



Errata

Several color plates are inaccurate in hue or value.

Plates 1 and 3 are too green. Plates 4 and 7 are too red.

Plates 12 and 13 are too red and too bright.

Plate 15 is too yellow.



National College of Art and Design Faculty of Design Department of Industrial Design

Sir Giles Gilbert Scott; Designing Battersea and Bankside Power Stations

by

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1) Sir Giles Gilbert Scott, R.A., R.I.B.A. President

INTRODUCTION

As Battersea and Bankside Power Stations contemplate their new lives as a leisure complex and an international gallery respectively, there have been requests from their present investors, Parkview International and the Tate Gallery, to recognise that these Power Stations have had previous lives. Designed by Sir Giles Gilbert Scott, these power stations, Battersea in 1932 and Bankside in 1947 captured the public's imagination as they represented an optimism for what the modern world would become. What is unfortunate about these stations is that their histories have never been considered as being happy ones. Designed with the responsibility of instilling the identity of power in their forms, they were expected to compensate for the confused power house designs of the previous fifty years. Even without such responsibilities, they had domestic problems of their own, their very function bringing about their doom: the stations' emitting gases ate into their fabric contributing to their becoming obsolete before their times, both closing down in the early eighties. They also had to address the debate of traditionalism and modernism which raged during their constructions; Sir Giles was put in an unsettling position, forced to make decisions as to which movement he would design in. There was every possibility that he could endanger his career, Goodhart Rendel described Sir Giles' work as been idiosyncratic having no place in British Architecture (Goodhart Rendel, R.I.B.A. Journal, Nov 1931). But according to C.H. Reilly Scott had proven himself "a man of high qualities" in his book, Representative British Architects of The Present Day, (1931) p.154. His first commission at the age of 22, was Liverpool Cathedral; which touched by a feeling of the sublime by the concentration of ornament and playfulness of light commands awe. Scott's attention to detail was unquestionable, he devoted the rest of his life to this Cathedral, insisting even with the introduction of modern technology that each stone block be hand crafted. In this Cathedral and in his other churches that followed Scott's gothic became increasingly monumentally modern have permanent value, such much so that every architect glories in it (Reilly, 1932, p.142).

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Scott worked on a variety of architectural projects from, churches, libraries, bridges, restoration work, power stations, electricity houses to the much loved red telephone box the K2. C. H. Reilly suggests that he would have liked to see Sir Giles be selected to design the R.I.B.A. building because he could be trusted to create a building of confidence and liking: "But for the quality of his design, there seems good reason (especially for those who believe in finding and trusting to a man rather than to a clever solution to a puzzle) to give him this building out of hand" (Reilly,1932, p.142). This is perhaps the reason why Scott was chosen to design the power stations because he would not be 'clever' for the sake of being clever, he would be honest.

This thesis proposes to look at the troubled histories surrounding Battersea and Bankside power stations, arguing that in the formulation of their identities they were influenced by form following function. In the case of power station design, my thesis argues that in the fifty years prior to Battersea (1932) an identity for structures devoted to the functioning of electric power was seriously compromised by their being housed in uncomplimentary architectural forms by both architects and engineers. Although early in the 20th century in Italy the manifesto of Futurism encouraged the genius of mechanisation, including electric power, as seen in the prophetic sketches of power station designs by Antonio Sant'Elia in 1913, these were not considered as models for British architecture. British architects were still preoccupied with ecclesiastical architecture and an architecture of self-assured monumentality.

Because Modernism's fundamental concepts were established around form and function (Banham, 1962, p17-18), these were imposed themselves upon Scott, like many other architects of the Thirties, urging him to re-create his own identity as an architect so as to sit under the umbrella of modernism. Scott responded by creating his own brand of architecture in the power stations which, while being a departure from traditionalism, never assumed the mantle of modernism. His architectural identity was

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2) Sir Giles G. Scott, Battersea Power Station, London (sketch circa 1931)

his own being in neither style, but it had a philosophy of construction and materials that allowed him to be appreciated by but not wholly accepted by modernists. Scott, like the modernists, demanded an honesty in the construction of buildings but, unlike the modernists, Scott's priority was how he manipulated materials to create forms that would complement the power stations' functions, rather than subscribing to the philosophy of modernism.

My thesis relies heavily on the writing of Dr. Gavin Stamp, because of his academic pursuit of the Scott family. Stamp treats the Scott family in an almost regal sense and sees Sir Giles' grandfather Sir George Gilbert Scott as the master. It is ironic that while Stamp argues for the restoration of many important architectural landmarks, Sir George G. Scott battled against the first architectural appreciation group, the Society for the Protection of Ancient Buildings, set up in 1877 specifically to challenge Sir George's desire to rebuild rather than restore Tewkesbury Abbey (Frampton, 1980, p.45). However this thesis doesn't deal with the Scott family, but relies on essays by Stamp on Sir Giles and his work. I appreciate the admiration Stamp has for Sir Giles' attempts to untangle himself from his own family's tradition of historical reminiscence in church building, only to entangle himself with his own interpretation of the road he considered modernism should have taken. Scott engages in a clever transition from traditionalism to modernism, which neither condemns styles nor does it renounce one in favour of the other. Because of this approach, Scott created two deserving pieces of modern architecture in Battersea and Bankside; through them he engendered Gavin Stamp's affections for power station design and now Stamp argues strongly for recognition of Scott's power stations as prime examples of modern architecture rather than just the familiar landmarks the public sees them as.

This thesis also relies on discussions held at the R.I.B.A. by Scott and others on modernism and on Scott's notebooks between circa 1902-1950; although these have

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and and a second solution of the second s In the second little information with regard to the power stations, I particularly like making reference to them as they give a good insight into Scott the man and Scott as architect. He was a considerate, modest and gentle man, his thoughts on modernism are admirably careful and his attention to his work and the detailing of that work enviable.

Other major sources of reference have been my visits to the two stations. I think it was important to experience first hand knowledge of their physical beings. They are, in a word, enormous. The similarities and contrasts between both are equally as impressive as their size. The two notable contrasts are first, their interiors: Battersea having elaborate Art Deco tiling in the controlroom and in turbine hall A, by Halliday and Agate, and Bankside, expressionless, unadorned plain concrete walls by Scott. Secondly, an aura surrounds them; Battersea is cheerful, Bankside is incredibly sombre. It was important to witness them in their derelict states, obvious testimonies to the need for heritage groups.

