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OUT OF SOHO: READING JOSEPH PAXTON'S 'GREAT VICTORIAN WAY'

Henry Atmore

PART I

On 7 June 1855, in a Westminster committee-room, Joseph Paxton unveiled his grandest scheme.[1] The Great Victorian Way (GVW) was to be "a large arcade … precisely the same breadth as the transept of the old Crystal Palace". On each side would run eight lines of railway. In the centre would be a promenade flanked by fashionable shops, libraries, and town houses (Figure 1). It was to loop between the City of London and the West End, linking all six of the capital's railway termini, and connecting the pleasure districts at Kensington, Vauxhall Gardens, Regent's Park and Knightsbridge, to the commercial alleyways of Cheapside and Capel Court.[2] It was to be nearly thirteen miles long, and projected to cost £34 million, a colossal sum. One commentator described the scheme as "daring" and "startling"; this does scant justice to

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1 The standard texts on Paxton are Violet Markham, *Paxton and the Bachelor Duke,* (London: Hodder & Stoughton, 1935) and George Chadwick, *The Works of Sir Joseph Paxton,* (London: Architectural Press, 1961). These should now be supplemented by Kate Colquhoun, *A Thing in Disguise: The Visionary Life of Joseph Paxton,* (London: Harpercollins, 2003).

2 PP.1854-5.X.*Select Committee on Metropolitan Communications,* 78-96 This committee was part of a long process of government investigation of the possibilities for metropolitan reform, a process instigated by the 1844 Royal Commission for the Improvement of the Metropolis. See PP.1844.XV.*First Report of the Commissioners for the Improvement of the Metropolis,* and subsequent reports on embankment schemes, the Chelsea Hospital, Battersea Park, Public Records etc. On the financial geography of London in this period see David Kynaston, *The City of London: A World of Its Own, 1815-1890*, (London: Chatto & Windus, 1994) and Roy Porter, *London: A Social History,* (Harmondsworth: Michael Joseph, 1994), 205-238.

the magnitude of Paxton's ambition.[3]

What was it for? As Bruno Latour has shown in his study of the Aramis transit system, even technologies that never get much beyond the blueprint stage can admit to complexity of motive.[4] The GVW was intended as a step towards the rational realignment of London's crooked thoroughfares.[5] It was to be an ameliorative of road congestion, a problem that the coming of the railway had exacerbated.[6] This, it could be said, was the GVW's proximate cause, for Paxton had drawn up his plans at the behest of a government committee investigating the reform of metropolitan communications.[7] But 'congestion' presented a more than logistical challenge. It was an affront to a moralized urban sensibility, a call to reformist action.[8] Thus, the third and perhaps most important envisaged effect of the GVW was that it would contribute towards the regeneration of the slum districts – Lambeth, Southwark, and the rookeries abutting the Square Mile – it would traverse. As for the precise nature of that regeneration: the GVW was to be, above all, a site of conspicuous consumption. Rail travel aside, the main activities would be promenading, shopping, and reading. All three modes of leisured life would exercise a restraining, civilizing influence, not only on those who engaged in them, but on everybody who saw them being done.[9]   And

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3 'The Street of Glass and Metropolitan Communications', *The Builder*, 13 (1855), 281.

4 Bruno Latour, *Aramis, or The Love of Technology,* tr. Catherine Porter, (Cambridge, Mass.: Harvard University Press, 1996).

5 Siegfried Giedion, *Space, Time and Architecture,* 5th Ed, (Cambridge, Mass.: Harvard University Press, 1967), 249-255; the dystopian potential of the reformist project is memorably set forth in John Ruskin, *The Opening of the Crystal Palace Considered in some of its Relations to the Prospects of Art,* (London: Smith, Elder & Co., 1854), 13.

6 PP.1846.XVII, *Commission on Metropolitan Railway Termini,* 3-21.

7 Donald Olsen, *The Growth of Victorian London,* (London: B.T.Batsford, 1976), 18-31; T.C.Barker & M.Robbins, *A History of London Transport: Passenger Travel and the Development of the Metropolis,* Revised Ed, 2 Volumes, (London: Allen & Unwin, 1975), I.64-68.

8 Christopher Hamlin, *Public Health and Social Justice in the Age of Chadwick: Britain, 1800-54,* (Cambridge: Cambridge University Press, 1998).

9 For a contemporary critique of fashion and *politesse* as tools of political restraint see Herbert Spencer, 'Manners and Fashion', (1854), in *Seven Rationalist Essays,* (London: Rationalist Press Association, 1907), 85-110. Also, Andrew St George, *The Descent of Manners: Etiquette, Rules, and the Victorians,* (London: Chatto & Windus, 1993), 84-137;↗

this was important on a practical level too because, given the sums involved, the GVW would succeed only as a result of the convergence of state patronage and enlightened capital.[10] A limited company would not be in a position to guarantee profits to shareholders: if built purely under the aegis of the state, the structure would be 'political' in a pejorative sense.[11] But to attain this lofty conjunction of interests what went on inside the GVW would have to be improving, and armoured against charges of frivolity. Hence the prominence, to modern eyes somewhat incongruous, accorded the libraries and reading rooms.[12]
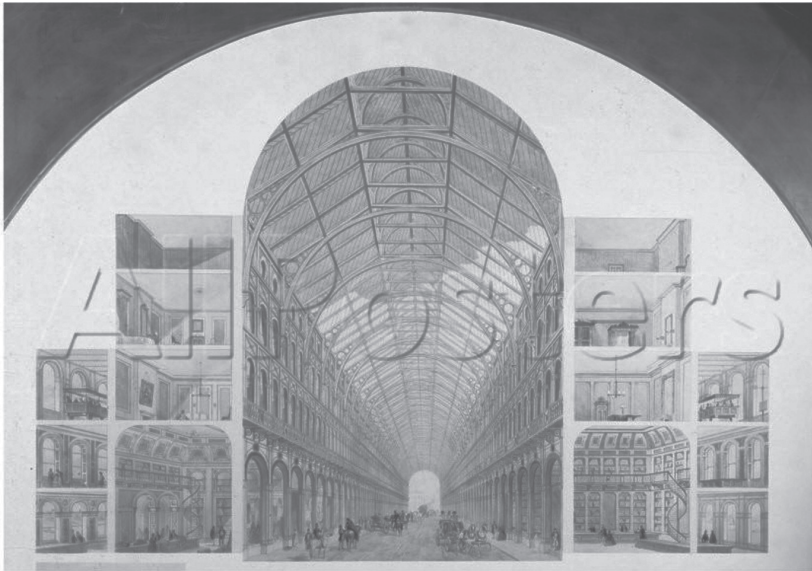

Figure 1 - The Great Victorian Way

↘Marjorie Morgan, *Manners, Morals, and Class in England, 1774-1858,* (New York: St Martin's Press, 1994).

