic*], not of peevish, stunted, and disillusioned beings, but of peaceful and satisfied spirits who belong to a renaissance.<sup>6</sup>

Those familiar with the theoretical preoccupations of this writer will recognize the signature emphasis on *pleasure*. The extract is from an article titled "Art and the State" by John Maynard Keynes, published in the BBC's print organ, *The Listener*. It would be important here to note the date of this publication: August 26, 1936. Within five years of this writing, as Hitler's bombers relentlessly pulverized the silhouette of the city, proposals for the replanning and reconstitution of the city would become the wartime theme du jour, notably by the MARS Group (in which Ove Arup and Berthold Lubetkin were participants) and the "townscape" enthusiast A. E. Richardson, among others.<sup>7</sup>

In 1936, however, this architectural speculation had quite a different import. The exigency that drew forth Keynes's proposal for architectural reconstruction was not the depredations of war but the political aftermath of the Depression. In a way the very invitation from editor J. R. Ackerley to write for the *Listener* speaks to Keynes's extraordinary status in British intellectual life beyond his credentials as an economist, an image consecrated in the popular mind by his transatlantic radio conversations—the BBC's first—with Walter Lippman in June 1933. For this issue of the *Listener*, Keynes was explicitly positioned as the spokesman for British *cultural* policy in an invited international debate on state patronage of the arts; the other invited interlocutors being Goebbels's appointee Staatskomissar Hans Hinkel, Ugo Ojetti from Italy, Victor Lazareff from the Soviet Union, and George Duthuit from France, with Kenneth Clark as the respondent.

This chapter is not the place to rehearse in detail the biographical background by which Keynes came to hold this preeminent cultural position, particularly his membership in the Bloomsbury circle and involvement with the British avant-garde, not to mention his marriage to the Russian ballerina Lydia Lopokova. What is more critical for our purposes is to quickly sketch out how Keynes's aesthetic sensibilities in many ways prefigured his approach to economics, particularly the manner in which both of these draw on a bowdlerized kind of Freudian "pleasure principle." Keynes biographer Robert Skidelsky has pointed

out that it was not coincidental that his seminal *General Theory of Employment, Interest, and Money* was published the day after his Arts Theatre opened in an alleyway opposite his berth in King's College, Cambridge, in February of 1934. They were, in fact, "two projects, linked by a common feeling, converging at a single moment in time."<sup>8</sup> One of the first plays that Keynes envisioned staging at the Arts Theatre was Henrik Ibsen's *The Master Builder*.<sup>9</sup>

Much of our understanding of Keynes's aestheticism draws from the work of economists and economic historians. Because of this, the *content* of this aestheticism of approach has remained more or less obscure in the eyes of that audience, forming something like an anecdotal or alluring background to the more rigorous elements of the theory. This parochialism may be said to work to their detriment. Those who otherwise spend their time claiming and declaiming the porosities between Keynes's theory in its poetic essence and what his acolyte Joan Robinson called "bastard Keynesianism" or the "hydraulic" flows of John Hicks's pliable IS-LM model might consider that arts policy was the *only venue*—through his establishment of the Fine Arts Council—in fact, where Keynes actually spelled out his conception of state intervention in spheres other than monetary or fiscal policy.<sup>10</sup> If one surveys the archives in this area, the argument that we are about to embark on becomes clear: that for Keynes, *the aesthetic is an exceptional and paradigmatic instance of the motivational forces that drive economic behavior*. To understand this, it would be critical to recapitulate the salient points of the *General Theory* in its relationship both to the genealogy of economic thought in the half-century preceding, particularly within the ambit of the Cambridge school, and the challenges put to it by the political tides loosed by the international rise of Soviet influence on the one hand and the devastation wrought by the Depression on the other.<sup>11</sup>

The *Listener* debate is of a piece with the ideological conflicts shaping up within European capitalism of the interwar years. As arguments for greater state controls, monopoly even, over economic activity from the Communist parties gathered traction after the Depression, especially in relation to the financial sector, Britain's Labour Party stepped up demands for the nationalization of land, voicing a sentiment that went against the bedrock presuppositions of Anglo-Saxon economic thought on the inviolability of private property.<sup>12</sup> It could be argued that Keynes, no particular votary of the landed interest, nonetheless balked at the prospect of legal alienation of land for its psychological effects on economic behavior rather than on moral grounds, a conundrum that he worked out in the *General Theory* through his "euthanasia of the rentier." Keynes's rearguard motions against a Soviet-type state inveighed expectedly against the constraints that Sovietism produced against the economic energies produced by what he believed to be a "natural" pecuniary motive.

The 1926 *Essays in Persuasion* represents a landmark piece of inoculation

against Soviet ideology, where the dampening effect of totalitarian control is countered by speculations as to the appropriate “unit of control and organization” of human society. Keynes argues in favor of a suborganizational level below that of the composite state, “semi-autonomous” bodies on the level of the Bank of England, the universities, and railway companies—entities that are curiously squared off against what he perceived as the tendency of large joint stock corporations to “socialize themselves . . . to approximate to the status of public corporations rather than that of individualistic private enterprise.”<sup>13</sup> This devolution would have the benefit of acting in the interest of the downtrodden while not going to the extreme of awarding them full-fledged political power. “How can I adopt a creed which, preferring the mud to the fish, exalts the boorish proletariat above the bourgeois and the intelligentsia who, with whatever faults, are the quality in life and surely carry the seeds of all human advancement?”<sup>14</sup> That qualitative discernment was the exclusive province of the elite is quintessential Bloomsbury, Lytton Strachey, Virginia Woolf, and others having argued: that aesthetic refinement, *including socialist thought*, essentially requires a life of leisure and contemplation unburdened by the harries of toil.

While retaining this hierarchy of taste, Keynes then proceeded in his masterful defense of “marginalist” economic theory—the domain set out by Leon Walras, William Stanley Jevons, and Alfred Marshall only in the half century preceding—by attacking the theory itself. The enemy to Anglo-Saxon theory here was, apparently, Anglo-Saxon *habit*, and its great bedrock upon which economics had established its core of sound economic behavior: *thrift*. The earning expectations from savings reduced the money supply, since the higher interest rates that savings demanded militated against the cheap availability of money. The propensity to save was therefore directly inimical to investment. Against that habitual bedrock, Keynes promulgated his theory of encouraging the “propensity to consume,” a vaguely psychological tendency that occupies two of the chapters of the *General Theory*.

Much speculation thus goes into the short term: the set of decisions by which a person will invest money now instead of hoarding it for the future. It is here that the state makes a curious entry: as facilitator of enhanced spending in the short term by controlling the interest rate and the cheapness of money through open-market operations, thus positively modulating the “animal spirits” and passions that drive economic engines such as the stock market. In his early, anti-Soviet polemic, Keynes had fended off communism’s censoring of the innate entrepreneurial spirit and the “love of money.” Now, Keynes pointed to this “love of money” itself as the key problem but in a completely different sense. The problem here was the herd behavior in open-market conditions that, in conditions of uncertainty, leads to risk-averse behavior, hoarding money where it should be spent.

Then Keynes had advocated for greater media transparency of economic

operations—“publicity of information—as a resort to reduce uncertainty. The Keynes of the *General Theory* argues exactly in the opposite direction. Now uncertainty is posited as a *good* thing in that it fuels the erratic and risk-intensive behavior that is crucial to the vibrancy of the market. The famed section on “animal spirits” thus argues against a kind of informational transparency that would reduce all markets to “nothing but a mathematical expectation,” thereby dimming the energies stemming from “spontaneous optimism . . . [and] prospects of investment [that] have regard . . . to the nerves and hysteria and even the digestions and reactions to the weather.”<sup>15</sup>

Recount the commonplace organic associations in popular culture of the period relating the Depression to a form of economic malaise and contemplate now the audacity of Keynes’s counterintuition in suggesting that what was commonly perceived as the contagion was itself the cure. With this description of behavioral randomness and profligacy as the principal fuel of invigorative economic behavior, the state was saddled with a very different managerial task. Individual cautiousness about the future created long-term obstructions for those very individuals to acquire the level of wealth that they could, leading to a sort of chronic economic underperformance. In this situation, Keynes’s proposal was to have government’s greater control over the money supply substantially remove the frame of decision making about money from individuals, while leaving actual production and realization of profits to *laissez-faire* and entrepreneurial energies. In a manner of speaking, then, individuals have complete political and economic autonomy and yet are given no better reasonable choice; they are as if condemned to consume as the device that realizes their freedom. In the short term, Keynes argued for a monetary policy aimed at easing negative expectations for the future rather than seeing money merely as a circulating equivalent. By increasing liquidity—literally *writing* money out of nowhere—the central bank would both ease the conditions of risk under which investors chose to spend, and create, through the multiplier effect, a stimulus for new economic activity.