Other references I include are interviews with Jon Luxton (an architect for Parkview International) and Richard Humphries (Education and Public Relations Officer, Tate Gallery), Ray Ryan (Lecturer in architecture at U.C.D.) and Peter Legge (Consulting architect for Battersea redevelopment), all of whom were helpful in discussing the histories of the stations and their impending futures. The most helpful article has been Brian Little's on the death of Scott, since its details provide a good reference to pitch against Stamp's articles. On a secondary level, I have referred to writers on architectural modernism such as Pevsner, Hitchcock, Gossel and in particular Kenneth Frampton's book, "Modern Architecture" (1980) and Franco Borsi's, The Monumental Era (1987), because they examine in retrospect the nature of modernism with great insight.

The thesis is divided into three chapter, primarily focusing on the modernist movement of the 30's and 40's. The first chapter examines a basic history of power station design

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3) Sir Giles G. Scott, Bankside Power Station, London

leading to the creation of Battersea. It argues that power station design in Britain had no formal identity until Sir Giles was invited to design Battersea in 1932. Chapter two examines Sir Giles Gilbert Scott as architect, paying particular attention to the manner in which he established himself within the traditionalist/modernist debate. The chapter is not about traditionalism and modernism, but about the expression of Scott's own stand taken from his inaugural address to the R.I.B.A. in 1933 and his address to students in 1934, which displays the change in the identity of his work, as he Scott moved away from historicism of style to modernism of form. Chapter three as an examination of the power stations' forms observing how their construction embraces elements of traditionalism and modernism, creating a style that is idiosyncratic of Scott's. The thesis concludes with a brief look at stations today and how they now have to consider their futures serving new functions.



W. Curtis Green, Chiswick Power Station, London

CHAPTER 1: DRESSING POWER

The generating station, the building which housed the dynamo, became one of the most potent images of the new century, of progress, of the new world where all would be clean and bright and egalitarian; fast, glittering, efficient; a world of machines, of modern architecture, a world in which there would be everything for everyone and no more wars...(Stamp, 1979, Introduction, 'Temples of Power').

Such optimistic words summed up the excitement for the future, which was imagined during the infancy of the generating station at the turn of the century. And while Stamp states there is a "modern architecture" that should accompany this optimism, he does so with an image of Battersea Power Station in his mind. Stamp is an avid admirer of its creator, Sir Giles Gilbert Scott. Indeed, the book from which the quotation is taken opens with Sir John Betjeman's foreword, saying, "This book is a belated tribute to the mighty architect Sir Giles Gilbert Scott". Stamp would probably argue that Battersea was the first true power station, on the basis that its exterior was "expressive of its purpose"; it does, after all, command the supreme title of 'Cathedral of Power' (Stamp, 1979, Chapt; 'Battersea Power Station'). It is difficult to dispute because, prior to Battersea, it is hard to distinguish what the real appearance of the power station was. For example, the first electricity power stations, in Britian circa 1880₅ were not power stations at all, they were termed sub-stations and were situated at the back of public buildings such as opera houses and were used to supply only the immediate neighbouring area. Later, around the turn of the century, power stations looked like the entrances to railway stations such as Chiswick power station (1904) and, in the case of the Duke St. sub-station in London's Mayfair, it was hidden underneath a garden. However, remembering that Battersea was erected some fifty years after the first generating station was built leads to the question why generating stations had not engaged some common architectural identity for themselves over that half a century, so that the public could identify them and so that each station would



Gustaf Eiffel, Eiffel Tower, Paris

reflect the essence of the quotation which begins this chapter through a shared architectural aesthetic.

The answer can be found indirectly in the Great Exhibition of 1851, because Paxton's Crystal Palace represents the introduction of the engineer as architect. Even though Paxton himself was a gardener, his application of green house construction was multiplied in scale to create his Crystal Palace. Paxton in turn prompted a sense of confidence in engineering because through the materials, cast iron and glass, he used to construct the Crystal Palace, a new monumental engineered quality was displayed which matched those long-established qualities exemplified through stone in architecture.

The engineer was the new architect in the second half of the nineteenth century, although most of his work was limited to exhibition halls, train stations and bridges. Engineers such as Gustaf Eiffel, J.A.Reobling and Victor Contamin would be immortalised for their monumental constructions, such as the Eiffel Tower (1887-89), Brooklyn Bridge (1877), and the Galerie des Machines, Paris (1889). However, in Britain from the 1860's, "British structural engineering entered a fallow period that lasted for the rest of the century" (Frampton, 1980, p.31). Only towards the end of the century were attempts made to govern the use of electricity. "In 1878 the Old Gaiety Theatre became the first public building in London to be electrically lighted" (Cochrane, No date, p.42). Some eleven years later, in 1889, the Manderin Report was published which regularised electricity (Stamp, 1979, Introduction, 'Temples of Power'). It was also around this time that rivalries were beginning to stir between architects and engineers. In his book Architects in Industry, 1840-1940 1974, p.72, H. Brockman comments on the "frustrations" that were "being experienced by the architects of the time, who felt themselves being "seen off" by the engineers". But perhaps it was A. Beresford Pite's address to the London Architectural Association in 1893 that really hit home the distress that was being felt by architects, when he

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observed how exhausted architecture of the nineteenth century had become and how quickly their architectural presence was falling apart:

Are not we perhaps on the wrong track altogether, and only manufacture of our age is to be found in the works of engineers, mill and factory builders and gin-palace fitters?...Why shall architects segregate themselves...has not the Forth Bridge a piquant power of form, and a real, if not ideal beauty, without the assistance of what you and I call architecture?...Why are characteristic buildings of the ages such as the Crystal Palace and the Albert Hall, eminently works of architecture, though not of architects?, (Brockman, 1974, p.72)

Perhaps the challenge engineers presented to the architectural establishment was just what the architects needed. Brockman discusses how the architect had to "come down from his ivory tower into the market place", where he would have to examine "the context of his position as an artist", and this would be "the most critical position the profession had ever faced" (Brockman, 1974, p.72). Brockman's discussion is situated around the inter-war years, when the material of concrete was dictating the future of architecture, but the reference above can be equally applied to architecture fifty years previous, when the engineer posed the same threat. However, even though architects were aware that there was a threat, they did little to change themselves; architecture was still very much rooted in traditionalism, so the only thing architects did to counteract the engineering threat was to change the types of buildings they designed. Instead of creating their usual buildings of high religious, political or social standing, British architects should on the dawn of the new century turn their attentions to industrial buildings, which included Power Stations.

