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## ***Roger Booth, Lancashire County Architect, 1962-83.***

Richard Brook

### **Introduction**

Adjectives such as ‘progressive’, ‘innovative’ and ‘optimistic’ pepper popular historical accounts of the post-war period, no less so in architecture than in other fields. The work of Lancashire County Architect’s Department throughout the 1960s and 1970s could be superficially described using any, and all, of these terms. Without a helmsman, progressive can simply be progress and innovative nought but lip service to conventional change, but Lancashire was blessed in having Roger Booth as its chief architect from 1962 to 1983. Booth’s career has been overlooked to date, particularly when one considers the size of the county and the department he eventually oversaw. Until the structural upheaval following the Local Government Act (1972), the county incorporated Manchester and Liverpool and, whilst the major cities and most county boroughs took care of municipal works within their boundaries, the remainder was under the jurisdiction of County Hall at Preston. Progress and innovation abounded in the largest post-war building programme outside that of the London County Council.

Roger Booth was appointed as Lancashire county architect in 1962, succeeding Charles H. Simmons when he died in post.<sup>1</sup> Simmons initially encouraged Booth to follow him to Lancashire, in 1959, from Shropshire, where Booth had formerly headed a division under Simmons as county architect. The work of the Lancashire County Architect’s Department included health centres, schools, colleges, libraries, police, fire and ambulance stations, magistrates’ courts, residential accommodation and archives, in places as far apart as Ulverston and Widnes. Furniture design and a Research and Development Group were also accommodated within the department. Simmons had assembled a strong team, whom he liked to refer to as ‘the troops’.<sup>2</sup> His management technique was a hangover from military service and in dogmatic style he ‘weeded out’ those less capable.<sup>3</sup> Booth had served as a surveyor in the Royal Artillery (1939-41) and as a Chief Engineer in the Royal Engineering Corps (1941-46), designing steel and reinforced concrete bridges in Italy and the Middle East and also involved in the delivery of irrigation systems and railways. This experience of the technical aspects of construction shaped his practice in Lancashire and his studies and early career in London and Shropshire. Booth’s own military service and strength of character meant that he could stand up to Simmons, which Simmons

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<sup>1</sup> Obit. *RIBA Journal* v69, May 1962, p.182.

<sup>2</sup> In conversation with Mrs. Dorothy Booth. Silverdale, Lancashire, 30 March 2015.

<sup>3</sup> *Ibid.*

respected, for his experience in 'the stress of military circumstance' had required resourcefulness and precision.<sup>4</sup>

### **Life before Lancashire**

Roger Booth was born in Huddersfield on 1 November 1920 and grew up in West Yorkshire. He attended King James Grammar School in Rastrick and commenced his architectural studies at the Leeds School of Architecture in 1937.<sup>5</sup> Joe Allen, a confirmed modernist, was the head, and the school was attached to the College of Art where both Barbara Hepworth and Henry Moore had recently studied. Close by were the prominent Quarry Hill flats, a pioneering mass housing scheme that drew upon Continental modernist influences.<sup>6</sup> Amongst the student body a sense of modernity was coupled with post-war visions of recovery and those recommencing their studies after the war were keen to aid social and technological progress.<sup>7</sup> Booth's training was interrupted by his aforementioned military service, but upon return he excelled as a student. He was the RIBA Archibald Dawnay Scholar and travelled to Sweden to study new structures and acoustics. He also won several competitions, exhibited at the RIBA, was president of the Student Association in Leeds and graduated with distinction in 1949. His thesis scheme, for a regional broadcasting headquarters, included extensive research into acoustic engineering with the BBC as a live project. His military service and architectural studies thus provided a strong technical base for his creative practice. Booth's technical capacity was innate; the research for his thesis scheme was brought to the attention of the Building Research Station by the RIBA.<sup>8</sup> As well as this he was an accomplished draughtsman, winning the Hardman Design Prize at Leeds, and his sketches and technical drawing skills were valuable tools when he came to translate ideas into buildings.

As a student Booth worked as an assistant architect with Abbey & Hanson of Huddersfield, but upon graduation, with recovery slow in northern climes, he took a post with Harrison & Seel in London.<sup>9</sup> Work remained precious, as

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<sup>4</sup> Quote extracted from cover letter to accompany Roger Booth's CV in his application for Assistant County Architect of Shropshire, 1957. Papers of Roger Booth, held by Dorothy and Guy Booth, Silverdale, Lancashire.

