

# LIMESTONE IN POST-WAR BRITISH ARCHITECTURE: Is it a plea for a return to Pugin?

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“But the very English belief in construction as the basis of architecture runs throughout so that, despite the diversity of the work, it all holds together as the product of a single line of thought. In this country we are the heirs of Pugin, Morris and Ruskin and the notion of truth to materials and to construction is second nature to us whatever our stylistic leaning”.<sup>1</sup>

(John Winter et al, *World Architecture*, 1994)

## INTRODUCTION

Disparity exists between what is built and what is preached about modern architecture, especially with respect to honesty to building materials. The objective of this paper is to show how the use of limestone in post-war British architecture stands in relation to the notion of ‘truth’. This disparity is brought out with reference to Pugin’s theory.

Post-war Britain is a significant era because it was the time when modernist design principles were introduced into British construction. Modernism, with its inherent antagonism to stone construction, became the dominant style in Britain in 1956.

The various issues raised are illustrated by three London buildings belonging to the period 1956-1964. During this period, the most interesting post-war tall buildings were constructed. The three London buildings are Bracken House (1956-59), the Shell Centre (1953-63), and the Economist Development (1962-64). Hollington

1. J. Winter et al, ‘Profile: Michael Hopkins’, *World Architecture*, No. 30, (1994) 16-39.

Red Sandstone was used in Bracken House while Portland Stone was used in the Shell Centre and Economist Development.<sup>2</sup>

## THE ARGUMENT

Pugin introduced ethical issues in architectural design. He was the first to argue for architecture that is moral and truthful.<sup>3</sup> Architectural morality and truth is the latent agenda of his *True Principles of Pointed or Christian Architecture* published in 1841. According to Pugin, truth to construction and materials are of paramount importance. Construction should be evident and materials should be used for their specific properties. Thus they should not be painted over to make them look like other materials. Ornament can be used but it should not hinder the honesty of the structure.

The opening quote is taken from an article reviewing the work of Hopkins. It sums up the preoccupation of a number of post-war architects vis-à-vis honesty to materials and construction. With respect to the use of limestone, is this preoccupation truly imperative or just rhetoric?

In placing Pugin's theory of architecture in its timeframe and reviewing its propositions, it emerges that contemporary rhetoric, the choice of mode of construction and use of materials are preconditioned and determined by the brief and the architects' philosophy of design. Disparity exists between what is said and what is built. The construction method employed is a function of the materials availability and their respective characteristics and the technology available. The use of limestone is mainly restricted to cladding frame structures. It is used to cloth the structure. Contrary to what some post-war British Modernists advocated about the use of materials, the use of limestone in their buildings rendered them a dishonest

2. Portland Stone is a Jurassic shallow oolitic limestone quarried at the Isle of Portland near Weymouth in Dorset. It is fine-grained and durable. It consists in three distinct beds: the Roach, the Whit Bed and the Base Bed, usually referred to as the Best bed. This bed is not the best bed. Actually it is the weakest and less durable while Roach is the strongest and most durable. Hollington Red Sandstone is a Triassic sandstone quarried in Staffordshire. It has fine to medium grained texture.
3. Pugin's ideas were developed, in particular, by Ruskin and Morris (D. Watkin, *Morality and Architecture: The Development of a Theme in Architectural History and Theory from the Gothic Revival to the Modern Movement*, (Clarendon Press; Oxford 1977)).

statement in Pugin's sense. The idea of truth with respect to construction and materials current in post-war British architecture, is a strong legacy of Pugin's theory of architecture. In frame structures, limestone is utilized to deceive about the actual materials utilised in construction. A limestone clad building cannot pretend to be a building true to construction and materials. As a steel frame structure is a statement of technological evolution springing up during the last century, a limestone clad frame structure is a statement of technological and cultural evolution of the last half century.

### REFERENCES TO PUGIN'S THEORY OF ARCHITECTURE IN POST-WAR BRITISH ARCHITECTURE

Morality was applied to architecture in the nineteenth century by Pugin. Until Pugin, architecture and ornament were not differentiated. Ornaments formed part of architecture. Its position was hardly ever questioned. For millennia architectural ornament was controlled by historical precedent, rules of proportions and propriety. Constraints on the use of ornament were solely visual.<sup>4</sup> Ethical constraints were introduced by Pugin because of demands imposed by degrading architectural taste. By this time ornament was not thought to be an integral part of architecture. It was considered as an applied art.