The problem that arose now for both architect and engineer was how to dress Power Stations; the only precedent that either could refer to were the water-powered stations of the mid-nineteenth century but they disguised themselves as country cottages so were considered inappropriate for the city landscape, (Stamp, 1979, Introduction, 'Temples of Power'). The only other reference was to textile mills of the 1820's which



6) Sebastian Ferranti, Deptford Power Station, Deptford Creek

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while good in terms as industrial images towards the end of the century, were severely questionable as regards their social standing; British society considered them as slave houses and was trying desperately to move away from this imagery. For electricity in the 1890's to adopt a textile mill reference, while the public were having enough trouble trying to accept the notion of electricity anyway, would do it more harm than good. As a result, it was up to architects to address the stylistic appearance of power stations; however, the design of power stations appeared confused; designs jumped quickly from Gothic to Edwardian Classical models. The first electric power station at Deptford, Kent (1888-90), designed by Sebastian de Ferranti, was in the Gothic style. Stamp remarks on this as being unusual "because by the 1880's Gothic was quite out of fashion for anything but ecclesiastical buildings" (Stamp, 1979, Introduction, 'Temples of Power'). But Ferranti wasn't an architect, he was an engineer who was an advocate of electricity. While the structure of the station looks as if it is an impressive expression of power, it has many references to textile mills of the early 19th century, and did not achieve the architectural distinction that electricity needed to launch itself as the changing force for the coming century.

Perhaps the first real electric power station designer prior to Scott was Charles Stanley Peach. He was the first to "tackle the problems with the architecture of electricity". (Stamp, 1979, Introduction, <u>"Temples of Power"</u>). Electricity, though welcomed by some, was disliked just as much by the people who lived near the stations, who were "aggrieved" for having to contend with the noise of the generators, but were even more "hostile" due to the fact that the owners of the stations were "reaping the benefits" (Stamp, 1979, Introduction, <u>"Temples of Power"</u>). Peach took it upon himself to reconcile these ill feelings, in what could be described as a public relations exercise for the electricity companies, by designing stations that would be aesthetically acceptable to the public. In his Eccleston Place power station in Belgravia of 1891, Peach borrowed from the Classical style but, instead of hiding the structure, he rationalised his classical treatment in an attempt to be honest with the building's purpose. But, while good in terms as undustrial marges to wards the end of the control, were severally



7) Charles Stanley Peach, Duke St. Power Station, Mayfair



8) J.R Chapman, Lot's Rd. Power Station, Chelsea Creek

while the station can be perceived as being utilitarian, the attention given to the detailing of the decorative iron work draws the station backwards to sit as inconspicuously in the landscape as any other building of that era. In the case of his Duke Street, Mayfair sub-station of 1905, Peach was under instruction from the Westminister Electric Supply Corporation that the station be under ground with a garden on top of it, the result of a condition by order from the Duke of Westminister when permission was being granted to build a station on the site. The Duke had wanted a garden dedicated to the enjoyment of the inhabitants of a large tenement block to the north of the site (Stamp, 1979, Chapt: 'Duke Street, sub-station'). Although perhaps not strictly "honest" to the building's purpose, simply because the station is concealed by a garden, the architectural solution was extremely clever:

the garden level was made nine feet above the pavement and surrounded by a stone balustrade to make an 'Italian terrace'. The side elevations of the stone substructure consist of lunette windows - to light the machine room below - separated by pilasters the upper level is reached by pairs of staircases at either end, which flank domed pavilions, or 'kiosks'. These are not only ornamental features making satisfactory termination's to the long thin building: they are also practical, serving as air extract shafts and containing large entrances to descend from street level to the interior. These end elevations with the entrance doors set in a concave arched recess between columns and below a segmented pediment...the overall impression is of a very jolly Edwardian Baroque (Stamp, 1979, Chapt: 'Duke Street sub-station)

Other stations by Peach are not worth mentioning, as they are just variants of the Eccleston Place station. The only other station of interest is the Lots Road power station in Chelsea Creek of 1904; designed by the engineer J.R. Chapman, the station is made interesting by its American investment and flavour; an expressive, dominating building, Stamp describes it as a "great brick and glass shed...it is a building in the Industrial tradition" (Stamp, 1979, Introduction, <u>'Temples of Power'</u>).

It was an industrial tradition of its own that the housing of electricity needed. Lots Road was 'the' electricity power station before Battersea, in that it was the first to





exhibit an electrical association, most probably because the vast use of fenestration exposed the generators within, so the station could be identified as nothing else but that for power. However power station design had somehow slackened after this station; stations continued to be built but they did not progress. Even across Europe, little is documented by way of power station design. Few industrial structures, such as Behrens' Turbine Factory of 1909, whose classical reference was supposedly a source of inspiration for Scott's classical treatment at Battersea power station (Borsi, 1987, p.100), took the limelight in the field of industrial architecture. Of course, there is the work of the Italian Futurist designer Sant' Elia; even today his imaginative concepts for power station design are exceedingly suggestive and appropriate in terms of how power stations should look, but unfortunately he died quite young in 1916. Even if he had lived to see the thirties, it is however doubtful that his work would have been ever realised, his concepts were too revolutionary for a country whose national architectural identity was still very much bound by strict classicism (Borsi, 1987, p.111). Perhaps the largest contribution to the lack of adventure in building was the First World War. Many countries were more concerned about economic recovery while trying to instil a sense of 'how things used to be' before the war, perhaps in the years that had lapsed after the war had created the perfect stimulus for architecture to regenerate itself and become optimistic for the future . Particularly in the case of power station design in Britain the lull experienced since the Lots Road station suddenly explodes with an architectural adventure in the shape of Battersea.