<sup>5</sup> 'Lancashire County Architect', *Huddersfield Daily Examiner*, 1 November 1962.

<sup>6</sup> In conversation with Mrs. Dorothy Booth. Silverdale, Lancashire, 30 March 2015. For Quarry Hill see Model estate: planned housing at Quarry Hill, Leeds / Alison Ravetz, London : Croom Helm [for the] Joseph Rowntree Memorial Trust, 1974; <https://municipaldreams.wordpress.com/2013/02/26/leeds-the-quarry-hill-flats/> [Accessed 1 April 2015]

<sup>7</sup> In conversation with Mrs. Dorothy Booth. Silverdale, Lancashire, 30 March 2015. Mrs. Booth gained a scholarship to the Architectural Association, but chose to study in Leeds where she met Roger.

<sup>8</sup> Papers of Roger Booth, held by Dorothy and Guy Booth, Silverdale, Lancashire.

<sup>9</sup> Biographical file, RIBA Library & in conversation with Mrs. Dorothy Booth. Silverdale, Lancashire, 30 March 2015.

evidenced in the architectural journals in the immediate post-war period, which were dominated by adverts rather than building studies. Architectural competition was one way of securing commissions and Booth was involved in the winning design for an exhibition hall in Edinburgh and the firm's entry for the TUC Memorial Building, which was awarded a commendation.<sup>10</sup> He also worked on two schools at Baldock and Hemel Hempstead, which were part of the Hertfordshire building programme, using the Hills system developed by the county for rapid construction.<sup>11</sup> As well as being involved in the pioneering development of new school building, Booth found his place amongst the architects of the Festival of Britain when Harrison & Seel were appointed as chief architects for the Festival Gardens at Battersea. He was divisional director for the entire Riverside Section and undertook the design of the Riverside Theatre in close partnership with Guy Sheppard, where he employed a new form of welded tube construction. The engineering skills learned by Booth in his wartime service were put to good use, and with Dex Harrison he published a number of articles on the economic use of steel in buildings.<sup>12</sup> He also collaborated with artists Osbert Lancaster, Hans Tidsall and John Piper to oversee the translation of their concepts into structures and buildings.<sup>13</sup> [FIG.01] Booth was offered a partnership in Harrison & Seel, but declined for personal reasons and sought new employment. His experience as an innovative designer and some contact with official architecture led him to consider the burgeoning public sector as a prospective ground to further his career, inspired by the work of Donald Gibson at Coventry. He was offered a post as part of the team working on Basildon New Town, but eventually accepted a job in Shropshire in 1952.<sup>14</sup>

[INSERT FIG.01 near here]

**Figure 01. Sketches for the Riverside Theatre by Roger Booth and photograph of construction. Source: Author's photograph of archived material held by Mrs. Dorothy Booth.**

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<sup>10</sup> 'Project for exhibition hall in Edinburgh; Architects: Harrison & Seel', *Architectural Design*, November 1949, pp. 263-265; 'TUC (headquarters) Memorial Building, Great Russell Street, London: premiated competition designs', *The Builder*, 23 July 1948, p. 92-101.

<sup>11</sup> 'Three schools designed by architects Harrison & Seel: at (1), Baldock. (2), Hemel Hempstead. (3) Baildon', *Architectural Design*, November 1949, pp.266-271; 'Three schools designed by architects Harrison & Seel: at (1), Baldock. (2), Hemel Hempstead. (3) Baildon', *Architect & Building News*, 16 December 1949, pp.635-642. For reference to Hertfordshire Schools see, 'The Hertfordshire achievement: new schools designed & built for Hertfordshire County Council; Designed by: County Architect, C. H. Aslin & his staff', *Architectural Review*, June 1952, pp.371-384; *A hundred new schools: school building 1948-1954*, Hertfordshire County Council, 1954; Saint, A., *Towards a Social Architecture. The Role of School Building in Post-War England* Yale University Press, 1987; Maclure, S., *Educational Development & School Building. Aspects of Public Policy* Longman, 1984; Bullock, N., *Building the post-war world: modern architecture and reconstruction in Britain*, Psychology Press, 2002.