10 On the rhetoric of which, and Paxton's public commitment to, see Geoffrey Searle, *Entrepreneurial Politics in Mid-Victorian Britain,* (Oxford: Oxford University Press, 1993), 89-141.

11 'Street of Glass', op cit.

12 Alan Rauch, *Useful Knowledge: the Victorians, Morality, and the March of Intellect,* (Durham, N.C.: Duke University Press, 2001).

Finally, of course, the GVW – both in its imagined form and in the event of any future actuality – was a glorification of its maker. Who else but Joseph Paxton, the architectural hero of the hour, could have come up with it?[13] But if the GVW is fruitfully understood as an instrument of professional self-fashioning, Paxton was not the only architect to have this particular regenerative vision at this particular time. A few days before he gave his evidence, the committee had considered another, more modest, proposal for a crystal arcade, drawn up by a London-based architect, William Moseley. Moseley's Crystal Way was less opulent than, but in most particulars identical to the GVW. Moseley was at pains to assert his priority.[14] Five months later a new rival emerged in Frederick Gye, director of the Royal Italian Opera in Covent Garden, who claimed to have mooted the possibility of a 'Glass Street' ten years before, in a paper delivered to the Institute of Civil Engineers.[15] Indeed, similarities can be discerned between all these projects and ideas bruited in the late-1840s by Charles Pearson and Charles Blacker Vignoles.[16] Then there were schemes, ostensibly directed towards the same ends, which eschewed the vogue for glass, in pursuit of different re-imaginings of the metropolitan cityscape. The most remarkable of these was John Pym's Super-Way, a forbidding iron monolith presented to another select committee in May 1854.[17]

Not one of these projects was ever realized. The GVW belongs amongst cityscapes and technologies that bear no clearly discernible relation to the present except to sound a minatory note about trusting too

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13 *Committee on Metropolitan Communications,* vi.

14 Ibid, 53-57, 97.

15 'Mr Gye's plan for a Glass Street', *The Builder,* 13 (1855), 603-604. Gye's Glass Street was to have been more refined and exclusive than either Paxton or Moseley's. There were, for example, to be no railways. The model was, apparently, the Parisian Arcade as backdrop to the aesthetic culture of the *beau monde.* For the imaginative space occupied by such arcades in mid-nineteenth century London see John Timbs, *Curiosities of London,* (London: David Bogue, 1855), 17-18.

16 For Pearson, see Charles Pearson, *Letter from Charles Pearson to W.H.Ashurst, Esq,* (London, 1845); for Vignoles, PP.1837-38. XXV. *Second Report of the Irish Railway Commissioners,* 'Appendix A', 32-34.

17 PP.1854.XIV. *Select Committee on Metropolitan Bridges,* 85-87.

far in radical urban visionaries.[18] By a curious paradox it becomes trapped in the amber of its immediate circumstances, impervious as it has been to the bridging effects of contingency and change. It existed and exists solely in a handful of documentary gestures towards what might have been: press reports; Paxton's deposition to the select committee; a crude aerial perspective; and a watercolour that has ended up in the Victoria and Albert Museum. That even this much has come down to us is testimony to Paxton's cachet, then and since. For Pym's Super-Way there is barely anything at all.

The central assumption of this essay is that response to these pictures is affective, involving the formation of judgments regarding them prior to the application of any more rigorous hermeneutic, and that this is true both now and at the time they were produced, albeit with different emphases. *Because* none of these representations is a work of art, this affectivity is for the most part conditioned by aesthetic coding, in a manner easy enough to state, though complex in implication.[19] The GVW, and in more subdued fashion the Crystal Way, are what the mid-nineteenth century is supposed to look like. A modernist sensibility might find them kitsch, but before this comes about there will be recognition (there can be no doubt that what we are looking at is what the mid-nineteenth century is supposed to look like) and a conviction of rightness, such that for all it might be grasped that the GVW never existed, there is no revolt against the idea of its possibility. By contrast, Pym's Super-Way does not accord with expectations. It is unrecognizable, in that of itself, without its skirt of tenements and boulevards, it would preclude the ascription of a definite time and place; and more than a little uncanny. What needs to be stressed is that these responses, of recognition and unease alike, should not be regarded as trivial preliminaries to historical understanding. On the contrary, they should be

18 Ruth Eaton, *Ideal Cities: Utopianism and the (Un) built Environment,* (London: Thames & Hudson, 2002); Richard Sennett, *Flesh and Stone: The Body and the City in Western Civilization,* (London: Faber & Faber, 1994), 283-316.
19 Raphael Samuel, *Theatres of Memory: Past and Present in Contemporary Culture,* (London: Verso, 1994), 381-389.

treated as the grounds of a form of historical understanding, an understanding of configurations of visibility, enabled in and by a given context. The prime material for the historical investigation of these structures is what is shown in them, or what is not shown, and how it is shown, or occluded. For an 'object' such as the GVW, and maybe for any comparable technological/architectural imaginary, an aesthetic component in the *analysis* is unavoidable. In the event of it being avoided the study will lose a great deal of focus.

I.