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CHAPTER 2: TRADITIONALISM V MODERNISM; AN ARGUMENT FOR EVOLUTION

[Scott's inaugural presidential address to the R.I.B.A in London in November of 1933 and, subsequent address to students at the R.I.B.A, January 1934, (R.I.B.A. Journal, 1933-34, pp. 5-14, 265-270)]

"Keep an open mind and use your judgement uninfluenced by slogans and ideologies", Scott's notebook at the R.I.B.A. Library, c 1934

Scott sits on a motionless "pendulum" while it rests undisturbed, hanging between traditionalism and modernism. Brian Little, describing the death of Sir Giles (Architect and Building News, Apr 20th, 1960), wrote of him as being "undoubtedly among the last of the great traditionalists", whereas Stamp would rather think of Scott as one who ventured into modernism by compromise, to create his own definition of the movement (R.I.B.A. Journal, 1980, pp. 11-12). Like others, such as the Finnish architect, Eliel Saarinen, Scott detected the insecurities involved in moving too quickly into the modernist movement. Instead, Scott would prefer to opt for a more cautious approach, an approach that would lay solid foundations both for his work and his for architectural identity if the movement should develop and grow. In his inaugural R.I.B.A. presidential address, Scott put forward an argument established essentially on the differences between traditionalism and modernism, and based on his observations and theories of the two movements; he suggested that architects must not allow themselves to be confused by the debate, that they should begin by being truthful to themselves. Their first consideration should be primarily dictated by their being artists, while the second rule to follow should be that an honesty to materials and construction be upheld. In essence, the architect should be introspective and only when self-assurance was achieved, then could modernism be indulged:

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"Excite the open which we are gettiningly and wong? reacted (in stagatis methods) with a south a south stagatis methods. The A. Ellings on the basis of the south staget in the south s
"Avoid extremes and preserve a sane and balanced judgement,...keep a middle line without becoming dull and lifeless...I may be pleading a cause that is not sufficiently exciting for some, yet I would say that the greatest artists are those who, though capable of going to extremes, studiously avoid doing so; a fine work of art should be nervous but serene, it should be full of life but not hysterical, and it should be restrained and controlled, yet free, it contains in fact a number of delicate balances, the balance found in nature; but in architecture the struggle of opposites and the resulting delicate nervous poise between extremes must be fought out in the single individual - the artist".

Saarinen was of a similar disposition when it came to setting himself within the modernist debate. In his address on the "Principles of modern architecture", (R.I.B.A. Journal, 1932, pp. 235-239), Saarinen remarked that he referred to Louis Sullivan's advice on architecture in those confusing times of Thirties modernism, i.e. that he (Saarinen), "consider what is right for him" (R.I.B.A. Journal, 1932, p. 235) But where did Scott's confidence come from, that allowed him to assume this 'middle ground' position between the movements? Perhaps he was affected by an R.I.B.A. debate, 'Modernism in Architecture', reported in the <u>R.I.B.A. Journal</u> of May 1928, where Professor A.E. Richardson put forward the notion of there being two emerging strands of modernism, the first which he described as having "novelty, stunting, making believe and fashion", while the other strand he described as "evolutionary, having intelligence and imaginative devisement".

It is this second strand of modernism that Scott would ally himself to. However, Scott felt that the sensibilities of this evolutionary modernism were determined by two forces; economics and construction. Scott felt both of these needed to be addressed before he could even attempt to address the theories of modernism.

Economics

"Even the finest architects, who are accustomed to clothe their structures in a certain style of dress, are sooner or later faced with the question of Accession and a construction of the second for the construction of an approximation and prosecond to the conduct becauting and on the feel on the and the photoding of constr of the the second for a different feel on the construction of the and the feel of the photocol or the construction of the match of the construction of the and the feel of the photocol and the construction of the match of the second of the approximation of the the construction of the match of the second of the second of the second the the construction of the match of the the second of the construction of the the construction of the matching field of the the structure for the construction of the the second of the matching field of the structure for the structure for the the construction of the matching field of the structure for the construction of the the matching field of the structure for the structure of the the structure of the structure for the the structure for the structure of the structure for the structure for the structure for the the structure for the structure of the structure for the structure for the structure for the structure of the structure for the structure of the structure for the structure for the structure for the structure of the structure for the structure

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It sounds as though Howard Robertson is advocating the abandonment of traditionalism in favour of modernism; in fact he is not, he thinks it is "doubtful whether there is a great future in modernism". What Robertson is suggesting is that perhaps with a tailoring down of traditionalism, industrialists might consider architects as the new designers of industrial buildings instead of engineers. Two years later, i.e. in his presidential inaugural address of 1933, Scott would reinforce this and call on architects to be practical, advocating that modern life and modern society demand this, that they want architecture to represent them, that in the thirty years of the new century little had changed in architectural practice, i.e. that the architect was doing nothing to counteract the work of the engineer:

"Architecture was becoming largely divorced from the practical side of modern life. Industrialists and practical business men had little or no use for architects, who came to be looked upon as purveyors of ornament and therefore not required on industrial buildings".

Scott felt that for the architect there was a "need above all to be practical, efficient and inexpensive". For Scott it was a question of survival for his profession. After two world wars, there was the added need not only for the architect but for a whole nation to rebuild its identity.

After World War One, town planning had taken priority on the agenda for the recovery of Britain. Because London was worst affected by the war, the first plan of action was to boost morale by clearing it of its slums and then by creating jobs. All this was done with the aid of foreign investment, particularly from America. It was hoped Britain would soon be on its feet again. Although most of the town planning recommended in 'Plan of London' report didn't come into action until after the Second World War; the a estimate autor dana dang mang pengerakan pengerakan dari bertak dan dari bertak dan Sertema akar sertakan erintaki genetikan diperak akar dari bertak senten dari bertak senten dari bertak senten Ara sentema beraka satar setimati basi sejimat senten dari bertak senten dari bertak senten dari bertak senten Ara sentema kari bertakan setimati basi setimati bertak sentema senten dari bertak senten dari bertak senten da Braka sentema kari bertakan dari basi setimat senten dari bertakan sentema senten dari bertak sentema sentema s

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delay did give time to architects to consider what their contribution to industrial architecture should be. Two trains of thought impacted on the importance of industrial architecture. The first stemmed from town planning and the influence of pioneers like Patrick Geddes, Raymond Unwin and Ebenezer Howard, with the creation of the 'garden city', the idea basically being to set this out in an industrial structure as the new 'cathedral' from which the community would stem. The second influence was the American notion of mass production. Thomas Wallace in his discussion on 'Factories', (R.I.B.A. Journal, 1933, pp. 301-310), saw American industrialisation as the father of British industrial architecture:

"There is no doubt that we must credit America with the first conceptions of the new style of industrial building...the reason for this was undoubtedly American methods of mass production, which quickly demanded the essentials of correct planning on the direct route principle, giving proper sequence of operations".