In this move Keynes reconciled within the doctrine an irrefragable anomaly that had proved irresolvable within the ethical frameworks of the political economy: public works. In the old models, the continuing necessity for the state to undertake economic roles otherwise best left to business was both seen as a corrective to cure the inefficiencies of *laissez-faire* doctrine and to militate against it, therefore continually posing a historical contradiction in the otherwise separate public and private spheres as delineated in Anglo-Saxon dogma. The Keynesian theoretical resolution of this contradiction was simple: in the conditions of near full-employment, which was the state’s duty to ensure, state intervention in employment increasingly loses its efficacy, since the heightened consumption stemming from this giveaway that was key to the growth of employment was minimal compared with growth that would stem from relaxing

concerns over liquidity. Public works—defined as the state’s direct intervention into the investment market—was irrelevant in this situation, not because it presented a contradiction but because it was inefficient: “If the Treasury were to fill old bottles with bank-notes, bury them at suitable depths in disused coal-mines which are then filled up to the surface with town rubbish, and leave to private enterprise to the well-tried principles of *laissez-faire* to dig up the notes again . . . there need be no more unemployment and, with the help of the repercussions, the real income of the community, and its capital wealth also, would probably become a good deal greater than it actually is. It would, indeed, be more sensible to build houses and the like.”<sup>16</sup>

Keynes’s views on savings and hoarding were significantly influenced by the theories of anal eroticism espoused by a future entrant into the Bloomsbury group: Freud. Just as in Freud, the relationship to certain motor and neural reflexes bear import for the formation of social “character”; with Keynes, the mechanisms of neoclassical economics, with their emphasis on equilibrium, acquire an organicist supplement in the form of a *managed disequilibrium*.<sup>17</sup> This is the principal import of the *General Theory*: money becomes the agent of disequilibrium. It is both equivalent (as commodity) and nonequivalent (notional, textual supplement mobilizing certain “portmanteau . . . propensities” or desire). The throwaway anti-Semitism about the Jews’ “love of money” in *Essays in Persuasion* reflects a conventional understanding of money where it continues to be treated, in line with Marshall and the other neoclassicists, as an exogenous variable entering the commodity sphere as a quantitative equivalent, to which either prices or the money supply adjusts. By the time of the *General Theory*, it has become a “costlessly created” governing element producing real social effects and assets.<sup>18</sup> By consciously assuming control of this miraculating, *causative* power of money (rather than hewing to it as equivalent), the state’s paternalism is displaced into a thaumaturgical power.

This was Keynes’s ideological masterstroke—the state thus comes to simulate both the conditions of total control and the complete absence of control. The coup de grace against the Marxists was that the state had been restored to a preponderant position, extending its power when criticism of *laissez-faire* had veered to exhortations for the state’s complete monopoly over economic activity. It is this double dynamic that plays through Keynes’s contribution to the BBC’s *Listener*, written six months after the publication of his *General Theory*, and makes the latter’s political import explicit. The principal challenge from the rise of dictators on the continent was the ability of art to preempt political dissatisfaction. In some ways Britons should try and emulate the otherwise “bombastic . . . sometimes extremely silly” pageantry of the authoritarian states of Russia, Germany, and Italy; these events have the potential of satisfying, even if “extremely dangerous, [but if] rightly guided . . . the craving of a public to collect in great

concourses and to feel together . . . [providing] an alternative means of satisfying the human craving for solidarity.” And right there, we find the classical peroration on the hierarchy of the arts, seasoned in the contemporary air of discourse about the proper frames of the public and its self-governance: “Architecture is the most public of the arts, the least private in its manifestations and the best suited to give form and body to civic pride and the sense of social unity.”<sup>19</sup>

With radio upending the classical hierarchies of the arts in providing a tool—again the glance to the propaganda machines being assembled on the continent is palpable—only architecture retained its primacy as a device for building the public morale and collective emotions that theater and opera had offered in the past. By 1943, as buildings were being pulverized at unprecedented rates, it is hard to conceive of Keynes as seeing this as anything less than a positive opportunity, given the long section in the *General Theory* using buildings to instantiate his views on depreciation and reemployment of capital. In the following passages, the overlay between *economic* demand and demand produced from aesthetic and public desire is palpable, and it is impossible not to equate “architecture”—described as a stage for all manner of subsequent activity—in the formulation below to the primacy of the state’s prerogative over monetary control:

The life in this country in the realm of the arts in the realm of the arts flows more strongly than for many a year. Our most significant discovery is the volume of popular demand. . . . But the lack of buildings is disastrous. The theatres, concert galleries, and galleries well suited to our purpose, taking the country as a whole, can be counted in a few minutes. That is where money will be wanted when in due time we turn to construct instead of to destroy. Nor will that expenditure be unproductive in financial terms. But we do have to equip, almost from the beginning, the material frame for the arts of civilization and delight.<sup>20</sup>

Elsewhere, he writes: “If I had the power today, I would surely set out to endow our capital cities with all the appurtenances of art and civilization on the highest standards . . . convinced that what I could create I could afford—and believing that money thus spent would not only be better than any dole, but would make unnecessary any dole. *For with what we have spent on the dole in England since the war we could have made our cities the greatest works of man in the world.*”<sup>21</sup> And yet the selection of the South Bank as the specific venue as the place to adorn the capital city bears an implicit relationship to a key elision within Keynes’s thought that we would be remiss in passing over. Recall the famous sections of the *General Theory* on the “euthanasia of the rentier.”<sup>22</sup>

Keynes compares the land rentier to the “oppressive power of the capitalist

to exploit the scarcity-value of capital,” in their collectivist power as the votaries of “interest” to militate against investment and therefore against the rise of an authentic individualism—its heroes being “the intelligence and determination and executive skill of the financier, the entrepreneur *et hoc genus omne*,” in economic affairs. The euthanasia so announced, that putative blazon for social justice, was in fact a recourse to protect the “existing system” of property rights while hinting at its future obsolescence, by dint of its eventual unprofitability in the face of the increased mobility of money.

The selection of the South Bank as the architectural stage for the reinvigoration of culture and its attendant enthusiasms performs precisely an analogous double move, if one considers it with reference to the specificities of ownership and what has been called the “landed interest” in Britain. It is here, one would argue, where the deepest ambiguities of Keynes’s thought are and would be further revealed given its vicissitudes in the decades to come. If one compares the degree of monopolization of landed property, Britain as a country is more feudal than Pakistan. Fewer people own more tracts of accumulated land than those of Britain’s former colonies which, following Britain’s specific mode of administration therein, have retained a similar neofeudal character. Of the sixty million acres of land in the United Kingdom, the investigative journalist Kevin Cahill has assessed forty million acres of productive land as belonging to just 189,000 families, or about a third of a percent of the population, with obvious implications given the significant agricultural subsidies going into this sector.<sup>23</sup>

The lands of the towns of Bayswater, Kensington, Belgravia, Westminster, Chelsea, and so on, collectively making up the city of London, are no different, showing a consistent pattern of undervaluation for taxation purposes and 125-year leases that militate against the sale of property showing its “true” value. Both the Crown and the Duke of Westminster, whose interests are protected by his real estate firm Grosvenor Estates, own three hundred acres of land each, which in addition to those of a few other families, comprise most of the land in the city other than those given over to railways and the like. In the period leading up to 1945, the “landed interest” of the hereditary peerages and the Crown, protected by the Tory interest, continually fended off calls for nationalization by Labour in the face of sustained economic stagflation, with the Liberal Party—Keynes’s party—occupying the middle ground.<sup>24</sup> In this context the various wartime “townscape” proposals made for the reconstruction of London, emphasizing its traditional squares and gardens as the basis for its rejuvenation, can be said to have been explicitly formulated with the Tory interest in mind.<sup>25</sup> Karl Marx had it right a century earlier: “The Tories in England long imagined they were enthusiastic about the monarchy, the church, and the beauties of the old English constitution, until the day of danger wrung from them the confession that they were only enthusiastic about *ground rent*.”<sup>26</sup>

The preservation agenda was directly a front of the landed interest and continues to be so today. Both Keynes's 1936 proposition to use the South Bank and the Abercrombie plan's "four rings" proposal to decentralize the "crowded center" of London, also proposing the construction of a South Bank complex, implicitly maneuvered around the intransigence of the landed interest in central London, thus abnegating the opportunity arising from wartime destruction used by government in places such as Rotterdam to appropriate private properties for coherent reconstruction. The "radical" plan by the MARS Group equally elided this question at issue, making no mention of the legacies of land in its "close" studies of land use.<sup>27</sup> For Keynes the South Bank proposal was thus literally the recourse to using other incentives instead of augmenting the state's coercive arm through the nationalization of feudal land.