When the aesthetic is met with in the discipline of history of technology it is more often than not in the service of conceptions of technology as malign and destructive. The massiveness of the machine tells of its capacity to obliterate resistance;[20] its minuteness of the temptation to think of it as something natural. Opaque machineries are keepers of dark secrets of subversion and control – it is no accident that the term 'black box' originated in a missile technology.[21] Machines built to be smooth, sleek, and streamlined, are assertions of phallocentric dreams of conquest.[22] There lurks the threat of an alternative heuristic, in which the sleek surfaces of technological modernity are embraced precisely because of the affront they represent to received humanist notions of val-

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20   Lewis Mumford, *The Myth of the Machine: I. Technics and Human Development and II. The Pentagon of Power,* (London: Secker & Warburg, 1967/1971); and, much more hysterically, Jacques Ellul, *The Technological System,* tr. J.Neugroschel, (New York: Continuum, 1980). For commentary see Thomas Hughes, 'Machines, Megamachines, and Systems', in Stephen Cutcliffe & Robert Post, eds, *In Context: History and the History of Technology,* (London, 1989), 106-119.

21   Thomas Hughes, *Rescuing Prometheus: Four MonumentalProjects that Changed the Modern World,* (New York: Vintage, 2000), 136; Langdon Winner, 'Upon Opening the Black Box and Finding it Empty', *Science, Technology and Human Values,* 18 (1993), 362-378.

22   Susan Sontag, 'The Imagination of Disaster', in *Against Interpretation,* (New York: Farrar, Strauss, & Giroux. 1966), 209-225; Erich Fromm, *The Anatomy of Human Destructiveness,* (London: Jonathan Cape, 1974), 342-358; Susan Leigh Star, 'Power, technologies and the phenomenology of conventions', in John Law, ed, *A Sociology of Monsters: Essays on Power, Technology and Domination,* (London: Routledge, 1991), 26-56; Judy Wajcman, *Feminism Confronts Technology,* (Cambridge: Polity Press, 1991).

ue.[23]

Besides arising from a wish to avoid the straitjacket of 'technics-out-of-control',[24] I would suggest two reasons for scholarly wariness when it comes to the 'aesthetic'. The first is that in Marxist traditions the aesthetic qualities of technology are secondary qualities, the froth on the deep waves of technological development. Siegfried Giedion called his project "anonymous history", and one explanation for why his *Mechanization Takes Command* eschews direct comment on the aesthetics of its evidentiary base is that, belonging to the realm of individual response, this might have been felt to undermine the foundational premise of anonymity.[25]

Second, insofar as the modern academy aims for liberal consensus, the aesthetic can be politically embarrassing. While much poststructuralist criticism has been aesthetic if not in intent, then definitely in mood – Foucault is the best example, and the one of most relevance to historians of technology – this has been at the cost of an abstraction from 'lived experience', and an associated contempt for liberal nostrums about human agency.[26] Foucault's *Discipline and Punish* is not so much about techniques of surveillance as about the *art* of techniques of surveillance, and as such is more than a little enraptured by the totalitarian impulses it documents.[27] It is the danger of this kind of complicity that

23 Stephen Kern, *The Culture of Time and Space, 1880-1918,* (London: Harvard University Press, 1983), 10-35; Richard Pioli, *Stung by Salt and War: Creative Texts of the Italian Avant-Gardist F.T.Marinetti,* (New York: Peter Lang, 1987).

24 Langdon Winner, *Autonomous Technology: technics-out-of-control as a theme in political thought,* (Cambridge, Mass.: MIT Press, 1977).

25 Siegfried Giedion, *Mechanization Takes Command,* (New York: Oxford University Press, 1948), 3.

26 Hayden White, 'Foucault Decoded: Notes from Underground', in *Tropics of Discourse: Essays in Cultural Criticism,* (Baltimore: Johns Hopkins University Press, 1985), 230-260; Richard Rorty, *Contingency, irony, and solidarity,* (Cambridge: Cambridge University Press, 1989), 61-69; Terry Eagleton, *The Ideology of the Aesthetic,* (Oxford: Blackwell, 1990), 1-12.

27 Michel Foucault, *Discipline and Punish: The Birth of the Prison,* (Harmondsworth: Penguin, 1991), 205-207. For an attempt to apply Foucauldian aesthetics to ferrovitrous architecture see Tony Bennett, 'The Exhibitionary Complex', in *The Birth of the Museum: history, theory, politics,* (London: Routledge, 1995), 59-88.

haunted the Frankfurt School, and that led to its distrust of the claims of the conventional aesthetic to constitute a realm of experience impervious to the structural determinants of alienation.[28] Alternatively, aesthetics can be pressed to the forging of value-laden distinctions between different forms of experience, such that some are regarded as more fully 'human' than others.[29] Unsurprisingly, scholars of technology have been unwilling to engage with aesthetics on such terms, when deployment of the concept has so often been revelatory of a disabling political commitment of one kind or another. Walter Benjamin, Humphrey Jennings, Wolfgang Schivelbusch, and Michel Serres have been exceptions – and of these, only Serres has been unabashed in his embrace of the aesthetic.[30]

For the objects of present concern – communications technologies in industrialized urban settings – a third reason for the disapprobation can be conjectured. As Leo Marx, Thomas Hughes, and Rosalind Williams have in different ways suggested, the aesthetic impact of technology is most deeply felt when the technology in question can be understood as

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28 Eagleton, *Ideology of the Aesthetic,* 341-365. The *locus classicus* is, of course, Walter Benjamin, 'The Work of Art in the Age of Mechanical Reproduction', in *Illuminations,* ed. Hannah Arendt, (London: Harpercollins, 1973), 211-214. On later manifestations see the admirably succinct summing up in Martin Jay, 'Habermas and Modernity', *Praxis International,* 4 (1984), 1-14.

29 Roger Scruton, *The Aesthetic Understanding: Essays in the Philosophy of Art and Culture,* (South Bend: St Augustine's Press, 1998), 247-250. When Scruton thinks aesthetically about technology – as in his strange denunciation of Swedish forks – it is to buttress a commonsensical and conservative standard of utility. See *The Aesthetics of Architecture,* (Princeton: Princeton University Press, 1979), 237-256. For an especially clear-cut mid-nineteenth century denial that it is meaningful to talk about such a thing as technological aesthetics see Matthew Arnold, *Culture and Anarchy: An Essay in Political and Social Criticism,* 1st ed, (London: Smith, Elder & Co., 1869), 77-79.