Ethical principles, Pugin argued, provide an objective design method in architecture by applying objective unalterable rules grounded in Christian architecture. "... Daily experience proves that those who attempt this [Christian] glorious style without any fixed idea of its unalterable rules, are certain to end in miserable failures."<sup>5</sup> Pugin stated and elaborated his ethically grounded design methodology in *Contrasts: or, A Parallel Between the Noble Edifices of the Middle Ages and Corresponding Buildings of the Present Day; Shewing the Present Decay of Taste* and *The True Principles of Pointed or Christian Architecture*, both published in 1841. In these works he advocated the importance that buildings should be a genuine expression of structure, function, materials and spirit of the times.

4. The nonvisual constraints referred to by Vitruvius were practical constraints current in Classical antiquity. For example, fine stereotomy should not be used in areas were they are likely to be damaged by smoke or soot (Vitruvius, *The Ten Books on Architecture*, Book 1, trans. by M.H. Morgan, (Dover Publications; New York 1914, reprint 1960) 209-210).
5. A.W.N. Pugin, *The True Principles of Pointed or Christian Architecture*, (Academy Editions; London 1841, reprint 1973) 19.

## THE SIGNIFICANCE OF POST-WAR BRITISH BUILDINGS

The high reputation of the Economist Building is due to the fact that the design closely achieved the architects' intentions; the striking way of rebuilding and enhancing a sensitive area; and for extending the idea of a free standing separate structure in a pedestrian piazzetta.<sup>6</sup> The Economist Development is more concerned about the spaces generated between the buildings rather than the buildings themselves. The piazzetta is not overwhelming but enclosing. It is effectively an extension of eighteenth century St. James's Street.<sup>7</sup>

The Shell Centre is one of London's most controversial buildings. Its aesthetics have been much debated. It is very different from the Seagram Building: "The Seagram Building expresses the idea of efficiency, lightness, airiness, the things which we regard as characteristic of our time; it has that machine-made look which we tend to applaud. And what has the Shell Building got? Heavy nothingness; it looks like some sombre institution where a few eighteenth-century ideas have been inflated far beyond the scale for which they were appropriate. As far as it presents us with an image at all, it is one totally without significance for us ... ."<sup>8</sup> Quoting Blake, Nairn stated that the Shell Centre is "hired by Satan to depress art." Its design immediately attracted harsh criticism. The *Architects' Journal* summed up many reactions of the profession to the building thus: "The Shell Building ... is a monument, the largest, most arresting, and most depressing so far, to the failure of our town planning legislation ... . It was the town planners who set the plot ratio, who limited the heights of the various blocks ... ."<sup>9</sup> "Planners may indeed have set wrong conditions, but failure to create a building representing twentieth-century architecture can only be the responsibility of the architect."<sup>10</sup>

The historical significance of the Bracken House is three-fold: since its completion in 1959 it was regarded as a masterwork of Richardson; it was substantially altered to satisfy the needs of its new owners, the Obayashi Corporation of Japan, by Hopkins and it was the first listed post-war building.<sup>11</sup> The design

6. *The Architects' Journal*, (3 September 1969) 555.

7. M. Webb, *Architecture in Britain Today*, (Hamlyn Publishing Group; Middlesex 1969) 157-159.

8. D. Lasdun and J. Davies, 'Thoughts in Progress: Seagram versus Shell', *Architectural Design*, (December 1956) 378.

9. *The Architects' Journal*, (4 April 1962) 703.

10. *Ibid.*, 704.

11. C. Amery, *Bracken House*, (Royal Institute of British Architects; London) 9.

alterations enhanced the character of the building. The rebuilding of the central block which used to house the printing press, substantially improved the original design.<sup>12</sup> Finding inspiration of the new facades in Richardson's original design and coupled with Hopkins' architectural solution, an elegant symbiosis of the old with the new is achieved. "From being one of the best buildings to have been built in the City of London in the 1950s, Bracken House has emerged in the 1990s with a new heart and a striking and handsome new presence in the City."<sup>13</sup>

The reactions to Richardson's design varied depending whether the critics are pro or anti traditional architecture. Some argued that Richardson's Bracken House "... demonstrates ... the work of an architect who really knew what it was to be able to solve difficult problems of style, arrangement and utility simultaneously in this highly specialised building".<sup>14</sup> Others, like Boyne, argues that Richardson did not appreciate "their sense of seamliness in town planning" because he designed "the extraordinary, aggressively-shaped *Financial Times* offices in Cannon Street, alongside St Paul's".<sup>15</sup>

### ***Truth to Structure***

"Pointed Architecture does not conceal her construction, but beautifies it."<sup>16</sup> The structure frequently has bearing on the building's exterior. The buttresses of a gothic cathedral are emphatically expressed.