<sup>12</sup> 'Economy in use of steel in building', *Architect & Building News*, 21 October 1949, pp.398-404; *Architects' Journal*, 20 October 1949, pp.429-430; *RIBA Journal*, November 1949, pp.17-22.

<sup>13</sup> In conversation with Mrs. Dorothy Booth. Silverdale, Lancashire, 30 March 2015.

<sup>14</sup> Biographical file, RIBA Library.

In Shropshire, Booth was first head of division and in 1957 was made assistant county architect. The portfolio of the department typically included schools, colleges, fire and police stations as well as master plans for new central areas, and Booth worked with Gordon Jellicoe and Ove Arup in the planning and realisation of buildings in Wellington, Oswestry and Shrewsbury. He was also part of the Column Group, a local association of 'architects and other professionals' who worked in the built environment.<sup>15</sup> In collaboration with the *Architectural Review* and Birmingham University Extra Mural Department, the Column Group prepared and published planning studies of four Midland towns.<sup>16</sup> Booth delivered a lecture as part of a series that included talks by Clough Williams-Ellis and Thomas Sharp, in a first association with architectural education that would continue later in his career as a lecturer and examiner at the University of Liverpool.<sup>17</sup> All of the schemes with which Booth was involved in Shropshire can be described as modern, most assuming the Scandinavian version of modernism sometimes described as the Festival Style in Britain. Working under Charles Simmons, Booth's published works included a small primary school at Ford, a new police headquarters in Wellington and the College of Further Education in Oswestry.<sup>18</sup> As well as the police headquarters, a team comprising Simmons, Booth, Jellicoe and Ove Arup prepared designs for more civic buildings to support the expanding town of Wellington. The scheme allowed for views of the Wrekin Hills and was to include new council offices, a central hall and a library; the latter was imagined as hexagonal in plan, a model that would re-emerge years later in plans for Morecambe in Lancashire. Development at Wellington was halted, however, as proposals for a new town at Dawley (later Telford) began to take shape. Booth quickly, and naturally, became a leader and a collaborator and these skills were recognised and valued by Charles Simmons, who, after leaving for Lancashire, beckoned Booth to follow him to assume a prominent role in a growing department.

### **Official Architecture**

When Roger Booth took his post as county architect, in 1962, official architecture was no longer the clear route to career success it had briefly been a decade

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<sup>15</sup> Papers of Roger Booth, held by Dorothy and Guy Booth, Silverdale, Lancashire.

<sup>16</sup> 'Midland experiment: 4th in series of articles, Townscape study of Shrewsbury', *Architectural Review*, May 1954, no. 689, pp.322-33; *Architectural Review*, September 1953, no. 681, pp.169-175.

<sup>17</sup> Booth's own notes of the participants and collaborators in the university project are alongside the clipping from the AR in his journal. Papers of Roger Booth, held by Dorothy and Guy Booth, Silverdale, Lancashire.

<sup>18</sup> 'Primary school at Ford, near Shrewsbury; Architect: C. H. Simmons, county architect', *Architects' Journal*, 2 September 1954, pp.282-284; 'College of further education, Oswestry, Shropshire; Designed by: County Architect's Department', *Architects' Journal*, 12 June 1958, pp.907-918; 'Divisional police headquarters, Wellington, Shropshire; Designed by: County Architects' Department', *Architects' Journal*, 1 November 1956, pp.633-646.

before. The private sector was booming and higher salaries were available outside of council departments. Official architecture was overburdened by 'frustrating procedure' and 'rigid ... salary scales', although *Official Architecture and Planning* reported that it could still attract those who were interested in the 'status and opportunities of chief architect'.<sup>19</sup>