30 Walter Benjamin, 'One Way Street', in *One Way Street and Other Writings,* (London: Verso, 1979), tr. E.Jephcott & K.Shorter, 45-104; Humphrey Jennings, *Pandæmonium: The Coming of the Machine as seen by Contemporary Observers,* (London: Macmillan, 1995); Wolfgang Scivelbusch, *The Railway Journey: The Industrialization of Time and Space in the Nineteenth-Century,* (Oxford: Berg, 1986), and idem, *Disenchanted Night: the Industrialization of Light in the Nineteenth Century,* (Oxford: Berg, 1988) – a book that is at its weakest when trying to capture aesthetic experience, at which junctures the Freudianism becomes coddish; Michel Serres, 'Turner Translates Carnot', in *Hermes: Literature, Science, Philosophy,* (Baltimore: Johns Hopkins University Press, 1982), 54-62.

constitutive of the built environment, and when imagined alternatives to the built environment are weakened to the point where they are no longer legitimate foci for hope.[31] It is when the look, feel, taste, smell of the thing become of paramount importance (rather than its use, for example), that it has achieved totality. Railways are often taken as the paradigmatic technology of this kind.[32] "They have raised those railway embankments up," William Makepeace Thackeray said, "and shut off the old world that was behind them. Climb up that bank on which the irons are laid, and look to the other side – it is gone."[33] The best history of a technological aesthetic to have appeared in recent years – Rosalind Williams' *Notes on the Underground* (1992) – is suffused with dread that the conditions of an infernal urban modernity might ultimately prove inescapable.[34] As such, the book bears a close resemblance to Freudian analyses in which the aesthetic or "imaginal" features of technology are regarded as pathological, and their presence treated as proof that the

31   Leo Marx, *The Machine in the Garden: Technology and the Pastoral Idea in America,* (Oxford: Oxford University Press, 1963); Rosalind Williams, 'Cultural Origins and Environmental Implications of Large Technological Systems', *Science in Context,* 6 (1993), 377-403; Thomas Hughes, 'The Evolution of Large Technological Systems', in W.E.Bijker, T.S.Hughes, & T.J.Pinch, eds, *The Social Construction of Technological Systems: New Directions in the History and Sociology of Technology,* (Cambridge, Mass.: MIT Press, 1987), 51-82; Bertrand Gille, *The History of Techniques,* 2 Volumes, tr. P.Southgate & T.Williamson, (New York: Gordon & Breach, 1986), I.1-96. The attraction of network analysis, for scholars as diverse as Thomas Hughes, Bruno Latour, and André Guillerme, would seem to derive at least in part from an aesthetic disquiet with the paranoia that often attends thinking about totalizing *systems*. See, for example, the self-consciously 'apolitical' analyses in Thomas Hughes, *Networks of Power: Electrification in Western Society, 1880-1930,* (Baltimore: Johns Hopkins University Press, 1983); Bruno Latour, *Science in Action: How to follow scientists and engineers through society,* (Cambridge, Mass.: Harvard University Press, 1987), and idem, 'A Culture of Humans and Nonhumans', in *Pandora's Hope: Essays on the Reality of Science Studies*, (Cambridge, Mass.: Harvard University Press, 1999), 174-215; André Guillerme, 'Network: Birth of a Category in Engineering Through the French Restoration', *History and Technology,* 8 (1992), 151-166.
32   Sussman, *Victorians and the Machine,* 10; Michael Freeman, *Railways and the Victorian Imagination,* (New Haven: Yale University Press, 1999), 27-56.
33   Quoted in Richard Altick, *The Presence of the Present: Topics of the Day in the Victorian Novel,* (Ohio: Ohio University Press, 1991), 183.
34   Rosalind Williams, *Notes on the Underground: An Essay on Technology, Society, and the Imagination,* (Cambridge, Mass.: MIT Press, 1992).

cultural subject has already succumbed to the lure.[35]

Where Williams' book is invaluable is for showing that there *was* an aesthetic component to nineteenth-century debates about the 'machinery question',[36] and for sketching a schematic of how observers could and did respond aesthetically to the material possibilities opened up in a period of exceptionally rapid technological change.[37] Other recent work by cultural historians, notably that of Linda Nead and Kate Flint, has likewise broadened our understanding of these aspects of Victorian urban experience – and in particular, of the special significance of London as a site of the mid-century technological imaginary.[38] London – the London of Dickens 'Staggs' Gardens and the Embankment project, of the Crystal Palace and the 'City of Dreadful Night', of masterless men and the *bon ton* – has always been fertile ground for the exploration of what might be called the social logic of aesthetic response.[39] If there is an query to be lodged against this literature, it is for a certain lack of methodological finesse when it comes to technology, a failure in distinc-

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35 C.f. Robert Romanyshyn, *Technology as Symptom and Dream,* (London: Routledge, 1989), 1-15.

36 Maxine Berg, *The machinery question and the making of political economy,* (Cambridge: Cambridge University Press, 1980), is invaluable, but disappointingly vague on the aesthetics of the factory debates. For a very stark reminder that many Victorians deplored factory life simply because it was so *ugly*, see William Dodd, *The Factory System Illustrated,* (London, 1842).

37 See also Jonathan Crary's important, but over-theorized, *Techniques of the Observer: On Vision and Modernity in the Nineteenth Century,* (Cambridge, Mass.: MIT Press, 1992).

38 Linda Nead, *Victorian Babylon: People, Streets and Images in Nineteenth-Century London,* (New Haven: Yale University Press, 2000), 27-62; Kate Flint, *The Victorians and the Visual Imagination,* (Cambridge: Cambridge University Press, 2000), 1-39, 139-166; and the essays collected in Celia Fox, ed, *London: World City: 1800-1840,* (New Haven: Yale University Press, 1992). The model, particularly when it comes to the fashioning of narratives of resistance, is Marshall Berman, *All That Is Solid Melts Into Air: The Experience of Modernity,* (London: Verso, 1983), 131-171: but this literature has also drawn heavily upon an older and more conservative tradition in urban cultural history, exemplified by Richard Altick, *The Shows of London,* (Cambridge, Mass., 1979) and Donald Olsen, *The City as a Work of Art: Paris, London, and Vienna,* (New Haven, 1986).