Such factors were not so much the basis on which architects were to work, but they indirectly laid the foundation for the concept of form and function. Town planning tries to identify the role of the factory as a cathedral, a place of reverence in its physical form, while Americanisation considers mass-production as concentrated function, where there is an activity to be considered and living should stem from it. Scott responds to these conceptions of form and function through the materials he uses in construction. And it is his approach to materials that is the key to Scott's identity as an artist.

Construction

First, I am going to take the simplest but one of the most architectural components - a plain wall. (Scott, Address to students, R.I.B.A. Journal, 1934, pp.265-270)

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According to Banham, in his book A guide to Modern Architecture, of 1962 in the debate of modern architecture, "It was always construction not aesthetic, that formed the hub of controversy" (p40). When modernism became truely fledged in the Thirties, long-established, reliable materials such as brick and stone were made to compete against the newer and more manipulative materials, like concrete and structural steel. Thus the war between the styles continues, however this time architects would be categorised as traditionalists or modernists purely by the principal material they chose to construct a building with. Rather than abandon brick for concrete, Scott advocated the use of the two materials in conjunction with each other to achieve the desired qualities each could give to a building. Yet, unlike other architects who used concrete to render over the actual construction of their buildings merely because of fashion (Banham, 1962, p38), Scott preferred that the technical qualities of his building be considered first, and that these qualities be maximised in their application. He coupled this idea of the primacy of material quality with a belief that if an architect believed himself to be an artist applying an aesthetic, then buildings of lasting merit would be created. In his R.I.B.A. address of 1934, Scott urged students to have a good balance of technical ability and artistry, that technical ability was not enough on its own; an architect could succeed to some degree with this but without an artistic sense of the materials being used, he would be fooling himself:

Technical accomplishment will enable you to practise, but can you achieve with this alone any real greatness?...not without that thing. The names that will last and go down to posterity are only of those who have imparted to their work the lasting quality of fine artistry (R.I.B.A. Journal, 1934, p.265).

It must also be remembered that Scott believed in the architecture of evolution; it was his architectural nature to move cautiously. Scott would never forfeit a material like brick, whose ageing and rugged qualities he adored, in favour of concrete, a material he liked for its modernity and structural qualities, but which imparted no sense of personality unto any building structure it adorned. It is his discussion of the merits of

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these materials that makes Scott's address to students particularly interesting, because he throws light on what the real problems of construction were for those who wanted to branch into modernism by evolution.

Consider a building as a shell, as being only interior and exterior. In his address, Scott provides students with a wall to build; he asks them what would they build it out of to make it beautiful. But, in the climate of traditionalism and modernism, how are they to know which material is best to use without affiliating themselves to one of the two movements? Perhaps, as Scott observes, it depends on what the purpose of the wall is. For an exterior wall Scott muses over several material possibilities, while making considerations for both movements which were equally obsessive about creating structures that were monolithic. With concrete, the modernists built walls which were smooth and shiny, ultimately aiming for a "machine finish" but, as an exterior material over vast surfaces, Scott felt that it "has in its natural state no beauty either of colour or texture, and it weathers badly, getting uglier and uglier instead of more beautiful" (R.I.B.A. Journal, 1934, p.266). For Scott, concrete had no practical or even aesthetic purpose as an exterior material; however for interiors Scott thought it ideal for beams, columns, floors, etc, basically, as appropriate to cover structural work. Brick, on the other hand, presented more exciting possibilities for Scott as a weatherproof material for exterior work. For Scott, each brick had a character of its own, and within a monolithic structure the character of a collection of bricks excited him even more. His enthusiasm for the material, when he discusses an imaginary competition for students to design a brick wall, emphasises his obsessive attention to detail in the pursuit of the perfect aesthetic, i.e. combining good brick work with modern designs:

Brick and stone walls are capable of a great variety of treatment. I should like to see a competition among students...let them choose the colour, size, texture and bond of the brick and decide upon the width, colour, texture and treatment of the joints, and they would learn not only the extraordinary variety of effects that are possible, but how the colours of the bricks change with different kinds of joints, and how difficult it is to judge the effect of walling from a few sample bricks in one's hand...until a



10) Willem Marinus Dudok, Municipal Baths, Hilversum.

better walling material is discovered, I should like to see a greater use of rough brick or coursed rubble stone walling in country houses designed in the modernist manner.

Perhaps Scott felt confident in promoting this use of brick with modern design, having seen Dudok's public baths in Hilversum (1910) as a precedent. Banham refers to Dudok's work as having "successfully combined the forms of modernity with brick surfaces, the result was a rave success in middle of the road countries like England" (Banham, 1962, p89), and Scott does refer to the architectural style of Holland in his notebooks. There are remarkable similarities between Scott's power stations and Dudok's baths, but what ever those similarities are, Andrew Saint in Exploring England's Heritage, 1980 pays Scott a powerful compliment for evolving his own idiosyncratic style of work and is dismissive of the Dutch influence (Saint, 1980, p.231).

Scott also remarked on fenestration, which was not as much a preoccupation of his as brick, but his comments are interesting in the light of the importance placed on fenestration by the modernists. Once again, he adopted a middle ground. In the past, he commented in his notebooks, the use of glass was minimal, but he thought the modernists used it too much. Scott's advice is simple: "Use just as much as is necessary for the job, no more, no less". What is interesting about this comment is that when Scott created his power stations, he paid as much attention to the appearance of fenestration as he did brick. Scott's approach to architecture can sometimes be confusing so that in one instance he is a traditionalist, the next a modernist and finally, when the pendulum settles, a man of compromise.