Roger Fry, a member of Keynes's Bloomsbury cohort, uncannily presaged Keynes's sentiments on economic instincts in *The Great State* of 1912, when he wrote: "A great deal of misunderstanding and ill-feeling between the artist and the public comes from a failure to realize the necessity of this process of assimilation of the work of art to the needs of the instinctive life . . . [as patron of art] the Great [socialist] State will live, *not hoard*."<sup>28</sup> Crucially, Keynes imbued the arts with an objective directly linked to the economic function of the state, as a direct psychological trigger for the cheerful propensities and capacities to enjoy the present, essential attributes of the propensity to consume. In other words, the arts were to be a key venue for the manufacture of desire in which the state was to have a key role. The analogy of investment in architecture to making money available to public investment—formerly squirreled away by rentiers and self-denying economic "prudence"—is more than palpable. This is more than substantiated by the fact that architecture and the restriction of the role of government in managing the money supply are played off against the efficacy of governmental intervention manifesting itself in public works or the "dole." If in the decade preceding, Le Corbusier had incongruously pitted architecture against revolution, we can almost imagine Keynes to be distinctly affirming, very much against the Keynesianism that would soon follow in his name: "public works can be avoided."

Thus Keynes's principal rejoinder in terms of policy against the art-based propaganda emanating from the dictatorships on the continent was to place the Arts Council of Great Britain directly under the Treasury, therefore, in theory at least, removing it from political intervention or control of any kind. The mechanisms inherent in this particular arrangement set the administrative paradigm for what came to be known as Keynesian social democracy in general through the "arm's length" management of governmental services and goods. The result was an aesthetic culture formed significantly along Bloomsbury lines, with appointments to the council strongly monopolized by Eton and Oxbridge

graduates, directing an official, latitudinarian modernism in its support of the arts that would in the long run inveigh against the radical art expressions of the “angry young” generation of the postwar.<sup>29</sup>

If the Labour government’s Festival of Britain—almost exclusively held on the South Bank—proved to be “popular,” this was the British public voting with its feet. The subsequent politics of the Labour governments in the British postwar period was a politics relentlessly stymied by the neofeudal preservationism of its landed interests, with successive Tory governments quashing and diluting moves toward comprehensive economic restructuring, including moves in town and country planning, initiated by successive Labour governments. This combative politics, in policy terms, was tacitly played out through a variety of economic proxies—insurance, building bylaws, lending policy, rents, income, entrepreneurial cultures, and infrastructural developments—none of the intransigent stakes of which allowed anything like the ‘carrots’ approach leading to Keynes’s “euthanasia.”<sup>30</sup> Indeed, the centralized land acquisition policies inherent in, say, Alison and Peter Smithson’s Golden Lane Housing project of 1952, precisely forms the background for the introduction of modernism into Britain, an introduction that was consistently belayed, even defeated, by the demand for “preservation” of England golden. Furthermore, “redistributive” governmental intervention in postwar Europe continued to be stymied by the equations of hydraulic Keynesianism, with its strong objections to inordinate deficits on the one hand and opposition from the right, with its exhortations against state prerogative as inherently totalitarian, on the other. The *theoretical* riposte to welfarism within Keynesianism thus mirrored the *moral* objections to welfarism—inveighing against “handouts” and so on—posed by the right.

If modernism was realized, this was only in the singular architectures of the New Towns and school and county buildings built on the margins of a market in property significantly unchanged since the war. The modeling of neoclassical economic doctrine on the assumption of the scarcity of resources, nonetheless, transposed onto the aesthetics of postwar construction a commensurate ethics of scarcity, an “economic” paradigm implicitly posed toward an architecture as if produced in bulk, quite unlike its traditional, bespoke mores. The starkness of the Smithson’s Hunstanton School could be construed as producing the manifesto for this tendency, and on these questions Ove Arup and his firm weighed in heartily, through both policy advocacy and the work of his firm, as well as discussions on standardization and optimization that characterized the dominant discussion of the period. Compare Ove’s argument below to that of Keynes’s above; the difference therein, I would argue, is the difference between Keynes’s own reservations on the role of the state and the *Keynesian* theology of “embedded” liberalism in the design of the postwar state, whose adherents, willing and unwilling, would range from acolytes such as Joan Robinson to con-

servative skeptics such as Richard Nixon (“We are all Keynesians now”). Here is Ove: “There must somehow be power to direct or influence production. The centre of gravity must be shifted from private enterprise to public service. . . . Organization of industry and communications, the planning of towns and agriculture, the extension of social services are all problems which, so far as I can see, cannot possibly be left to private initiative, but which everybody now realizes ought to be tackled in the interest of humanity.”<sup>31</sup>

Both Ove’s involvement with the housing projects of Lubetkin and Tecton, with Maxwell Fry and the MARS Group (as its only engineer), and his demonstrated expertise and wartime contributions in building air-raid shelters, trenches, and the like, made him an ideal client for the tasks of postwar development. His commitment toward “total design” engaged his firm in a plethora of projects—from bus stations to factories to apartment buildings to schools and colleges, both in Britain and its colonial protectorates in sub-Saharan Africa, through Arup’s association with Fry and Jane Drew. Arup’s portfolio in this period also shows a significant interest in heritage and preservation, exemplified in both the design of Coventry Cathedral and restoration of York Minster.<sup>32</sup> Arup’s early international operations, other than the United States, were largely constrained to Britain’s neocolonial theaters of interest: Australia, Botswana, Nigeria, Zimbabwe, Pahlavite Iran (where it designed and executed the curved surface geometry of one of the Shah’s “secular” monuments against a rising political tide) and Hong Kong (through which, following the footsteps of the old colonial engine the Hong Kong and Shanghai Bank, it was to enter China).<sup>33</sup>

With a few exceptions—the HSBC building being one—its clients were dominantly governments, generally the only economic actors with the wherewithal to commission the large-scaled projects for which Arup cultivated its reputation. Much of Ove Arup’s own sensibility can be said to be thus a corollary of the “trade union baronage and Wykhamist intelligentsia” that characterized postwar dirigisme.<sup>34</sup> Commensurate with the financial modus of their inception, the principal engineering and architectural questions of the firm revolved around economies of scale. In its early phase, Arup fully implicated itself in the technological repercussions of this economic impetus, working against the grain of the technological secretiveness of firms on the one hand, thus wastefully duplicating efforts and on the other, against the panaceas of “prefabrication.” Key research problems of the time undertaken by the firm revolved around, for instance, the scale considerations that went into the design of doubly curved surfaces, which necessitated different assemblies of formwork for each construction, as opposed to plane or singly curved surfaces where formwork could be reused.