39 Charles Dickens, *Dombey and Son,* (1844), (Harmondsworth: Pengion, 1985), 120-122; Gareth Stedman Jones, *Outcast London: A Study in the Relationship between Classes in Victorian London,* (Harmondsworth: Penguin, 1971); Judith Walkowitz, *City of Dreadful Night: Narratives of Sexual Danger in Late-Victorian London,* (London: Virago, 1992).

tion that reproduces the familiar paranoid imputation to machinery of monolithic agency. One of the aims of the present essay is to propose a corrective, via a reversal in the polarity of the analytical presuppositions of the cultural historians. That is, rather than treating technologies as an item of the mid-nineteenth century urban aesthetic, I will be treating urbanity, in both senses of the word as an item in the construction of the mid-nineteenth century technological aesthetic.

It would be presumptuous to claim that this study demonstrates the broad validity of aesthetic approaches to the history of technology. Rather, the GVW will here serve as a means of testing the strength of the various objections to the aesthetic I have sketched above. The primary aim is to clear some ground, and at the moment it seems to me that it is to this mainly negative end that the category 'aesthetic response' can be most usefully applied. I will start by examining in more detail the nature of the impact of the GVW, the Crystal Way, and the Super-Way. I will argue that these representations are characterized by an 'aesthetic of absence', and that this in turn is evocative of a 'presence' contested in recent debates within the domain of technology studies. I will then proceed to a consideration of the pictures as artifacts: the context of their production. This context required some specific idealizations of socio-technical relations, strategic gaps in what was being shown that, taken together, constitute the phenomenon of absence. To fill in the gaps the pictures must be interrogated not as artifacts but as texts, and attention paid to their contexts of *reception,* both contemporary and current.[40] 'Reading' the GVW and its associated projects also foregrounds the problem of presence, here understood to be whatever it takes for the aesthetic of absence not to be ontological in a general sense, but merely so relative to given contexts of production. I will try to indicate, through an aesthetic reading of the GVW, that the scholarly practice of reading has limits: and in particular, that the very idea of technology as text confirms to the hermeneutics of suspicion that is so salient a feature of

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40   Wolfgang Iser, *The Act of Reading: A Theory of Aesthetic Response,* (London: Routledge, 1978).

objections to the aestheticization of technology.

II.

We know that none of these structures was ever built, that flesh and blood, masonry and mortar, iron and glass, never entered into these imagined spatial/social relationships. Nobody ever promenaded along the GVW, or was shut up in the Super-Way. Nothing was ever bought in Paxton's boutiques; no pneumatic trains ran their silent courses. In some ways, though not in all, our hindsight about the pictures mirrors the foresight of their creators: these were plans never meant to be realized, or at least not in the form they take here. If, as Madelaine Akrich has written, in order to describe a technology "we have to go back and forth continually between the designer and the user, between the designer's potential user and the real user, between *the world inscribed in the object* and *the world described by its displacement"* then, *qua* technology, these pictures cannot be described at all.[41] The second set of terms – users, real users, a world adjusted to the new fact of the technology – never obtained.

But it is the absence of reference to materiality and praxis that make the pictures so fascinating. Mary Poovey has identified the 'production of abstract space' as one of the decisive features of mid-nineteenth century British cultural formation. It involved, *inter alia,* the isotropic rendering of geography as geometry, the idealization of process, and the effacement of productive agency: its classic form was the *plan,* of the kind drawn up by Paxton, Pym and Moseley. It may well be that the abstractions effected on architects' drawing boards, or in the pages of factory utopias and Benthamite administrative prescription, can be read as tending towards the conceptualization of built environments as "totalized fields of power".[42] But before proceeding to an ex-

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41 Madelaine Akrich, 'The De-Scription of Technological Objects', in Wiebe Bijker & John Law, eds, *Shaping Technology/Building Society: Studies in Sociotechnical Change,* (Cambridge, Mass.: MIT Press, 1992), 205-224: on 208-209.

42 Mary Poovey, *Making a Social Body: British Cultural Formation, 1830-1864,* (Chicago: Chicago University Press, 1995), 25-54.

amination of some of the ideological implications of the will to "inscribe" futurity, a word needs to be said about certain more recent reductions of technology to modes of representation.

My title makes the claim to 'read' the GVW, with the inference that it is to be thought of as a text. Insofar as no material 'fact' was precipitated from the project then what is indeed left is the play of signifiers. But my reading of the GVW does not support the 'reading' of material culture as general scholarly practice. Rosalind Williams counsels that because most past technologies have no material presence, have become "utterly remote", historians should avoid the naïve assumption that they were real, and attend instead to how they were articulated.[43] But to suppose that vanished machines exist*ed* solely as or in texts is a conceit, privileging as it does the activity upon which the scholar's cultural authority rests – that is, reading, as opposed to, say, putting things together, or fixing them.[44] The effect is an emptying out of the object of investigation and the abstraction of the experience of using it.[45] Oddly, for a tendency in which 'determinism' is a discursive taboo, machines, buildings, networks etc are explicable only if reduced to something else.[46] The problem is to formulate a criticism of these trends without falling back on discredited fetishisms of machine agency and inventive genius.[47] It is in this respect that the history of the GVW, and of Moseley

43   Rosalind Williams, 'France at the Crystal Palace', *Victorian Studies,* 38 (1994), 129-130.

44   For which see Harden White's comments in 'The Absurdist Moment in Contemporary Literary Theory', *Tropics of Discourse,* 261-282.

45   Williams, *Notes on the Underground;* Keith Grint & Steve Woolgar, 'On Some Failures of Nerve in Constructivist and Feminist Analyses of Technology', *Science, Technology & Human Values,* 20 (1995), 286-310; Madeleine Akrich and Bruno Latour, 'A Summary of a Convenient Vocabulary for the Semiotics of Human and Nonhuman Assemblies', in Bijker & Law, *Shaping Technology/Building Society,* 259-264.