It is not enough to be novel and in the fashion; just use common sense and refuse to be stampeded by stunts. We live in a rather cheap and shoddy age which greatly appreciates exaggeration - this has such kick and snap - but much as I appreciate some of the best qualities of modern work, such as its simplicity and freshness, I find a good deal of humbug talked by many whose enthusiasm outruns their common sense. Just refuse to be stampeded; and although we live in an age of exaggeration ायको जाता आसे हो ताता प्राप्त आताल विकार प्रमाणको ती स्थिति स्थित होता. साथ प्राप्त हो हो ताता हो। भारतहर्तुती हो जाता हो जाससायकी स्थान दिनेश ती स्थात प्राप्त दिष्टलु सुध साथसारी होता सेन्द्रात स्थाति है। सार स्थात साथ स्थात स्थात जातीस्था

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and over - emphasis, which is of course a symptom of vulgarity, we must fight against it, even at the risk of being accused of advocating compromise. (Scott, Address to students, R.I.B.A. Journal, 1934, p.267) and every construction of constance symptom of trafficture we must be be constant a similar of constance symptom of trafficture must compensation front. Additioned success, bit LBAC promatic 1834, p.2679



11) Peter Behrens, AEG Turbine Factory Assembly Hall, Berlin

CHAPTER 3: DOES MODERNISM SUIT ME?

"IF a station is in an urban area they say it is not safe. If it is in the country they say the best agricultural land in England cannot be spared, and if it is in a wilderness like Dungeness that is the last breeding ground of some strange insect and the station must not be built there" (Sir Ian Horobin, Parliamentary Secretary to the minister of power, June 1959, quoted in, The Price of Amenity, 1971, p.53)

Institutional Expression

To find an ideal location for a power station is a difficult task, but with both Battersea and Bankside stations the problems were further complicated by the stations being used to promote electric power, Battersea in the early thirties was a monument to the energy of power, then Bankside in the late forties was a monument to growth in dignity of power. It is not surprising that the public supported by architectural institutions, reacted to the proposals of these buildings. The then President of the R.I.B.A., Walter Tapper, wrote to the Prime Minister voicing objections to Battersea, (Architect and Building News, 1929, p.638) and, with Bankside, objections came directly across the river from supporters of Christopher Wren's baroque masterpiece St. Paul's Cathedral (Bankside Tour, Sept 20th 1996). So, where the involvement of the public was concerned, the newly formed London Power Company (1927) needed its new power stations to be monumental so that they encouraged the image of an effective institutional expression for the company. They wanted their stations to achieve what buildings such as the AEG turbine factory by Behrens in 1909 or the Ligotto Fiat factory had, i.e. to have become monuments of their age because they promoted rhetorically the significance of their purpose, (Borsi, 1987, p.54). The most effective way of gaining a visible dignity for electricity to establish itself as a social power was to employ a reputable architect such as Sir Giles Gilbert Scott, who could create a tangible image for power in viable physical terms. It is an interesting note that Sir



12) Battersea Power Station, Detail

Giles was not the initial architect invited to work on the appearance of Battersea power station. The Manchester firm of Halliday and Agate were commissioned to work on the station's appearance. They proposed an exterior brick treatment of a basic steel frame with stress given to towers at the corners of the tall central mass of the boiler house, on which the chimneys stood. But for some reason it was felt that they were unable to make the huge bulk look acceptable and in what was most likely a public relations exercise to counteract unfavourable publicity, they were in 1930 replaced by a more famous architect, Sir Giles Gilbert Scott. The circumstances surrounding Scott's appointment are not recorded, but by the time he was brought in the general configuration of the station had been established. "It is said the aged Peach was offered the job, but he refused to compromise on a small point" (Stamp, 1979, Chapt: Battersea). Scott had the proven ability to handle huge, awe-inspiring masses, plus in the face of the new language modernism, he had maintained a continuity with his architectural past, enabling him to extract qualities that rendered Battersea power station "effective, durable and monumental" (Borsi, 1987, p.54). Fifteen years later, it was only natural because of Battersea's success that Scott be employed to design another 'Cathedral of Power', at Bankside. Again, Scott would encounter unfavourable publicity, however unlike Battersea, this time from the onset Scott was more active in the role of promoting this station. Perhaps because he had complete control over its design, Scott instigated press conference after press conference; such was his concern for town planning, Scott felt that Bankside could not go ahead unless all those concerned about the station were in agreement on its final design (Scott's notebook at the R.I.B.A. Library, c 1947). By all accounts, it seems as though the London Power Company made the right choice in employing Scott; the design of his two stations captured the public's imagination and confidence, thus establishing the Power Company on the social platform they desired.

Unlike Bankside, Scott was not responsible for the whole design of Battersea. Specifications were made by the chief engineer of the L.P.C. Dr Leonard Pearce; from Sum and a standard the count influence investige constraint line presentation of a count of the sum and a standard the standard of the sum and a standard of the standard of the sum and a standard of the sum and a standard of the standard of the sum and a standard of the standard



13) Auguste Perret, Staircase and Rotunda, Musee des Travaux Publics, Paris

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the beginning the drawings by the Manchester engineers Messrs C.S. Allot and Son set the basic plan as being symmetrical, with two parallel sets of boiler houses, turbine halls and switch houses. For Bankside the consulting engineers the London firm Mott, Hay and Anderson, and because Scott had a freer reign over the design, he concerned himself with organising the technical functions of the power station into a "satisfactory" architectural unity" (Bankside tour, Aug 20th, 1996). The layout was a basic symmetrical scheme, containing a boiler house and turbine hall, with continuous parapets, offices and laboratories in lower wings at the corners of the station. The whole building is fronted with a central chimney facing the riverside. Borsi suggests that Behrens Turbine fabrik can claim responsibility for Scott's classical treatment at Battersea while Stamp considers Dudok's Hilversum Townhall as the source of inspiration for Bankside. Dudok had won the R.I.B.A. architectural gold medal in 1927, and exploited the adoration he received in Britain in the following years. But perhaps if any historical references are made by Scott, these should be considered as being born from his own training and Twenties' American architecture, such as the gothic inspired Crystler building, both of which became embroiled in a sort of monumental formal purism in Scott's work.