The accompanying architectural debates about “structural honesty” in building in this period can be said to impeccably mirror the “scarcity” assumptions at

the core of economic thought during the postwar high period of interventional Keynesianism. Ove's thought and writing of the time—as versed in philosophy and Kant as statics and material behavior—is marked by his arguments against architects' conflating their preference for aesthetic “simplicity” with structural honesty, a critique posed pointedly against much modernist dogma of the period. The culprits of this form of myth-making were often the same buildings in which Ove was giving his lectures, the Illinois Institute of Technology buildings, the steel hinges of MIT's Kresge Auditorium, and the internal columns of Coventry Cathedral—the last being an Arup project itself. This from the *Listener*, Keynes's mouthpiece, on July 7, 1955: “The aesthetic programme of the modern movement is hidden away in an excessive admiration for all things technical, for new structural forms and materials, for making full use of all the latest technical innovations long before they are *economically justified*, and for the ‘honest expression’—whatever that may mean—of the structure. So much enthusiasm for the means of building is suspicious, it shows that there is more in it than meets the eye.”<sup>35</sup>

It is important to keep in mind here that while this disassociation is markedly similar to Reyner Banham's deflation of modernist rhetoric, the far more technologically adept Ove, unlike Banham, was in fact arguing for greater autonomy of the aesthetic from the technological. The “machine-aesthetic” is markedly a false premise; for Ove, architecture is *not* bound by any particular technological constraint. In a paper given at Leicester University Arts Festival in 1969, he described the crux for the architect as being “definitely on his own, in an ocean of complete permissiveness and an almost infinite choice of means.”<sup>36</sup> Thus the architect faced with a problem will receive no help by looking up a book on architecture; while the engineer who has forgotten a formula for stresses in a beam may always do so. If architecture is conditioned by precedence, it is only by reference to totality: “what we build is always a whole, an entity—a building, a precinct, a town with roads, etc.—and all these entities interact and influence each other.”<sup>37</sup> Art as bearing an unverifiable relationship to precedent, science as a verificatory practice, each with its respective relationship to the sublime: Kantian epistemology—Ove's initial interest was philosophy—has mysteriously reemerged in a description of professional domains.

It is here that a politics of science manifests itself. That it does so by pointing to a moment of extravagance or exorbitance—architecture's indeterminability—in a condition of scarcity should alert us to the fact that this scientific politics (a conflict of the faculties) operates by dint of an alibi that surreptitiously enters to claim the ground of judgment: political economy. “A beautiful structure is rarely the same as the economical structure.”<sup>38</sup> Let us consider what is tacitly at stake here in revisiting the classical differentiation between verifiability and unverifiability, between structure and ornament. In describing the aesthetic

qualities of the IIT or MIT buildings, Ove did not question the aesthetic qualities of these choices. He emphasized that they merely reflected a certain preference for “simplicity,” a simplicity that he concurred had an essential relationship to “beauty.” The argument for “structural honesty,” by contrast, other than being without substance, obfuscated in Ove’s view the essential primacy of aesthetic choice, unnecessarily dissembling itself with the mask of what was in fact only contingent science.

Here the politics of the faculties presents itself by way of a reversal. In divesting architecture from certain kinds of privileging metaphor drawn from science as illegitimate, the norms of architecture are being reverted to traditional forms of rhetoric: simplicity, ordonnance, comfort, “order, balance, space, form.” By contrast, engineering—although lower in the hierarchy of the professions—*is without metaphor*, without displacement. The relationship between generality and particularity is a determined one. True modernism lies in engineering, while architecture is still a classical endeavor: “Architecture cannot be said to have progressed from old times till now . . . [although] few would argue that modern architecture is a marked improvement on the architecture of earlier epochs . . . [by] contrast . . . there is steady progress in the achievement of engineering aims, and a very much greater agreement about what is good and bad engineering.”<sup>39</sup>

This is *exactly* the argument that the modern movement’s apologists such as Siegfried Giedion had sought to make about Henri Labrouste and Gustave Maillart; and the Athens Charter could be equally considered an effort toward “greater agreement” in the international practices of architecture. Here, Ove’s philosophical imprecision merely mirrored the architectural field’s own philosophical imprecision, leading to a hermeneutic runaround around the content of the term “economy.”<sup>40</sup> Indeed, there is something of a structural homology that can be posited between the vicissitudes of the debates on surface and expressive excess in architecture and industrial design in the era of “embedded” liberalism and the implicit tensions between the “scarcity” assumption and the (inflationary) Keynesian “propensity to consume.” If “function” appears in the former as a constitutive element for “form,” the latter is equally beset by the problems of defining the semiotic equivalent for the concept-phenomenon “money.”<sup>41</sup>

It is conceivable that even less than technologically aware readers will be aware of the tremendous reductiveness accorded to engineering in this jerry-rigged asymptote. Architectural students will remember their structures courses to be restricted to a study of physical “moments” in the abstract: arrows indicating compression, tension, shear, deformation, and so on that respond to certain Newtonian calculations of mass and weight. When these calculations

are brought into the field of material performance, engineering has to negotiate with a complex set of determinants that further complicate the calculation from both physical and social considerations. Questions of “turbulence, material fatigue, changes of state, friction, viscosity, heat transfer, etc.” confront legal frameworks, price structures and availability, budgetary considerations and so on—the aggregate of which is translated in popular parlance as “economy.” The economic historian Philip Mirowski has questioned if the “design” process in engineering could claim to be a “science” at all: “they often look up certain calculations based on crude empirical techniques rather than explicit physical laws, and then arbitrarily multiply the requirements by ten for safety’s sake.”<sup>42</sup> Like English common law or Ove’s definition of “architecture,” engineering is as much an accommodation of a history of logical inconsistencies, a characteristic of what economists describe (and are unable to explain further) as “path-dependent” behavior.<sup>43</sup> More important, the content of engineering is, no more or less than architecture or any other profession, driven by the impetus to socialization in one form or the other. To accept the economic metaphor in engineering requires not just qualification but in fact *misstates the problem at hand*.

The difference between the two international “signature” projects that were to bring international recognition to Arup brings this implicit conflict to the very fore of both the architectural and governmental debate. Controversies over the exponential costs rising from the entirely superfluous but defining “sails” of the Sydney Opera House were to result in the very resignation of the project’s architect. The Centre Pompidou would realize in its decorative functionalism the radical inversion of financial policy within the French Socialist Party. Both these projects were government sponsored, and their respective developments speak directly to fates of not only the character of postwar interventionism but also the different visions of globalization nestled within them.

Writing in 1973, in a chapter titled “The Market System and the Arts” in a book devoted to the role of government in delivering economic goods, John Kenneth Galbraith sketched out from the economist’s viewpoint an inherent incompatibility between the idiosyncrasy of the “artist” and the behavioral tractability assumed in *homo economicus*, while nonetheless acquiescing to the artist as a special kind of entrepreneur and producer of value:

The artist is, by nature, an independent entrepreneur. He embraces an entire task of creation; unlike the engineer or the production-model scientist he does not contribute specialized knowledge of some part of a task to the work of a team. Because he is sufficient to himself, he does not submit readily to the goals

of organization. . . . Not needing the goals of organization and not being able or allowed to accept the goals of organization, the artist fits badly into organization. . . . A few industries—the motion picture firms, television networks, the large advertizing agencies—must, by their nature, associate artists with rather complex organization. All have a well-reported record of dissonance and conflict between the artists and the rest of the organization.<sup>44</sup>

Had Galbraith glanced over his shoulder toward the field of architecture at that time, he would have noticed an international cause célèbre that could have offered him further substance for his argument. Architect Jørn Utzon's histrionic resignation from the Sydney Opera House commission in 1966 was the consequence of a long series of disputes over the respective professional provinces and competencies of its various authors, a process complicated by exponential increases in budget, ideological shifts stemming from electoral changes in the party in government, compounded by a general mismatch in expertise and professional attitude between Utzon and the company headed by his self-selected fellow Dane, Ove Arup. In the long run, spiraling costs from Utzon's dithering over formal and technological resolution precisely instantiated for the New South Wales government the caricature of the irrefragable and intractable artist sketched by Galbraith. Their desperate turn to Arup for professional assistance—producing a conflict of interest in that Arup was now employed by both architect and client—added grist to the already paranoid Utzon office that Utzon's technological resolutions were “not wanted in the building project . . . [they merely want to] retain us as aesthetic consultants.”<sup>45</sup> The incidents left a bitter taste in the mouth even two decades later for Jack Zunz, one of Arup's key engineers on the Sydney site, and point once again to the perceived distance between aesthetic conception and technological and managerial competence that Arup in many ways would make it its special vocation to overcome. Zunz wrote:

[The] Sydney Opera House was designed by Jørn Utzon, or so the guide who conducts thousands of visitors to the complex will have you believe. No one else is mentioned in the hour-long tour. The fact that what is now standing in Sydney Harbour was built without a single drawing or instruction from Utzon is beside the point. Our society likes its instant pop images—if they require some fabrication that's alright provided the paying customers are satisfied. And so everyone knows that the Lloyd's building in London was built by Richard Rogers and that (for those old enough to remember) the Festival of Britain Skylon in 1951 was designed by