46   Bruno Latour, 'The flat-earthers of social theory', in M.Power, ed, *Accounting and Science: natural Inquiry and Commercial Reason,* (Cambridge, 1996), xi-xvii. Latour often argues that it is precisely this kind of reductionism he wants to avoid, and it is true that 'human-centered' critiques of his work (e.g. Simon Schaffer, 'The Eighteenth Brumaire of Bruno Latour', *Studies in History and Philosophy of Science,* 22 (1991), 174-192; Harry Collins & Steve Yearly, 'Epistemological Chicken', in Andrew Pickering, ed, *Science as Practice and Culture,* (Chicago: Chicago University Press, 1992), 301-326) beg nearly as many questions as they raise.

47   See, for example, Angus Buchanan, 'Theory and Narrative in the History of Technology', ↗

and Pym's variations on the theme, is of more than antiquarian interest. What I hope to show by their example is that what counts as a legitimate reading of the aesthetics of absence is illegitimate, and potentially baneful, for its opposite.

III.

The representations are not of anything real. But *they* are real enough. *They* have a history. They served the particular purposes of particular people in particular circumstances. I have already sketched the most pertinent of these, and argued that there is not much to be gained from any more detailed scrutiny of them – indeed that, given the failure of any of the schemes to come to fruition, there are only the barest bones of a context to scrutinize. But while true, this does not quite answer the present case. In order to grasp the dialectic of fantasy and reality that constituted the Crystal Ways as artifacts amenable to historical elucidation, it will be necessary to delve a little deeper into one of the more egregious of the GVW's functions – that is, the grand utopian project as instrument of self-fashioning. I will be following Michael Baxandall's suggestion that it is here, in issues of patronage and social status, that utility and aesthetics can be discerned in closest propinquity. This turns out to be something of a godsend, because the further utility is defined by its propinquity to (pure) aesthetics, the easier it is to distinguish the artwork from the achieved technology.[48]

Paxton, Moseley and Pym produced what Ken Baynes and Francis Pugh have called 'presentation drawings'. Moseley's aside, they contain no specifications, and they do not show the working of moving machine parts. Their purpose was to increase the "perceptual span" of the archi-

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↘ *Technology and Culture,* 32 (1991), 365-376; and the rather more judicious survey in John Staudenmaier, 'Recent Trends in the History of Technology', *American Historical Review,* 95 (1990), 715-725. See also Joel Mokr's influential *The Lever of Riches: Technology, Creativity, and Economic Progress,* (Oxford: Oxford University Press, 1990).

48 Michael Baxandall, *Patterns of Intention: On the Historical Explanation of Pictures,* (New Haven: Yale University Press, 1985), 12-40; idem, *Painting and Experience in Fifteenth-Century Italy,* 2nd ed, (Oxford: Oxford University Press, 1988).

tect/engineer, his ability to judge how a given project might proceed, and how it probably would not.[49] They were also intended to puff the projector, a man in possession of sufficient professional resources to imagine such structures coming into being and, by inference, commanding the means necessary for realization. In these particular cases, presented as they were to organs of state, the goal was not so much to obtain a contract (the commercial ideology of the time would have discouraged this expectation)[50] as for the publicity, and concomitant attraction of investors.

To do all this, the drawings had to make a double idealization. They were, first, representations of ideal sociotechnical relations. What we see in Paxton and Moseley's arcades are appearances as codes for desired states of behaviour. We see well-dressed gentlemen and ladies window-shopping, chatting, taking their time, at ease with their environment; glass and iron wrought into familiar Gothic and Italianate forms; and machines, the odd trains in Moseley's basement, working without apparent effort. It is impossible to tell what is being fitted to what, the people to the architecture and machinery, or vice versa. This is the point. As panaceas for ruptures in sociotechnical relations, the dirt and discomfort attending real strolls through the heart of the real London, the pictures could hardly be expected to draw attention to potential disturbances in their orderings.[51]

Second, the drawings involve an idealization of the architect/engineer as agent of sociotechnical utopia. It would be easy to have the GVW valorize its designer as a man seeking to engineer a better life for future generations, yet stymied by the narrow-mindedness of his contemporaries.[52] This would be to miss the contextual paradox of the pic-

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49 Ken Baynes & Francis Pugh, *The Art of the Engineer,* (Guildford: Lutterworth, 1981), 11-15.

50 Searle, *Entrepreneurial Politics,* passim.

51 Arnold Pacey, *The Maze of Ingenuity: Ideas and Idealism in the Development of Technology,* 2nd Ed., (Cambridge, Mass.: MIT Press, 1992).

52 C.f. modern narratives of the heroic engineer, such as Subrata Dasgupta, *Technology and Creativity,* (Oxford: Oxford University Press, 1996); Henry Petroski, *Invention by Design: How Engineers Get from Thought to Thing*, (Cambridge, Mass.: Harvard University ↗

tures, which is that they were idealizations and recognized as such, but that their success depended upon the marshalling of reality effects. The pictures might conform to an aesthetic of absence but it was absence aping presence: they had to look real. The marshalling of reality effects was a function of the projector's financial and professional resources, which would in turn determine his capacity to bring *some kind* of project to completion. The pictures, then, are advertisements, assertions of status. The difference between the GVW and the Crystal Way – between colour and black and white, full and truncated perspectives, fine detail and blocks of blank space – is the difference between Joseph Paxton and William Moseley – between the hero of 1851 and architect of the most celebrated building of its century, and a minor professional who had scraped a career out of designing neo-Gothic churches, prisons, and girls' schools.[53] And thus it was that Paxton's "splendid designs" were recommended to the consideration of parliament, while Moseley and Pym had to make do with the usual thanks for their time. This despite Paxton's insouciant and, in the context of widespread criticism of government expenditure, untimely admission that the state would have to underwrite the enterprise, funds unlikely to be forthcoming on so grand a scale unless investors were guaranteed of a return.[54] As an agent of sociotechnical utopia Joseph Paxton was, in London in 1855, *sans pareil*. It didn't matter that of all the schemes his was politically and financially the least expedient.[55]

It might be objected that all this is to make the pictures a little too self-referential. After all, the problems they addressed – congestion,

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↘Press, 1996); and, better, Thomas Hankins & Robert Silverman, *Instruments and the Imagination,* (Princeton: Princeton University Press, 1995).