Rendering was used by pre-war Modernists to provide an even finish to their frame structures. The post-war Modernists left them unrendered. Their architecture, when used in the city, strongly contrasted with traditional architecture. With greater emphasis and planning policies aimed towards urban conservation, the demands on post-war Modernism were to provide designs which integrated with the historical environment. The post-war Modernists had no choice: either they designed in conformity to planning regulations or their planning applications would have been turned down.

The Smithsons clad the buildings in Portland stone. In both colour and surface

12. Ibid., 9-10.

13. Ibid., 78.

14. P. Reyntiens, *The Financial Times Building*, (Letter addressed to G. Stamp dated 20 September 1986) 1.

15. C. Boyne, 'Offices', *The Architects Journal*, (15 January 1959) 93.

16. A.W.N. Pugin, *The True Principles of Pointed or Christian Architecture*, 4.

texture the Economist Development has very much a traditional London face.<sup>17</sup> “They [the Smithsons] have ... separated structure from external expression by having the concrete stanchions inside articulated from narrower vertical bands of Portland stone outside, which are not a thin veneer, but quite chunky and completely non-bearing.”<sup>18</sup> Such a design decision rendered the construction of the Economist Development and concealed it. The Shell tower appears to be load bearing masonry but in actual fact it is a limestone clad steel frame structure. The steel structure is not evident. Bracken house, in line with Richardson’s architecture, makes use of a combination of sandstone and brick in the traditional building construction. Though carefully selected and creatively used for their elegance, durability and behaviour in use, building materials used are in congruence with the architect’s concept and philosophy of design rooted in classical grammar.

### ***Truth to Function***

“It will be readily admitted, that the great test of Architectural beauty is the fitness of the design to the purpose for which it is intended, and that the style of a building should so correspond with its use that the spectator may at once perceive the purpose for which it was erected.”<sup>19</sup> Since the late nineteenth century tall buildings were associated with offices. Both the exterior and the interior of the Shell Centre and the Economist Tower read as office buildings; so does Richardson’s Bracken House. Office planning designs current in the 1950s were different from the ones used today. Richardson’s design concept was typical of his time: maximum small office spaces and minimum open plan office spaces. The external and internal appearance of all three buildings are “illustrative of, and in accordance with, the purpose for which it is destined.”<sup>20</sup>

Imagery is an effective way of communicating the function of a building. Although completed by the early 1970s, an example of such a building is the extension to the South of the Central Criminal Court designed by McMorran & Whitby. Soon after its completion, the *Architectural Journal* speculated that Whitby wanted his design, especially through the use of cell-like, round-headed mullioned

17. D. Stephen et al. *British Buildings 1960-1964*, (Adam & Charles Black: London 1965) 94.

18. *The Architects' Journal*, (9 August 1961) 196.

19. A.W.N. Pugin, *Contrasts: or, A Parallel Between the Noble Edifices of the Middle Ages and Corresponding Buildings of the Present Day; Shewing the Present Decay of Taste*, (Charles Dolman; London 1841) 1.

20. A.W.N. Pugin, *The True Principles of Pointed or Christian Architecture*, 50.

windows, to recall a prison: "The imagery of this building says: abandon hope all ye who enter here."<sup>21</sup>

### *Truth to Materials*

"... Even the construction itself should vary with the material employed, and the designs should be adapted to the material in which they are executed. ... Moreover, the architects of the middle ages were the first who turned the natural properties of the various materials to their full account, and made their mechanism a vehicle for their art."<sup>22</sup> In Britain, prior Pugin, the use of stucco to render brick in order to make it look like ashlar was widely practised.<sup>23</sup> In Pugin's time it was fashionable to render brick neoclassical buildings into smooth ashlar stonework. Inspired by Pugin's teachings on truth to construction and building materials, architects started to leave brick unrendered, an inspiration which subsequently led to the Arts and Crafts Movement and later to Modernism.