Architects had worked in local government from the nineteenth century, but in 1910 there were 'not more than half a dozen boroughs and county boroughs with an independent architect's department'.<sup>20</sup> The first city architects' offices were founded in Hull and Manchester in 1909 and official architecture expanded rapidly in the wake of conflict after both 1918 and 1945. As departments grew in experience, so they grew in scale as councillors invested more trust in the direct commissioning process. The County Architects' Society and the City and Borough Architects' Society were formed in 1948 to 'win recognition of chief architect as designated chief officer'; thus, steadily, architects gained status in local government.<sup>21</sup> These formal societies were supported by one particular London gathering, which included Robert Matthew, Stirrat Johnson-Mashall and Donald Gibson, who met at the offices of RMJM or the Bride of Denmark to discuss the interests of 'salaried (official) architects' and how to influence the RIBA Council. Their success depended on sufficient numbers of sympathetic public sector architects attending meetings where decisions would be made by vote. This network was known as the 'Chain Gang'.<sup>22</sup>

In the 1950s the opportunities in official architecture were often preferable to those of private practice - real innovation was taking place in the re-planning of cities, the new town programme was in its first phase and authorities were realising ambitious dreams for new modes of living. In Sheffield, under Lewis Womersley, Jack Lynn and Ivor Smith developed streets-in-the-sky at Park Hill and the LCC pioneered mass housing under the direction of Leslie Martin. In Hertfordshire, the schools programme saw industrialised building techniques enter the formal vocabulary of mainstream modern architecture. Despite these endeavours on the part of local governments and their officers, at the end of

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<sup>19</sup> 'Interview of the month. Mr. Leonard C. Howitt answers six questions put to him by the editor', *Official Architecture and Planning*, August 1962, p.444.

<sup>20</sup> Transcript of a letter from the RIBA to the MHLG & Local Authority Associations advocating the virtue of architectural departments independent from surveyors or engineers in local government. 'The Architect in Local Government', *Official Architecture and Planning*, November 1960, p.520.

<sup>21</sup> 'Interview of the month. Mr. Leonard C. Howitt answers six questions put to him by the editor', *Official Architecture and Planning*, August 1962, p.444.

<sup>22</sup> The Bride of Denmark was a room in the basement of the Architectural Press' offices, fashioned as a pub. For further discussion of the Chain Gang and of the situation regarding architecture and the public sector see Gold, J.R., *The Practice of Modernism: Modern Architects and Urban Transformation, 1954-1972*, Routledge, 2007, pp.??

1960 34 boroughs with a combined construction budget of £100m still had no chief architect and the climate in the private sector had changed.<sup>23</sup>

At the turn of the 1960s some prominent figures left public appointments and established private practices to serve the fervour of urban renewal then sweeping across the United Kingdom.<sup>24</sup> In many city centres Comprehensive Development Areas (CDA) offered opportunities for architects to act as urban designers and large-scale commercial mixed-use development presented the challenge of the age in the redesign of cities. Manchester alone had seven such CDAs and consortia clamoured for contracts to build on vast tracts of the central area.<sup>25</sup> Not only were more exciting prospects available in the private sector, but issues of cost and efficiency also loomed large on the local government agenda. Despite these changes, some young graduates still viewed official architecture as 'a position of superb opportunity' and the range and scale of work available in the public sector was still appetising to some, even with diminished fiscal resources.<sup>26</sup>

### **County context**

In Lancashire Roger Booth was first appointed as principal assistant county architect, in 1959, and then deputy county architect in 1960, before assuming Simmons's post as county architect and eventually succeeding formally to the role in 1962.<sup>27</sup> It was the period between 1962 and 1974 when the most innovative work of the Lancashire County Architect's Department was undertaken. The Local Government Act was implemented in April 1974, when the creation of the metropolitan counties of Greater Manchester and Merseyside significantly altered the political form of the old county. This reform coincided with the oil crisis, which began in October 1973, and combined to curtail investment in all aspects of the department's work, and particularly its experimental arm.

It was the research and development of construction systems and furniture that characterised Roger Booth's tenure as county architect, founded on his early experience in the Royal Engineers and his previous practice. But not only was he an architect with demonstrable talent as a designer with technical acumen; he

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<sup>23</sup> 'The Architect in Local Government', *Official Architecture and Planning*, November 1960, pp.520-521.

<sup>24</sup> Amongst them were Sheppard-Fidler (Birmingham) and Womersley (Sheffield). 'Comment: To Enter Private Practice', *Official Architecture and Planning*, March 1964, p.279.