53 For Moseley's architecture see *The Builder,* 4 (1846), 277-283; and his career more generally, Howard Colvin, *A Biographical Dictionary of British Architects,* (London: John Murray, 1978), 563.

54 *Committee on Metropolitan Bridges,* 85-86; *Committee on Metropolitan Communications,* 55, 87-88, 93; 'The Street of Glass and Metropolitan Communications', *The Builder,* 13 (1855), 281.

55 Select Committees were generally conceived as tools for fiscal retrenchment, which makes Paxton's grandeur all the more remarkable. See Norman Chester, *The English Administrative System, 1780-1870,* (Oxford: Oxford University Press, 1981), 98-105.

crime, over-crowding, pollution – were pressing enough. The presenta-
tion drawings were about more than career advancement and invest-
ment opportunities. We should allow that the projectors' impulses were
charitable before they were anything else. The arcades were to be regen-
erative in the widest sense. The very physical fact of a structure ap-
proaching the ideals set forth by Paxton and Moseley, would be a coun-
terpoint to the prevailing metropolitan aesthetic of darkness and decay.
It would be an economic stimulus to areas of the city resistant to the
general prosperity. And it would provide moral lessons to all who gazed
upon it. The glass arcade was architecture as aspiration: all the projec-
tors imagined slum-dwellers raising their eyes to a realm where fashion-
able ladies, clean air and useful knowledge circulated, a realm that
could be theirs if they were sufficiently provident to attain the ranks of
the respectable. Gye's street, for example, incorporated "reading-rooms,
exhibition rooms, large apartments for public meetings, baths, cafés on
the Paris plan, & c". The density of improving influences would increase
where property values allowed, in other words in those places which
needed improvement most.[56] On this reading, the marshalling of reality
effects was urgent in proportion to the urgency of metropolitan reform:
far from being ends in themselves, they were just stages on the route to
regenerative efficacy.

In fact, this efficacy was itself dependent upon an idealizing move.
All the projectors showed an aversion to contamination. The regenera-
tive space was such by what was to be excluded from it: dirt, certain
forms of economic activity, and certain types of people. "The streets of
London", Paxton said, "particularly in the City, are full of filth, arising
from the dirt and smoke emitted from the chimnies, which I propose to
get rid of in this arcade by putting a roof upon it, and by so arranging
the ventilation as to prevent all this heavy dirt and filth from coming
into the arcade." Aware that many retail activities were productive of
"filth" of one kind or another, Paxton and Moseley emphasized that
shops and residences would be "fashionable", while Gye admitted "shops

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56 'Mr Gye's Plan for a Glass Street', *The Builder,* 13 (1855), 603-604.

of every variety of trade, except such as might by their nature be unfitted to the place." Moseley went so far as to propose an entrance charge (1d): this would have presented logistical difficulties for the GVW, which ran at ground level. Paxton, unlike Moseley, felt that the social character of the arcade should reflect the social character of the contiguous district, with the GVW grand in the West End and merely respectable elsewhere.[57] Both Moseley and Paxton's presentation drawings show no one who is not unthreatening and well-heeled. It is likely that, had any of the arcades been built, this would have been the actual appearance of its clientele, at least until the novelty wore off and cultural depreciation set in. The pictures are thus not ideals *per se,* but representations of ideal states of affairs that would have to obtain were the architecture/technology to solve the problems that, if left *un*solved, would rob the enterprise of most if not all of its meaning.

Regenerative efficacy was also a matter of managing the elements – sunlight, air, smoke, and ordure being the most significant. The committee summed up Paxton's proposal thus: "the benefit which is to be derived from the population of London, more especially the working-classes, must depend entirely upon the air they breathe in that promenade being what we call good wholesome fresh air." Paxton was praised for the "minute details" he went into "to show the purity of the air, to be breathed by the inhabitants of the Boulevard, and the light and ventilation of the whole."[58] And, just as the glass roof would keep dirt and smoke out, so it was necessary to banish manufacturing processes from within. This required finessing, however, because the arcades were designed for ease of communications, and communications technologies could be dirty. Steam trains, for example, would have defeated the

57 *Committee on Metropolitan Communications,* 53, 56, 80-82; 'Gye's Glass Street', 603. On Paxton's pre-occupation with air quality at this time see his *What is to become of the Crystal Palace?,* (London: Bradbury & Evans, 1851), with its arguments about the "lungs of London"; and Francis Fuller's rejoinder, based on the social exclusivity of Paxton's ruralizing vision, *Shall we spend £100,000 on a Winter Garden for London?,* (London: John Olliver, 1851).
58 *Committee on Metropolitan Communications,* 90; 'Street of Glass', 281.

whole object, which is why the trains so prominent in the foreground of the Crystal Way, and rather less conspicuous to the sides of the GVW, do not appear to be attached to locomotive engines. (What the source of motive power was is a question to which we will return below.) There was also anxiety about horses. Moseley did not want horse-drawn vehicles entering the arcade proper, impeding the movements of pedestrians and clogging it with animal waste.[59] On Paxton's scale horses were more readily admitted, and although it is not surprising that the presentation drawing contains no visual reference to excrement, it should be noted that there are also no road-sweepers. "Sir Joseph" could afford more slippage than could William Moseley between efficacious idealization and idealization as a mode of utopian absence. Or, better, because the Crystal Way could not be made to look as real as the GVW, Moseley had to put more effort into making it sound as if it answered the select committee's case – unsuccessfully, as it transpired.