Formal Purism

Perhaps lending itself as the description for Scott's "evolution", formal purism was from the 1920's onwards recognised as an attempt to extract qualities from classical and gothic architecture and then manipulate these qualities to render them modern. Unlike eclecticism, formal purism in architecture refused all forms of romantic mimicry, although allegiance to its abstraction never did remove it too far beyond the recognition of its source . In his Staircase and rotunda of the Musee des Travanx Publics in Paris (1937), Auguste Perret experimented by fretting concrete and so making the cylindrical pillars clear and sharp by reducing the column to a plain cylinder, he was forced to address the orientation of the capital and base, removing







15) Frank Lloyd Wright, Cottage, Oak Park

detailing from these areas and tapering the column inward from capital to base. Perret thus created a modern column whilst maintaining a classical quotation.

The four chimneys of Battersea power station were in 1932 Scott's first attempt at formal purism and although not as abstracted as Perret's experiment, they were an adventurous move for Scott for which he received much criticism. Scott devoted the most attention to modelling the bases of the chimneys; by employing a rectangular or 'cubist' styling enhanced by vertical fluting, Scott denies any organic references to classical architecture. Fluting on the main bodies of the chimneys allows their classical association but only because Scott 'liked' the ribs (Stamp, 1979, Chapt: Battersea); the chimney columns also have double 'capitals' whose design, although a last minute response to a Government report which insisted on an increase in the chimney heights (337 ft high); instead, Scott decided not to labour over he introduced on each, a simple band making the design very honest to its original intent.

Scott's Bankside station is much more interesting because of the nature in which it came to address formal purism. In this station, a mature Scott is apparent. Bankside makes reference to Gothic architecture, but its gothic doesn't stem from Scott's pulpilage to Temple Moore; it is a gothic that Scott digested from his trip to America in 1932. Scott travelled to the States to source library layouts for his commission for his library for Cambridge University of 1932. Stamp suggests in his book Temples of Power that there is a "distinct American flavour" to Bankside, deliberately to 1920's Frank Lloyd Wright (Stamp, 1979, Chapt; 'Bankside', 'Temples of Power'); certainly in the Cambridge library there are definite references to Wright's work, particularly his domestic architecture such as Oak House in 1911. However, in his power stations, especially in Battersea, the American reference is in the gentle stepping inwards of bricks that occurs across the tops of the stations, which suggests that they are a derivative of American zoning laws inflicted on skyscrapers in the 20's and 30's. While Battersea makes very deliberate suggestions of American zoning, Bankside is



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16) Hugh Ferriss, 'Evolution of the Set-Back Building', Metropolis of Tomorrow

mature in that, in the time after Battersea it looked as though when this station was exacted it tamed the vulgarity associated with American Art Deco. The weighty gothic images of Hugh Ferriss's images for his book, <u>'The Metropolis of Tomorrow'</u>, of 1929,certainly provided a source for Scott's work, but Scott's gothic is typically moralistic, so much so that formal purism takes hold of Bankside with its strict laws of vertical and horizontal, particularly about the tower, and the gothic characteristic of surging verticals is made modern by Scott's decorative treatment:

The chimney rises from the ground gently tapering with slight entasis, subtly recessed at the corners and with its upper stage set back, the verticality of the tower is stressed by three raised bands of brick running up each side (Stamp, 1979, Chapt; 'Bankside', 'Temples of Power').

As an extension of formal purism, Scott tries to evolve the geometric principles of gothic and classical architecture to address modernism.

Addressing Modernism

Scott addresses modernism in two very clever ways. Firstly, rather than using fenestration quite literally as a method of clothing structures, as many modernists did, Scott decided to play with the orientation of the windows, working the windows on the two planes of horizontal and vertical. Scott allows his fenestration to make references to both past styles of classical and gothic architecture and to take note of the geometric games modernism was playing. Borsi, 1987, p.82 makes reference to this, saying that the attention given in trying to harmonise rectangles within rectangles, balancing symmetry and asymmetry, reduced architecture of the Thirties to a state of "graphics". This is the case in Scott's two power stations; they are clever graphic representations of classical and gothic architecture. Both Battersea and Bankside pick up on how gothic implied vertical and how verticality meant extension of height. In these stations, where it was important to stress monumentality, his fenestration has narrow bases and is

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17) Sir Giles Gilbert Scott, Sketch for House

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made exceedingly tall along the verticals. Sometimes placed side by side to emphasise importance, but mostly his windows are given wall space so that they bear down on the viewer. Where little importance was given to the lower parts of the buildings, such as in the offices and laboratories, the fenestration concentrated on the horizontal, bases were made wider and the vertical reduced, suggesting the heaviness of classicism. Even within the windows themselves, Scott played with graphics because each window was made up of blocks of glass panes, their internal frames working again on grid forces between horizontal and vertical lines. Although not his major concern, Scott makes a point of applying a formal purism in his fenestration without allowing the glass to become the dominant fabric of the structure. However, in part of Bankside where Scott did allow glass to become part of the structure, the result was very successful. Fenestration became part of the fabric in the roof of the main turbine hall. Only visible from the inside, here Scott played humorous games with window orientation; because they neither represents classical width or gothic height, the square glass panes are arranged in a diagonal format. This is rather cunning as it has no claims to any architectural style. It is unfortunate that this clever detail is removed in the new design for renovation of Herzog and De Meuron's, 2000 Tate Gallery.

The second case in which Scott addresses modernism is an extremely simple decorative experiment that allows him to venture into modernism without committing himself to the movement. Although his sketches for a house design, circa 1932, clearly show that Scott could quite easily have become a modernist; he chose not to. In his two power stations Scott shows that he was conscious of the movement, when he stakes areas of concentrated decorative historical referencing against great masses of plain brick walling. These areas he let speak for themselves, only interrupting them by some fenestration or across their tops when he employed his 'jazz-moderne' form of vertical brick 'fluting'. Scott was a master of using brick and this is possibly the best and most noted aspect of his work in that he successfully instils a sense of nobility into the materials.