<sup>25</sup> The Arndale Centre, G-Mex Hall, Market Place and Brazennose Street developments all had their genesis in the CDA designation of the early 1960s. See Millar, J., *Manchester: City Centre Map*, Manchester City Council, 1967.

<sup>26</sup> George, S., 'The Next 25 Years in Official Architecture', *Official Architecture and Planning*, September 1962, pp.556-557.

<sup>27</sup> Post advertised in *The Guardian*, 23 May 1960.

was also a gifted leader who understood the political and media context in which his department existed. Booth was adept at recognising his colleagues' talents and deploying them in roles where they would excel.<sup>28</sup> It is possible to read his accession to county architect in the production of the annual reports of the department.<sup>29</sup> The first report issued after 1962 included descriptions and photographs of new buildings, rather than simply listing the projects against a tabulated budget as in previous years. More illustrations of forthcoming projects, as well as completed buildings, populated the increasingly thorough documents into the late 1960s and early 1970s, showing Booth's marketing of the work rather than simply the reporting of it. The period up to 1974 was particularly productive for the department in which there were more than a hundred architects as well as research and development and furniture design groups.<sup>30</sup> R&D may now seem an extravagant component of a local government department, but the drive for economy through experiments in system building and streamlined procurement processes was central to the arguments for the creation and retention of local government architectural departments. In 1958 the Minister of Education, Lord Hailsham, reminded parliament that the 'radical innovation' by local government departments in the school rebuilding programme had saved approximately £200m of public money.<sup>31</sup>

### **Systems logic**

In the context of the provision of buildings for the same purpose in many different locations, the logic of systemised building was inescapable. Leonard Manasseh in his 1964 address to the Architectural Association referred to the 'Art Boys' and the 'System Boys' as the dominant aesthetics that characterised the era.<sup>32</sup> The national history of system building is well recorded, particularly in school and university construction.<sup>33</sup> Much of the innovation in the United Kingdom occurred in the realms of official architecture, where the Hertfordshire schools development set the agenda in its rejection of the national programme

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<sup>28</sup> In conversation with Ben Stephenson, former Assistant County Architect. 5 August 2015, Sedgwick, Cumbria.

<sup>29</sup> See Reports of the County Architect 1948-1973, CC/GR 1-24, Lancashire County Records Office.

<sup>30</sup> See Franklin, G., Harwood, E., Taylor, S. & Whitfield, M., *England's Schools 1962-88, A Thematic Study, English Heritage Research Report Series no. 33-2012* >> <http://research.historicengland.org.uk/Report.aspx?i=15107> << [Accessed 20 May 2015]; Reports of the County Architect 1948-1973, CC/GR 1-24, Lancashire County Records Office.

<sup>31</sup> 'The Architect in Local Government', *Official Architecture and Planning*, November 1960, pp.520-521.

<sup>32</sup> As recounted by Esher, L.B., *A Broken Wave: The rebuilding of England 1940-1980*, Allen Lane, 1981, p.67.

<sup>33</sup> See Saint A., *Towards a Social Architecture. The role of school-building in post-war England*, Yale University Press 1987; Franklin, G., Harwood, E., Taylor, S. & Whitfield, M., *England's Schools 1962-88, A Thematic Study, English Heritage Research Report Series no. 33-2012*.



for hatted accommodation and the 'close integration of educational needs and technical means'<sup>34</sup>; a period referred to as 'The New English Humanism'.<sup>35</sup> The successes in Hertfordshire inspired the Ministry of Education to establish their Development Group in 1949, which encouraged the private sector to develop multi-storey systems for secondary schools, as pioneered in Wokingham, Coventry, Belper and elsewhere using both hot- and cold-rolled steel. These programmes faltered, for construction firms like Laing, who developed a lightweight concrete systems, did not have the market security to truly invest in the in depth study of educational needs and attendant evolution of building technologies. A well-organised official architect's department with good funding could arguably provide more room for innovation and designing prototypes, as Booth was to show at Lancashire.