The crystal boulevards should be conceptualized, says Isobel Armstrong, as extensions of the greenhouses Paxton had built his reputation upon, "means of transcendentalizing the urban flow, creating a ceaseless hydraulic circulation … separating people out from the immediate conditions of their experience and from their waste products, which circulated in the ground below."[60] Glass was central to cutting-edge notions about the regulation of built environments.[61] Paxton's technical innovations in glasshouse design, reaching an apotheosis at the Crystal Palace, had all aimed at control over temperature, humidity and luminosity. A glass roof of the size demanded by the GVW would foster the illusion that one wasn't 'inside' at all. If "immediate conditions" of experience are parsed as 'natural conditions' of experience, which they tended to be by mid-nineteenth century urban reformers, then walking

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59 *Committee on Metropolitan Communications,* 53.

60 Isobel Armstrong, 'Transparency: Towards a Poetics of Glass in the Nineteenth Century', in Francis Spufford & Jenny Uglow, eds, *Cultural Babbage: Technology, Time and Invention,* (London: Faber & Faber, 1996), 123-148: on 139.

61 Georg Kohlmaier & Barna von Sartory, *Houses of Glass: A Nineteenth-Century Building Type,* tr. J.C.Harvey, (Cambridge, Mass.: MIT Press, 1986), 7-40.

through a crystal arcade was not an estrangement in the same way as wandering the aisles of St Paul's Cathedral or, a decade later, riding the Metropolitan Railway were estrangements. The great acclaim that had greeted the roofing over of the Hyde Park elms in 1851 indicates how crucial it was to accommodate nature to symbolic manifestations of modernity.[62] Glass was, in this respect, a protean medium. It enabled artificiality to be imbued with all the virtues of the given; and, so transparent in itself, it diverted attention from the degree to which 'natural' environments were in fact subject to technical manipulation.[63]

It was also, of course, the vector of visibility. The arcades would not only be about the circulation of people, commodities and knowledge. They would be sites for the circulation of gazes. Always light would traverse the interface of glass, and always glass would act as a barrier to physical contamination.[64] The poverty of slum districts could be contemplated, but not touched or smelt; the grandeur of the arcade would amaze the eye, but that was not the same as having it (bodily) to oneself. Also, it could be argued that the appearance of an equal exchange of gazes was just that, an appearance.[65] Glass was not under all circumstances a *neutral* medium. Why was it that the arcades were always

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62 John McKean, 'Joseph Paxton, Crystal Palace, London 1851', in *Lost Masterpieces: Paxton, Dutert, McKim, Mead & White,* (Phaidon: n.d.), 27-30.

63 C.f. Roger Cooter, 'Anticontagionism and History's Medical Record', in P.Wright & A. Treacher, eds, *The Problem of Medical Knowledge: Examining the Social Construction of Medicine,* (Edinburgh: Edinburgh University Press, 1982), 87-108: "Air, once the very stuff of human breath, became in this body of thought an alien *thing* amenable only to the analytical understandings and moral and political interventions of environmental manipulators" (99). It is unfortunately beyond the scope of the present study to consider in detail the GVW and other arcades' relation to contemporary discourse of urban hygiene.

64 But not to moral contamination, and this was a worry. Moseley was asked: "According to the plan, the sides of the way are glass; you have described the district which you propose to go through as being of a very inferior description; would you not consider it proper and prudent, rather to shut out those objects from the eyes of the passengers above?" (*Committee on Metropolitan Communications,* 56). It might have been proper, but it wasn't prudent, unless you wanted a monstrosity like Pym's.

65 Edward Wachtel, 'To an Eye in a Fixed Position: Glass, Art and Vision', in J.C.Pitt, ed, *New Directions in the Philosophy of Technology,* (Dordrecht: Kluwer Academic Publishers, 1995), 41-61; see also Lewis Mumford, *Technics and Civilization,* (New York: Harcourt, Bruce, 1934), 124-131.

pictured in the daytime? Because at night, the balance would be tipped in favour of those looking in. The ladies and gentlemen would be exposed to the scrutiny of the slum-dwellers; not a bad thing in itself, except that the slum-dwellers would be *immune* to scrutiny. Whereas, on a sunny day, light would reflect from the glass, rendering the structure grandly and gaudily opaque – a phenomenon which had been much admired at the Great Exhibition. Those outside would still be edified, but in an unobtrusive manner, by quicksilver splendour. Paxton in particular, with his fetishization of 'light', exploited this property of sheet-glass in his imagined ideal, and was silent about what would happen when the weather failed to cooperate, or when the sun had set.

Having considered some of the contextual implications of the aesthetic of absence – of how what is not present can be both implied and denied by what is – we are now in a position to appreciate what is so odd about Pym's Super-Way. The first incongruity is that there are no people. We are looking not at an ideal of sociotechnical relations, but at a hunk of machinery, an ideal of purely technical relations. Second, Pym has narrowed his remit so far that the regenerative purpose is lost. He makes no claim for any moral potential to the structure. If, as claimed above, regeneration lent efficacy to the presentation drawings, then the Super-Way is one step further from 'reality' than the Crystal and Great Victorian Ways, to the extent that one wonders what inspired its creator to create it. Third, there is no glass (there are windows, but they bear a disconcerting resemblance to arrow-slits). The people presumed to be inside cannot see or get out; the people outside cannot see or get in, and moreover will be anxious about what the structure might house. What coercive forces are being held in check? The overall effect is of a fortress, not wholly inappropriate to a country on a war footing, but surely not what was intended. Finally, and this is why I think the image still has the power to disquiet, it is difficult to imagine such a structure ever decaying. The logic of glass was as fragile as its medium. The moment somebody decided to vandalize or deface it, with the advent of the first pea-souper, pregnant with coal-dust, the logic would be subverted (as

was to happen to the Crystal Palace after it had been moved to Sydenham).[66] The Super-Way, if built, would have been immune to both time and contingency. There is something incipiently totalitarian about such projections.

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66 Jeffrey Auerbach, *The Great Exhibition of 1851: A Nation on Display,* (New Haven: Yale University Press, 1999), 206-213. C.f. the mildly revisionist account in J.R.Piggott, *Palace of the People: The Crystal Palace at Sydenham, 1854-1936,* (London: Hurst & Company, 2004), 166.