Mendelsohn's Einstein Tower (1920), although built out of brick, was originally intended to be built of concrete. He was influenced by the Futurist *Città Nuova* of Sant'Elia, the Viennese *Wagnerschule* especially the work of Hoppe, whose work inspired Sant'Elia, and Olbrich, Wagner's foremost student.<sup>24</sup> Its interplay of forms are "supposed to represent the warpage of space-time by matter predicted by the theory of general relativity."<sup>25</sup> This interplay suggests that the building is constructed out of concrete because such forms are appropriate to concrete construction whereby the concrete, while still in paste form, may be moulded in any shape. The construction of such a building is proper to concrete. Mendelsohn was compelled to use a reinforced concrete frame filled with brick because the builders were short of supply of cement. The case for Bracken House is different. Although in 1956 supplies of the Hollington Sandstone were running short due to the demand for it generated by the construction of Spence's Coventry Cathedral, Bracken House was completed in the building material in which it was originally intended.<sup>26</sup> In the Shell Tower,

21. *The Architects' Journal*, (6 September 1972) 516.

22. A.W.N. Pugin, *The True Principles of Pointed or Christian Architecture*, 1-2.

23. Rendering is generally used when the building material used is poor and susceptible to rapid weathering. Such materials include mud and poor quality bricks.

24. K. Frampton, *GA Document Special Issue 3: Modern Architecture: 1920-1945*, (A.D.A. Edita; Tokyo 1983) 223-5.

25. J. Halliwell, 'Arcadia, Anarchy and Archetypes', *New Scientist*, (12 August 1995) 36.

26. *Royal Institute of British Architects Journal*, (December 1980) 46.

the steel structure is deliberately hidden. The planning brief for the Shell Centre stated that the building had to be clad in Portland Stone.<sup>27</sup> Limestone cladding is used to hinder the honesty of the structure. The Economist Tower is a concrete frame but the limestone cladding does not hinder the construction from being read as a frame structure.

A truly Puginian Modern architecture would leave out the use of limestone to clothe the reinforced concrete and steel frame structures. But will such an architecture ban limestone cladding altogether? The concept of cladding is absent in Pugin's argument. Ornament, he argued, is justified by propriety. In this context, Pugin might have agreed to the use of limestone cladding when controlled by propriety.

### *Truth to the Spirit of the Time*

"Acting on this principle [that is style and function of building should be related], different nations have given birth to so many various styles of Architecture, each suited to their climate, customs, and religion."<sup>28</sup> In their article entitled 'Thoughts in Progress: Seagram versus Shell' published in 1956, Lasdun's and Davies's distinction between art and craft of architecture is very illuminative. The former lies in the expression of the image while the latter lies in communicating such an image. "What the architect has to do is to express the significant image. He lives in the twentieth century, his buildings must communicate the significant side of the age in which he lives."<sup>29</sup>

In the Economist Development "there was an awareness that the project should express its own time and take advantage of technological development."<sup>30</sup> Portland Roach appeared on the building market for the first time in 1964. The Smithsons, aware of its textural and weathering potential, deliberately used Portland Roach as a cladding material. In Bracken House, Richardson's design of quilted stainless steel piers between the upper storey windows on St Paul's facade expresses its time of construction. Their design "is a concession to the taste of the time and dates the building more effectively than any other feature."<sup>31</sup>

27. *The Architect & Building News*, 1/8/62, 161.

28. A.W.N. Pugin, *Contrasts: or, A Parallel Between the Noble Edifices of the Middle Ages and Corresponding Buildings of the Present Day; Shewing the Present Decay of Taste*, 2.

29. D. Lasdun and J. Davies, 'Thoughts in Progress: Seagram versus Shell', 378.

30. *The Architects' Journal*, (16 December 1964) 1446.

31. P. Reyntiens, *The Financial Times Building*, 4.

### ***THE RHETORIC OF POST-WAR BRITISH ARCHITECTURE***

The Economist Development was said to present “itself to you honestly, not through a persona of ‘charming’ finishes.”<sup>32</sup> The towers “establish a rapport with the classical element of the older buildings in St. James’s, with their vertical emphasis, precision and refined details; on a raised and quiet plaza which reflects the tiny courtyard and alleyways so typical of the St. James’s area.”<sup>33</sup> Taylor states that Bracken House is “... one of the last great ‘stripped classic’ palaces which formed the transition between historicism and the Modern Movement ....”<sup>34</sup> The idiom of the building is “stripped-down classicism” with potential references to Wyatt’s “romantic block-effects” at Windsor Castle and/or Salvin’s treatment of Peckforton Castle.<sup>35</sup> Richardson’s design is more eclectic Edwardian rather than Georgian.<sup>36</sup>