18) Sir Giles Gilbert Scott, Battersea Power Station, Detail

Nobility of Materials

Scott's greatest contribution to architecture was his ability to manipulate materials to extract their best qualities. Scott was, as Stamp describes, "always anxious to avoid gloomy industrial appearances" (Stamp, 1979, Introduction). So in his two power stations he used a material that he knew could give the buildings character. The quality that Scott expected from bricks was that, as they aged and weathered gracefully, the buildings would age appropriately too. At Battersea Scott chose his favourite Blockley bricks from Worcestershire, which were then laid with straw-coloured mortar; their initial pale pink texture has weathered well into today's cheerful rustic red.

At Bankside, "the tower of the building and walls are in a light purple brick while the upper masses are in a fawn colour, creating a subtle polychromatic effect" (Stamp, 1979, Chapt: Bankside, 'Temples of Power'). Today, as at Battersea, they have aged well and now the building appears as a great dark burnt sienna-coloured brooding pile. The genius of Scott's use of brick lies in his combination of their natural qualities married with the light and shade created by ornamented areas against plain surfaces:

contrast between plain surfaces and sparse well placed ornament can produce a charming effect...large broad shadows arch from the smallest line can be produced...mouldings contrasting with lines of light given by projecting portions can catch the light, (Scott's notebook at the R.I.B.A. Library, c 1934).

For this reason, it is understandable why Scott employed "jazz-moderne" brick decoration; as light and dark pass over the buildings, their characters change from one moment to the next, allowing the public to see something new in the buildings each time they pass by them thus drawing their attention time and time again. It is unfortunate that Scott's reputation as an architect came into question as a consequence



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19) Sir Giles Gilbert Scott, Bankside Power Station, Detail

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20) Sir Giles Gilbert Scott, Battersea Power Station, Detail Fenestration



Conclusion

"We are all no more than life tenants of our heritage and we have a moral duty to pass it on in good a condition as that in which we received it". ((Margaret Thatcher), Pearce, 1979, Foreward)

It has always seemed as though the history of power station design has been a sad one. Unable for many years to have its architectural form identified, when eventually this happened, it was marred by further tragedy. The architect responsible for these designs was compelled to make an architectural statement for electricity with the possibility of jeopardising his career. Scott would have had too many loaded decisions to make if he had built the stations entirely out of the modern material concrete, and would have been considered as pandering to the modernists' infant demands. Had he stayed firmly within traditionalism, he would have been considered at fifty years of age, old before his time.

Time is the demon that annoys power station design. Fifty years waiting for an identity, and then its achievement is short lived, because Battersea, once completed, operated for approximately forty years and Bankside even less, for seventeen years. The irony of the stations' histories is that they are once again asked to claim an identity. However while their original functions are now obsolete, they are required to assume yet another identity.

Today, heritage group, are actively promoting the restoration of the stations. While they canvas for the buildings to be restored, they suggest pragmatic possible uses which they feel suit the buildings and which also have a social context for the surrounding areas. The only condition for this restoration is that consideration be made for the previous identity of the building, the request being:

All structures, whatever their intrinsic rarity or other quality, should be converted in the manner which makes it possible not only to identify the



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22) Sir Giles Gilbert Scott, Battersea Power Station, Detail Derelict

original use, but also to experience empathetically something of the quality of life and environment which formerly prevailed (Pearce, 1979, p.79)

In other words, they are working on the premise that for the public the "buildings' history and purpose" would be "readable", (p.79).

It is this need to make the power stations readable that makes the paths to their new lives so controversial. With this new type of restoration, the stations have become commercially attractive, perhaps Battersea more so than Bankside; in geographical terms Battersea is an ideal target for property developers. As it is situated across the river from Victoria Station it is ideal for the public to access it, the size of its grounds at 15ha, with the building only occupying 3ha, leaves the remaining grounds open for numerous purposes and, of course, "Londoners love Battersea" (The Times, Courtesy of Wandsworth Council), it is perhaps one of the best known landmarks of London. Bankside hasn't as much to offer when compared to Battersea; it's site is only 4ha, it is not as well known and it is slightly out of the way for public access, but in the light of all the development along the South Bank in the last fifteen years, Bankside has recently become a more attractive property.

So, why is it that although this new incentive has made it financially attractive to restore these power stations in the last fourteen years, Battersea sits in a worsening physical state and only now is Bankside to get its facelift. The answer is simple: architectural snobbery and greed. Perhaps when heritage groups requested that in a building's new function the history of the old be remembered, they should have added the word 'appropriate' before 'new function'. With the Power Stations the results of architectural snobbery present two extremes. Heritage groups have expressed joy at the fact that Bankside is to assume the rather dignified function of an International Gallery. On the announcement of its new purpose, Julian Holden of the 20th Century Society said, "We the 20th Cent. Soc. are absolutely delighted ... this is one of the options we always hoped for", (Architects' Journal, May 1994, p.7). A dignified

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23) Sir Giles Gilbert Scott, Bankside Power Station, Herzog and De Meuron Design

building such as Bankside is given a 'respectful' function. Heritage groups and architects across the land breathed a sigh of relief; a long established foundation such as the Tate couldn't but not be appreciative of the qualities inherent in this monumental piece of twentieth century architecture, and with their assurances that they would not have a repeat 'funfair' like their Liverpool Gallery, accompanied with nautical themed restaurants and shops, they gained the support of the architectural profession in Britain. Everyone felt it was a good marriage. Fortunately for Bankside, the pomp associated with art institutions allowed its development to be quite rapid (the Tate has only been involved in the project for two years and completion of the project is on target, set for the eve of the new millennium).

Battersea, on the other hand, has come out on the negative end of the scale of architectural snobbery and is heavily embroiled in greed. When, in 1983, the SAVE proposal that Battersea become the first museum to illustrate the history of power turned into Alton Tower's theme park of London in 1984, SAVE, like many others, were less than pleased; in the years that have passed since, greed has left Battersea unattended. Property developers, unable to raise the funds required to restore the station, have left it standing waiting it seems for it to be entitled a public eye-sore so that it can be demolished and the fruitful site be used for something more profitable. It remains to be seen if Battersea will ever be restored to its former glory. It would be nice to think that the Tate is doing the 'right' thing for Bankside by maintaining elements of its history - but unfortunately they have not. They have already removed the most integral element of both Scott's and the station's identities: the zig-zurrat design across the top of the station is to be replaced, ironically, by a solid block of fenestration.

Battersea and Bankside Power Stations are no more.

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