Powell and Moya. I am a great admirer of Utzon, of Rogers, and of Powell and Moya, and have on many occasions waxed lyrical about their talents. But to imply that they individually created these artifacts is like suggesting that Botham won the Ashes single-handed.<sup>46</sup>

Arup's commission for the Sydney Opera House is also significant because it offers us the earliest precedent for today's transnationally produced "signature" architecture. The iconic sails that so define its silhouette for so many around the world comprise an entirely separate structure, large pieces of sculpture hiding the standard bootlike functional typology of operas and concert halls. Its form was explicitly recognized by its commissioners as the exercise of an architect's artistic "vision" in its power to create a powerful symbol for Sydney at the water's edge on Bennelong Point. This idiosyncratic shape, despite its horticultural allusions, diverged significantly from the long tradition of organicism, as pointed out caustically by Frank Lloyd Wright. "God help us all," he wrote, calling it a "disrupted, circus tent, blown open and apart by the wind . . . [a] non-constructive, inorganic fantasy [concocted by a] novice. . . . The absurd efflorescence of this opus [only] show[ed] the folly of these now too-popular competitions," none of which in Wright's view had produced a single good building, or ever would in the future.<sup>47</sup>

By contrast, in a retrospective account, Zunz, Arup's "man on the ground," was frank: "the engineering aspects of the Opera House . . . have no value in themselves. They are of interest in the context of the services they render to whatever they serve. . . . By itself the structure of [the] Sydney Opera House may have some virtuoso-like qualities—it may even be an engineering cadenza—but in itself it serves no purpose."<sup>48</sup> In his account Ove himself rationalized the building's "caprice" only on the grounds of the architect's special, *classical* license as the author of an unverifiable craft or genius, to create "masterpieces." Given its early extragovernmental inception in the hands of a colonial Bloomsbury-type clique—a derivative Australian Arts Council—but with no Keynes-like figure at its helm, both expertise and accountability in the Opera House's amateur-run executive committee was lacking, with members offering only vague estimates of what they required the architect to provide, leading to multiple confusions even on the number of seats to be provided for in the design. This bumbling also led to the bogus budget of 3.6 million Australian dollars, drafted by an unfortunate quantity surveyor at the competition venue under the overbearing influence of Eero Saarinen—the competition juror who saw in the Opera House a continuation of his own legacy—who provided him rough estimates from his own experience with MIT's Kresge Auditorium, on the basis of which the project was awarded to Utzon in the first place.

Compounding the puttering of the clients was the deceptive simplicity or,

as Ove somewhat generously put it, the “unsuspected complexity” of Utzon’s original sketches, a simplicity that could have been perceived as a mere gestural abstraction and equally well a sign of the architect’s relative inexperience—having realized only a group of low-cost patio houses in Denmark—but wasn’t. On his first meeting with Utzon, Ove recognized that the drawings were more or less “freehand sketches without geometric definition. Utzon certainly thought that he had found a solution which was structurally reasonable. He was therefore very disappointed when I told him at our first interview that the shape was not very suitable, structurally, for he was particularly keen on the idea of an ideal marriage between Architecture and Structure.”<sup>49</sup>

Subsequent logistical complexity came from the architect’s desire to realize his “perfect” vision, leading to a tendency on the one hand to inordinately long periods of reflection when drawing out the requisite details of each stage, and on the other hand to obsessively micromanage inputs from all contending forms of expertise, contriving to keep them apart under his authoritative command. As the melee of discordant inputs accumulated—from clients uncertain about their requirements to a clearly inept architectural office with inadequate quantity and quality of staff to substandard contractors—costs spiraled to more than sevenfold the first estimate by 1965 to approximately twenty-four million Australian dollars (and less than a quarter of the eventual total cost). With Labor’s removal in that year, the new conservative minister of public works leveraged public outcry to push Utzon toward greater accountability and better schedules of deliverability.

Under pressure, Utzon increasingly began to suspect, all evidence to the contrary, Arup of conspiring to wrest the project for his own firm. This perception grew out of a peculiar arrangement decided upon by the Department of Public Works, which was to employ Arup as directly responsible to it instead of Utzon, a common practice in Britain, despite the fact that Utzon had recommended Arup in the first place. The rancor on Utzon’s part escalated sharply by late 1965, which now saw both the New South Wales government and Arup as conniving in robbing the architect of “control” over the project. The following text is testimony to Utzon’s growing paranoia: “After the Minister for Public Works took over as the Construction Authority, I wanted to make it quite clear that *I should be in complete control* of every detail. I therefore asked the last Premier to give me confirmation of this, but I have never received such confirmation, as you can see from our correspondence. It is absolutely vital that, in order to prevent the building being destroyed, *I must remain in full command* of every detail that comes in to the building, including furniture, decoration, etc.”<sup>50</sup>

For governments everywhere the Sydney Opera House saga encompassed the eclipse of two prominent assumptions: the magisterial competence of ar-

chitects as singular authors of public projects and the support of the arts as an element of welfarism. If the former was an assumption of the modernizing thrust of postwar Labor governments and the like, the latter was a leitmotif of the dirigiste state. It is important for our purposes to notice that the waning of these assumptions also carried with them the demise of the presumed organic relationship between skin and structure, as corporations of high expertise such as Arup increasingly intervened to disabuse architects of this innocence. Thus what Charles Jencks in 1977 announced as the end of modernism was in fact the unraveling of a certain *organicism*, that architecture had to be “worked from the inside out.”

In a manner of speaking, both the Sydney fracas and ensuing stagflation experienced in global markets in the 1970s would significantly concretize in operational terms for Arup what was generally being experienced in architectural culture as a turn from modernism, both in its socializing and aesthetic element. On the other hand, the slow traversal to the financial icons of the fin de siècle in Arup’s history can also be described in terms of its increased entanglement with the very operations of governments themselves—the flip side of the Sydney Opera House coin—and their constituencies.

The international lesson from the Sydney project was imbibed even more deeply by Arup’s continuing frustration with the government at home: both the architects’ bias toward modernism and the Tories’ antagonism toward fiscal antagonism militated against any comparable public commissions like the Australian example in the realm of culture or along the stimulatory lines that Keynes had envisioned. (The brief exception here being Jennie Lee, Harold Wilson’s minister of state for the arts—the UK’s first—who commissioned both the Open University project and the new arts center on the South Bank, both commissions for Arup.) Under the circumstances there is no irony that the one built residue of the “angry young” generation of British architects would simply have to be realized abroad: the Centre Pompidou, an architectural trigger for Mitterrand’s subsequent Grands Projets in Paris, many of them—the La Defense buildings, the Louvre pyramid—designed by Arup.<sup>51</sup>

In citing a long history of socialist monuments (the Parc de la Villette), the Projets were in fact emblems of the ideological defeat of the Mitterrand Socialists at the hands of large-scale capital flight. The new monuments were explicitly commissioned to foreign architects to convey an impression of being receptive to foreign investment and capital. Indeed, it is conceivable that no government on the right could have had the wherewithal to effect the relaxation of capital controls that the Mitterrand government put into effect; what a “conservative government had feared to do, a Socialist government accomplished.”<sup>52</sup> The increasing

economic openness of the state was thus providentially portrayed as a cosmopolitan openness to culture, with the “glass state” happily hewing to an image of the Socialists’ continuing dedication to Revolutionary “institutions,” complete with visual reference to the Russian Constructivists.<sup>53</sup> The dynamic that had produced Keynes’s South Bank response to the Soviet rallies had found a postmodern resolution *within* the liberal consensus. (Elsewhere, Arup would use a highly visible commission from a major investment body in one of Britain’s last colonial bridge-heads, the Hong Kong & Shanghai Bank, to project itself into Deng’s new China.)