And what about the Hopkins? The citation of the Royal Gold Medal for Architecture awarded to the Hopkins in 1994 states that there is “... no contradiction between Hopkins’ buildings and the culture of the late twentieth century ... they are elegant, pragmatic, transparent and minimalist.”<sup>37</sup> On winning their Royal Gold Medal Frank Duffy, the Royal Institute of British Architects President, said “Michael and Patty Hopkins ... use ‘real’ materials, and are inventive and true to the brief when conventional opinion would lead to believe that these are architectural assets no longer valued in this country. Their work rings true.”<sup>38</sup> Thornton, an engineer who worked with Hopkins for a number of years claims that the Hopkins select and use materials, whether traditional or high-tech, “... for their suitability rather than their conformity to a style.”<sup>39</sup>

This rhetoric, in line with Winter’s quotation above, strongly hints that post-war Modern British architecture agenda is in line with Pugin. This seems even

32. *The Architects’ Journal*, (3 September 1969) 562.

33. C. Mckean and T. Jestico, *Guide to Modern Buildings in London*, (Warehouse Publishing; London 1976) 25.

34. N. Taylor, ‘Sir Albert Richardson: A Classic Case of Edwardianism’, *Edwardian Architecture and its Origins*, (Alastair Service, 1975) 457.

35. P. Reyntiens, *The Financial Times Building*, 3.

36. C. Boyne, ‘Offices’, in *The Architects Journal*, (15 January 1959) 93.

37. D. Matheou, ‘Hopkins pair win Royal Gold Medal for their ‘elegant and pragmatic’ buildings’, *The Architects’ Journal*, (23 February 1994) 8.

38. *Ibid.*

39. J. Thornton, ‘Working with Hopkins’, *World Architecture*, No. 30, (1994) 40.

more to be the case when in the 1950s and 1960s the ethical approach to architecture was reasserted through the New Brutalist architecture and the architecture of the Smithsons, “‘enfants terribles’ of the profession, apostles of neo-Brutalism...”<sup>40</sup> ‘Neo-Brutalist’ is not the same as ‘New Brutalist’. ‘New Brutalism’ is “‘an ethic, not an aesthetic’. It describes a programme or an attitude to architecture.”<sup>41</sup> In 1957 the Smithsons pledged that Brutalism would be “... objective about ‘reality’ - the cultural objectives of society, its urges, its techniques, and so on. Brutalism tries to face up to a mass production society, and drag a rough poetry out of the confused and powerful forces which are at work ... Brutalism has been discussed stylistically whereas its essence is ethical.”<sup>42</sup> Lasdun and Davies summarised the three axioms of Brutalism thus: a-formalism, truth to structure and truth to materials.<sup>43</sup> The Smithsons point out that Brutalism is not just about materials but about ‘reality’. Their campaign for Brutalist set of morals widened with time as the New Brutalism became more of an aesthetic than an ethic. Pevsner argues that, in the Economist Development, the Smithsons were the opposite of the Brutalists because the building “has nothing of the display of over-dimensional concrete chunks which characterises today’s brutalism.”<sup>44</sup>

The concern of post-war British Modern architecture with moral uprightness regarding materials and construction was hardly sketched on the drawing board. In the 1920s, Atkinson and Bagenal had already noted that “We shall not be able to humanise steel-frame or reinforced concrete construction and make buildings in these or in any future material, logical and graceful, by any other essential process than that by which the Greeks long ago humanised marble masonry. We shall have to penetrate, as they did, to the roots of the problem, structural and artistic, and expend thought and talent upon it.”<sup>45</sup>

40. M. Webb, op. cit., 157.

41. R. Banham, *The New Brutalism - Ethic or Aesthetic?*, (New York 1966) 10.

42. A. and P. Smithson, ‘Thoughts in Progress’, *Architectural Design*, (April 1957) 113.

43. D. Lasdun and J. Davies, ‘Thoughts in Progress: The New Brutalism’, *Architectural Design*, (April 1957) 111-113.

44. N. Pevsner, *Buildings of England: London 1 [The Cities of London and Westminster]*, (Penguin Books 1973 (1st edn 1962)), 651.

45. R. Atkinson and H. Bagenal, *Theory and Elements of Architecture*, Vol. 1, (Ernest Benn; 1926) 6.