In Britain itself the situation would have to wait for one more purge. The British government’s long-term tacit encouragement of financial movements beyond the grasp of formal regulation found its formal culmination in Thatcher’s “Big Bang” Financial Services Act of 1986, a deregulatory move intended to bolster London’s position as the premier international financial center, or, more accurately, legalized global money-laundering operation and tax-shelter hub.<sup>54</sup> Within a year the City of London had become the route for a full quarter of American foreign investment in the services sector, making London the world’s premier financial entrepôt.<sup>55</sup> Despite this radical financial policy, Thatcher’s petit-bourgeois consensus on the home front allowed no such grandiose expressions of monumental culture, or for that matter, an equally intrepid fiscal policy. The Thatcher regime adopted the rhetoric of cutting government spending, including in the arts, but in its structural approach to cultural policy it only continued the interventional pattern set by earlier Labor governments while turning it to other uses. In architecture, the spigot for significant public building was turned off in marked contrast to the Wilson years; the government devolved this to the commercial sector and the real estate industry, thus producing the clientele for Arup’s buildings for Embankment Place, Canary Wharf, and Lloyd’s of London. The Tory’s urban planning initiative significantly played to a consensus forged between the preservationist elements of the old rentier class and the enclavist energies of the new entrepreneurial factions. The planning profession declared itself more or less to be in “crisis,” while architects found themselves grappling with Prince Charles’s comments on “glass stumps and classic carbuncles.”<sup>56</sup>

What is less evident in the cultural commentary on the period is the commensurate crisis on a front that cultural commentators were less likely to notice. Since its ascendance to a form of cultural heroism—one exemplified in the work of Gideon and Banham—the profession of engineering had resolutely looked to the state as the principal generator of the large scale; its counterpart in the private sector was the manufacturing industries. The Tories’ domestic policy of evacuating the public sector put paid to the former aspiration; the financial revolution moved manufacturing away from the regions of socialized

welfare to more pliant, cheaper labor pools. On the home front the crisis engendered by this double evacuation was immediately felt in the migration of young students from seeking careers in engineering to managerial or financial careers; at the same time, the stock market saw the “demise of great British manufacturing companies and the emergence of high technology international companies” whose ambitions were less technological than managerial.<sup>57</sup>

The crisis posed by this radical shift within a generation to the engineering profession may appear counterintuitive; certainly it is hard to sift any such sentiment from the utterances of the time from the engineers themselves. And yet basically the shift in the mode of governmentality eviscerated the very profession of the engineer. The despondence is evident in a number of articles in the *Arup Journal* of that time, particularly in the writing of Zunz, Ove’s able lieutenant on the Sydney Opera House project: “Governments come and go, inducted and evicted by quotable slogans, none of which have any bearing on the training and education, or lack of it, of our [engineering] community—unless you count Harold Wilson’s 1963 speech to the Labour Party Conference when he said: ‘We are redefining and restating our socialism in terms of the scientific revolution. The Britain that is going to be forged in the white heat of this revolution will be no place for restrictive practices etc., etc. . . .’ The ‘white hot revolution’ turned out more like a long cold winter, discontent and all.”<sup>58</sup>

In a subsequent series of articles, Zunz’s distemper is more than visible, as he tackles the many worries facing the profession, including fragmentation, “the cult of professional managers,” and the shortage of engineers. “The 10 top construction companies in the United Kingdom have 124 listed directors,” he wrote. “Of these 12 have an engineering qualification.”<sup>59</sup> It is in the angst-ridden throes of a disappearing generation—replete with an exhortation to engineers to “stop whining” and to take more active charge of their own public self-image—that we find the implosive context for the harangue against Utzon quoted earlier in this chapter. It might be added that Arup experienced an actual downturn in profits in the early 1990s, owing to external conditions of “demand uncertainty” experienced during this period. The growing frustration was fueled also by more immediate, political provocation. In the early 1990s, accompanied by economic downturn, Arup’s proposal for the nearby Paternoster Square was a key target of attack by Prince Charles, leading to its abandonment, in addition to a number of other master planning proposals by some of Britain’s key architects.<sup>60</sup> In many ways this conservative resistance mirrored Winston Churchill’s vengeful clearance of the Festival of Britain buildings after his return to power in October 1951.<sup>61</sup> Indeed, the intransigence of Tory politicians and Tory-identified architects and writers against modernism had for decades the effect of having the entire modernist faction in British culture to be resolutely

Labour-identified: from Berthold Lubetkin and Ove Arup to Leslie Martin, from the New Brutalists and the “New Empiricists” to the “neophilics” and the “Angry Young Men” of Britain’s postwar generation, including Cedric Price and his early devotee Richard Rogers.<sup>62</sup>

Thus when the various propositions for the South Bank were broached in the early 1990s—by Arup, commissioned by the Tory government in 1995, and another by Richard Rogers and Labor’s shadow minister for the arts and media, Mark Fisher—there is no presentiment of the institutional bodies that would come to occupy this site in the aftermath of the institution of the National Lottery in the 1990s. Quite to the contrary, both reports are significantly framed through infrastructural and logistical demands, pious calls to better housing, of-fices, civic spaces, and so on.

The Arup report, surprisingly given the firm’s towering status as an engineering firm, consequently timidly kowtows to a “townscape” line, with contingent, localized specifications for river views, plantings, pedestrian-bicycle segregation and protection, riverside paths, control of building heights, distinctions to be made between public and private spaces, lighting, and so on.<sup>63</sup> The Rogers and Fisher report is a report on London in general but devotes special attention to the Thames as a key focus for urban reorientation of the city. As compared with the Arup report, hampered by the fact of being published literally under the shadow of John Major’s government in 1992, its proposals tortuously work around the possibility that the kind of urban planning envisaged in the report may be seen as “strong-arm” interventions by the state, while simultaneously criticizing the specter of a city held hostage to developers’ speculative trends and frenzies. Thus, quite in contrast to his own continental contributions, Rogers’s report significantly rules out Grands Projets–like monuments as desirable for this site: “The most telling criticism of the Grands Projets is that they are imposed from on high and are parachuted in to sites . . . [thus making them] . . . primarily of interest to tourists.” The model forwarded is that of Barcelona, the report thus going on to emphasize “community building,” pedestrian walks and civic spaces, and visual outlooks as the basis for changes.<sup>64</sup> As for Fisher, upon his appointment as minister of the arts under the Blair government of 1997, this advice would not stop him from the immediate commissioning of tourist-friendly monuments such as the Tate, the Millennium Bridge, and City Hall. By 2001 one commentator could proudly remark that “London in the early twenty-first century is a city of *grands projets*.”<sup>65</sup> Clearly this is an architectural *tournant* within the space of a few years; that it was able to gain such swift traction against the older baggage within so little time owed significantly to the clientele-public created by the National Lottery.

Again, it can be strongly argued that this turn drew less from a sudden

shift in urban or architectural sensibilities as their place within political constituency building involving the uses and prerogatives of the state. Just as shifts in working-class attitude, long considered the mainstay of Labour, were critical to Thatcher's triple election dominance, the "new" factor in the New Labour victory of 1997 was the very class of service professionals that eighteen years of continuous Conservative rule and the frenetic throes of the "Big Bang" had fostered. The Blairite agenda did little subsequently to undo the monetary paradigms, the privatizing ethos, or the commercial mechanisms that earlier governments had put into place, in fact driving an economizing ideology into the very operations of government itself. If under the Tories, welfarism was allowed to become dysfunctional, the Blairites set about making it "cost-efficient," thus enthusiastically assuaging the new financial and managerial class that the meager revenues drawn from them were not being frittered away. In this transformed context, the global organizational exercise carried out by Arup in 1995, ponderously called the "Reformation," would also see a thrust toward the cultivation of "signature" architects that came to embody a key element of Arup's expertise in the public eye, which was explicitly part of its new marketing approach. (The so-called Reformation was an exercise that "flattened" out its technological units into a more managerially led consulting network of fifty independent units reporting to a rotational main board.<sup>66</sup>)

At the same time, the new "signature" projects of the South Bank—now integrally connected with the financial and service industries based in the City of London through Arup's Millennium Bridge—was therefore literally conceived as a territorial wedge driven between the new Blairite constituencies and their potential alliance with the rentier classes ensconced in the dreary Georgian neighborhoods of Mayfair and Belgravia. Lit late into the night for young traders to entertain themselves after the "animal energies" had been released at work, it effectively concretized a political faction through the catalysis of leisure, complete with Arup's building for the newly created mayor's office for Greater London—with appropriately radical incumbent "Red Ken" voting down the heritage factions at every turn—sited well at a distance from the old locations of power and *their* ceremonial Lord Mayor of the City of London. Even as Blair ejected scores of hereditary peers from the House of Lords, Richard Rogers was raised Baron of Riverside.

The emancipatory aura of the new South Bank icons elided the rise of New Labour itself as a *footnote* to the *fundamental restructuring* of the British state under Margaret Thatcher. As a brochure cataloging the burst of architectural projects in London puts it: "Thankfully, following the economic collapse of the early 1990's after John Major's withdrawal from the European Exchange Rate Mechanism, the architectural scene was rescued and reinvigorated by the intro-

duction of the National Lottery in 1994.”<sup>67</sup> The arts were the key instrument to forge this catalysis. The rhetorical recourse taken was that of redescribing the shift from manufacturing to service industries as the growth of “creative industry,” with significant implications for the organization of the National Lottery.

In 1998, Chris Smith, secretary of state for culture, media, and sport—the newfangled and integrated ministry created by the Blairite government to disburse goods from the lottery—laid out the key facets through which cultural policy drawing on the National Lottery would be critical to the economic policies of the government. Coming on the heels of the creation of the Creative Industries Taskforce, such areas as film, theater, music, fashion, television, and the visual arts are now redescribed as crucial to the integration of “culture, business and society.” Encompassed under these areas are not only the “artistic” talents involved (actors, directors, and such) but also “scientific” and “technical” tasks (involving digital and electronic engineers and so on). The architectural outcome of this displaced state apparatus was tremendous, with about two thousand awards made in excess of one billion pounds in England alone over six years to upgrade or create new facilities and structures for the arts: dance and music centers and studios, galleries and museums, concert halls, waterside developments.<sup>68</sup> Much of this money was distributed through the Art Council—Keynes’s Art Council—now conveniently reinvigorated after the doldrums of the Thatcher years.

Arup lithely adapted itself to harness this new “public”—from providing designs for non-Euclidean geometric shapes to lighting services to designing iconic installations to acoustic services for a string of the new arts buildings. By the turn of the millennium, it became equally clear that instead of describing itself primarily as an engineering firm, Arup may be said to be increasingly embracing the definition of “creative industry.” Arup’s cultivation of the arts, embodied in the creation of the Advanced Geometry Unit at this time, oriented exclusively to the study and realization of complex forms, is of a piece with this new governmental approach as much as it pays lip service to Ove’s Kantian notion of aesthetic autonomy.

It is clear, however, that for Blairite mandarins, this aestheticism of the state is in service of an economic goal: the policy mandate was not to see the “arts” as merely involved in the creation of better cultural consciousness and enthusiasm—although copious exhortations to the same are hardly foregone—but as “*enhanc[ing] mainstream Exchequer support,*” in other words as an indirect support of private *industry*.<sup>69</sup> The London Olympics of 2012—complete with scenario-building by Arup—would be the swansong of that arc, a Potemkin exurbanism of inflated demand. “It has become clear that we . . . need to look at the benefits the creative approaches of the arts can in turn bring to *business*.”<sup>70</sup> By a tortuous circle of events, Keynes’s intuition on the arts as instinctual driver

of demand had now chiasmically been worked into a *supply-side* motor. Maynard would have smiled.

### Notes

*Epigraph:* Ove Nyquist Arup, *Doodles and Doggerels* (Aylesbury: Ove Arup Partnership, 1990), 27.

1. See Rawi Abdelal, *Capital Rules: The Construction of Global Finance* (Cambridge: Harvard University Press, 2007).

2. I am grateful to Andrea Johnson, graduate student at Columbia's School of Architecture, Preservation, and Planning, in providing me this information in the graduate paper she wrote for my class.

3. Rem Koolhaas, "Post-modern Engineering?" in *Content*, by AMO, OMA, Rem Koolhaas, Simon Brown, and Jon Link (Cologne: Taschen, 2004), 514–15.

4. Norman Engleback, "South Bank Arts Centre Architecture," *Arup Journal* 1, no. 5 (July 1967): 20–23.

5. Arup, *Thames Strategy: A Study of the Thames Prepared for the Government Office for London: Strategic Planning and Design Guidance from Hampton Court to Greenwich* (London: HMSO, 1995).

6. John Maynard Keynes, "Art and the State," *Listener*, August 26, 1936, in John Maynard Keynes, *The Collected Writings*, vol. 28, *Social, Political, and Literary Writings* (New York: Cambridge University Press, 1982), 348.

7. At that time Keynes would be drawn in against his wishes into these discussions, which he considered premature for the time, by Reginald Rowe, president of the National Federation of Housing Societies and Edwin Lutyens. John Maynard Keynes, letter to Reginald Rowe, November 20, 1942, John Maynard Keynes Papers, King's College Library, Cambridge (henceforth JMKP), file no. PP/84/1. Also see files in box no. PP/75: "Correspondence concerning the Royal Academy Planning Committee, including references to the reconstitution of the Fine Art Commission, 1942, 1940-2."

8. Robert Skidelsky, *John Maynard Keynes: The Economist as Savior, 1920–1937* (New York: Penguin Books, 1992), 536.

9. JMKP, file no. PP/80/4/8.

10. For my analysis of the relationship of Keynes and Robinson, see Arindam Dutta, "Sui Generis, Historically: On Prabhat Patnaik's *The Value of Money*," *Social Scientist* 37, nos. 3–4 (March–April 2009): 33–45.

11. Antonio Negri, "Keynes and the Capitalist Theory of the State post-1929," in *Revolution Retrieved: Selected Writings on Marx, Keynes, Capitalist Crisis, and New Social Subjects, 1967–1983*, vol. 1 of the *Red Notes Italian Archive* (London: Red Notes, 1988).

12. See Andrew Cox, *Adversary Politics and Land: The Conflict over Land and Property Policy in Post-War Britain* (Cambridge: Cambridge University Press, 1984).

13. John Maynard Keynes, "The End of Laissez-Faire" (1962), in his *Essays in Persuasion* (New York: W. W. Norton, 1963), 317–18.

14. John Maynard Keynes, "A Short View of Russia" (1925), in his *Essays in Persuasion*, 297–311, 300.

15. John Maynard Keynes, *The General Theory of Employment, Interest, and Money* (New York: Harcourt Brace Jovanovich, 1964), 162.

16. Keynes, *General Theory of Employment, Interest, and Money*, 129.
17. See E. G. Winslow, "Keynes and Freud: Psychoanalysis and Keynes's Account of the 'Animal Spirits of Capitalism,'" *Social Research* 53, no. 4 (1986): 549–78.
18. See David Glasner, "A Reinterpretation of Classical Monetary Theory," *Southern Economic Journal* 52, no. 1 (July 1985): 46–67.
19. Keynes, "Art and the State," 345–46.
20. Keynes, "The Arts in Wartime," in Keynes, *The Collected Writings*, vol. 28, *Social, Political, and Literary Writings*, 361.
21. Keynes as quoted in Skidelsky, *John Maynard Keynes*, xxviii. Italics added.
22. Piero Mini has hinted at the inception of these ideas in the Bloomsbury avant-gardist sensibility against the hereditary mavens of British cultural society. See Piero Mini, *Keynes, Bloomsbury, and the General Theory* (London: Palgrave Macmillan, 1991), 96–97.
23. Kevin Cahill, *Who Owns Britain: The Hidden Facts behind Landownership in the UK and Ireland* (Edinburgh: Canongate, 2001), 27.
24. See Cox, *Adversary Politics and Land*.
25. See, for instance, the proposal made by A. E. Richardson on behalf of the Royal Fine Arts Commission—found among Keynes's papers—where the polarity between the landed stewardship of existing urban heritage and the chaotic effects wrought by "architectural speculation" is made patent. A. E. Richardson, "The Reconstruction of London as an Architectural Entity," in JMKP, file no. PP/75/4-10. Also see A. E. Richardson, "The Reconstitution of London," *Journal of the London Society*, no. 268 (June 1941): 11–13.
26. Karl Marx, "The Eighteenth Brumaire of Louis Bonaparte," translated by Ben Fowkes in his *Surveys from Exile, Political Writings, Volume 2*, edited by David Fernbach (New York: Penguin, 1973, 1992): 143–249, 174.
27. Arthur Korn, Maxwell Fry, and Dennis Sharp, "The M.A.R.S. Plan for London," *Perspecta* 13 (1971): 243–67.
28. Roger Fry, "Art and Socialism," excerpted from Fry's *The Great State* (1912), reprinted in his *Vision and Design* (Cleveland, Ohio: Meridien Books, 1956), 73, 75.
29. John S. Harris, "Decision-Makers in Government Programs of Arts Patronage: The Arts Council of Great Britain," *Western Political Quarterly* 22, no. 2 (June 1969): 253–64.
30. See Peter Scott, *The Property Masters: A History of the British Commercial Property Sector* (London: E and FN Spon, 1996).
31. Ove Arup as quoted in Peter Jones, *Ove Arup: Master Builder* (New Haven: Yale University Press, 2006), 56, 95–96, 123.
32. The York Minster project occasioned a long historical dissertation in the *Arup Journal*, as unique for a house publication as for an engineering firm. See David Mitchell, "York Minster," Part 1: York, and Part 2: The Minster, *Arup Journal* 3, nos. 3 and 4 (May and July 1968): 50–58, 70–82.
33. On the Shah's monuments, see Peter Ayres, "The Geometry of Shahyad Ariamehr," *Arup Journal* 5, no. 1 (March 1970): 29–34.
34. See Robert Skidelsky, ed., *Thatcherism* (London: Chatto and Windus, 1988).
35. Ove Arup, "Modern Architecture: The Structural Fallacy," *Listener*, July 7, 1955, republished in the Ove Arup special issue in *Arup Journal* 20, no. 1 (Spring 1985): 19–21, 19.
36. Ove Arup, "An Engineer Looks at Architecture," *Arup Journal* 5, no. 3 (September 1970): 2–3, 2.
37. Arup, "An Engineer Looks at Architecture," 2–3, 2.

38. Arup as quoted in Jones, *Ove Arup*, 165.

39. Arup, "An Engineer Looks at Architecture," 2.

40. I would argue that this play of metaphors in relationship to a certain economic use—of words and precedents as much as of building materials and resources—may be better examined against the background of a peculiar post-Keynesian theoretical discourse crisscrossing the economics, engineering, and developmental fields between 1949 and 1974, almost exactly spanning the first phase of Arup's growth, in what was described as the "engineering production function" debate. For reasons of space, this must be left to a more elaborated version of this chapter. See Arindam Dutta, *Ancestralities: Architecture, Nature, and the Debt* (forthcoming).

41. See "Mammoths, Inc.," in Dutta, *Ancestralities*. Also see Jean-Joseph Goux, *Symbolic Economies: After Marx and Freud*, translated by Jennifer Curtis Gage (Ithaca: Cornell University Press, 1990); and Gayatri Chakravorty Spivak, "Scattered Speculations on the Question of Value," in her *In Other Worlds: Essays in Cultural Politics* (New York: Methuen, 1987), 154–78.

42. Philip Mirowski, *More Heat Than Light: Economics as Social Physics, Physics as Nature's Economics* (Cambridge: Cambridge University Press, 1989), 329.

43. It would be important to add that the advent of computation into engineering processes does not significantly alter this epistemological framework; it only subjects the multiple determinants, by way of a systems approach, into less mathematically cumbersome models, thus allowing for more atypical solutions.

44. John Kenneth Galbraith, "The Market System and the Arts," in his *Economics and the Public Purpose: How We Can Head Off the Mounting Economic Crisis* (Boston: New American Library, 1973), 59–68, 59–60.

45. Letter from Mogens Prip-Buus, Utzon's chief assistant, to his partners, Sydney, March 13, 1966, from *Letters from Sydney: The Sydney Opera House Seen through the Eyes of Utzon's Chief Assistant Mogens Prip-Buus* (Hellerup: Edition Bløndal, 2000), 108. Research on the Sydney Opera House affair was conducted at State Records New South Wales, Department of Public Works, Sydney Opera House Records (henceforth SRNSW: DPW), file name COD 531B—Public Works, Sydney Opera House.

46. Jack Nunz, "Mirror Mirror on the Wall . . . How Fair Is the Engineer's Image," *Arup Journal* 28, no. 2 (February 1993): 8–11, 11.

47. Frank Lloyd Wright, as quoted in David Messent, *Opera House: Act One* (Sydney: David Messent Photography, 1997), 113.

48. Jack Zunz, "Sydney Revisited," *Arup Journal* 23, no. 1 (Spring 1988): 2–11, 4.

49. Arup, "Sydney Opera House," 32.

50. Utzon to Hughes, July 12, 1976, SRNSW: DPW 4/7893.

51. Stanley Mathews, *From Agit-Prop to Free Space: The Architecture of Cedric Price* (London: Black Dog Publishing, 2007).

52. See Rawi Abdelal, "The Paris Consensus: European Unification and the Freedom of Capital," in Abdelal, *Capital Rules*, 58–64, 61.

53. Annette Fiero's book on the Grands Projets subscribes to this line with little query. See Annette Fiero, *The Glass State: The Technology of the State, Paris 1981–1998* (Cambridge: MIT Press, 2003).

54. Jonathan Brown, "Britain's Big Bang," *Multinational Monitor* 7, no. 1, and 8, no. 1

(December–January 1986–87); also see Nicholas Shaxson, *Treasure Islands: Tax Havens and the Men Who Stole the World* (London: The Bodley Head, 2011).

55. See Murray Fraser and Joe Kerr, *Architecture and the “Special Relationship”: The American Influence on Post-War British Architecture* (London: Routledge, 2007), 421.

56. A number of studies appeared at this time describing the factors that underlay this “crisis.” See Andy Thornley, ed., *The Crisis of London* (London: Routledge, 1992); Nicholas Deakin and John Edwards, *The Enterprise Culture and the Inner City* (London: Routledge, 1993); and also Thornley, *Urban Planning under Thatcherism* (London: Routledge, 1991).

57. Robert Hawley, “Engineering, the City, and the Arts: Who Needs to Change?” *Royal Institution of Great Britain Paper*, November 29, 2002, online at <http://www.rigb.org/events/transcripts.jsp> (link no longer available).

58. Jack Zunz, “Continuing Education and Training: Where Do We Go from Here?” *Arup Journal* 24, no. 1 (Spring 1989): 2–5, 3.

59. Jack Zunz, “Matters of Concern,” *Arup Journal* 24, no. 3 (Autumn 1989): 22–23.

60. See the special issue of the *Architectural Review* (83, no. 1091 [January 1988]) on “Unbuilt London” for documentation of these projects.

61. See Adrian Forty, “Festival Politics,” in *A Tonic to the Nation: The Festival of Britain 1951*, edited by Mary Banham and Bevis Hillier (London: Thames and Hudson, 1977). Also see Alan Powers, *Britain* (London: Reaktion Books, 2007).

62. Christopher Booker, *The Neophiliacs* (Boston: Gambit, 1970); Bryan Appleyard, *The Pleasures of Peace: Art and Imagination in Post-war Britain* (London: Faber and Faber, 1989); Claude Lichtenstein and Thomas Schreggenberger, *As Found, the Discovery of the Ordinary: British Architecture and Art of the 1950s* (Zurich: Lars Müller, 2001); and Stanley Mathews, *From Agit-Prop to Free Space: The Architecture of Cedric Price* (London: Black Dog Publishing, 2007). For the Tory-Labour conflict over architecture in the 1980s, see Murray Fraser and Joe Kerr, “Culture and Monumentality,” chapter 6 in *Architecture and the “Special Relationship”: The American Influence on Post-War British Architecture* (London: Routledge, 2007), 341–412.

63. [Ove Arup Partnership], *Thames Strategy: A Study of the Thames Prepared for the Government Office for London* (London: Government Office for London, 1995).

64. Richard Rogers and Mark Fisher, *A New London* (London: Penguin Books, 1992), 61, 76. In 1999, Rogers was commissioned by the deputy prime minister’s office to make another report. See the Urban Task Force (chair Richard Rogers), *Towards an Urban Renaissance* (London: E & F N Spon, 1999).

65. Kenneth Powell, *New London Architecture* (London: Merrell, 2001), 23; also see Kenneth Powell, *City Reborn: Architecture and Regeneration in London, from Bankside to Dulwich* (London: Merrell, 2004).

66. See Evelyn M. Fenton and Andrew M. Pettigrew, “Integrating a Global Professional Services Organization: The Case of Ove Arup Partnership,” in *The Innovating Organization* (London: Sage Publications, 2000), 47–81.

67. Marianne Butler, *London Architecture* (London: Metro Publications, 2004), viii.

68. Arts Council England, *Pride of Place: How the Lottery Contributed £1 Billion to the Arts in England* (London: Arts Council and August, 2002).

69. Chris Smith, *Creative Britain* (London: Faber and Faber, 1998), 53, italics added.

70. Smith, *Creative Britain*, 53.

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