After Hertfordshire, the next county to successfully devise a structural system for building schools was Nottinghamshire, which founded the Consortium of Local Authorities Special Programme (CLASP) so that a group of relatively small authorities could share the burden of development costs, initially for building in areas of mining subsidence. Between 1957 and 1966, 448 educational buildings were completed and the membership grew from the original seven founders to a group of seventeen. Further consortia were formed in the following decade - in 1961 the Second Consortium of Local Authorities (SCOLA) was constituted, followed by the South-Eastern Architects Collaboration (SEAC), Consortium for Method Building (CMB) and Consortium of Local Authorities in Wales (CLAW) in 1963. The Organization of North Western Authorities for Rationalised Design (ONWARD) was created in Lancashire in 1965.<sup>36</sup>

The ONWARD building consortium was formed from three county councils and twelve county borough councils in the area between the Mersey and the Solway Firth. At its heart was the adoption of building methods already established by the Lancashire County Architect's Department, which provided its nucleus of technical officers. Lancashire County Council also employed new staff, who were then seconded to service the programme and operated from a separate office in Preston. This arrangement 'offered Booth a happy medium between overall control and the delegation of development work'.<sup>37</sup> At its inception there were three building methods under consideration: a rationalised traditional construction for small-scale buildings, a timber-framed system intended for residential development and workshops, and the Lancashire Heavy Concrete

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<sup>34</sup> Wigglesworth, G.H., 'Schools consortia and the future', *RIBA Journal*, June 1966, p.265.

<sup>35</sup> Oddie, G. 'The New English Humanism – prefabrication in its social context', *Architectural Review*, September 1963, pp.180-182.

<sup>36</sup> Wigglesworth, G.H., 'Schools consortia and the future', *RIBA Journal*, June 1966, p.265. For a history of the various consortia see Maclure, S. (1984) *Educational Development & School Building. Aspects of Public Policy* (Harlow: Longman) pp.95-199.

<sup>37</sup> Franklin et al. (2012) p.351

System for secondary schools and office buildings.<sup>38</sup> Under Booth's direction the department also examined branch libraries, old people's accommodation and, most notably, police stations as having the potential to be standardised and formed from component systems. The Lancashire school building system in concrete was known as GRID; this and the other methods were celebrated by the department as the 'first and only serious industrialised building systems north of Nottingham'.<sup>39</sup>

### **School system**

As the ONWARD consortium consolidated its staff and activities the building programme for schools gathered apace. By January 1972, 53 new schools had commenced construction in Lancashire, 19 had been finished and a further 69 planned to be completed by September 1973 at a total cost of £4.3m.<sup>40</sup> Roger Booth headed the team in a 'massive administrative drive involving two years of research and cooperation with educationalists'.<sup>41</sup> The timber construction system that was adopted and adapted from earlier buildings (ONWARDS Mark I) was designed to be as flexible as possible for future adaptation and changes in learning and teaching methods. As with many systems deployed by local authorities, it was more a 'method of building' in 'the new rationalised tradition', known in Lancashire as 'Rat. Trad'.<sup>42</sup> The construction process included conventional brick walls, albeit on a modular grid and using a 'metric brick'.<sup>43</sup> It was specified with the aim of achieving 'minimum maintenance' and compiled as a rational response to 'performance standards laid down by the various regulations'.<sup>44</sup> It was designed to be delivered by the smaller local authorities within the consortium and was implemented at new primary schools across the county.

ONWARDS Mark II further rationalised the system into a 1200mm grid and introduced aluminium framing as well as an 'utilideck' roof system that carried all the services and was available in flat or mono-pitched versions. Correspondingly, the major focus of an *Architects' Journal* Building Study of

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<sup>38</sup> Wigglesworth, G.H., 'Schools consortia and the future', *RIBA Journal*, June 1966, p.272.

<sup>39</sup> County Architect's Report, April 1971 to March 1973, Lancashire County Council, p.13. CC/GR/22, Lancashire County Record Office.

<sup>40</sup> 'New Schools in Lancashire', *Building*, 14 July 1972, p.77.

<sup>41</sup> 'New Schools in Lancashire', *Building*, 14 July 1972, p.77.

<sup>42</sup> Term used in Franklin et al. (2012) p.352 and applied with specific reference to Whiston Willis county Primary school near Prescott (c.1962). Andrew Saint credits the origin of the term as stemming from a response to Nisbet and Pile's approach to cost planning and an innovative school at Putney by Powell and Moya. Saint, A. (1987) p.153.

<sup>43</sup> Building Study, Infants' School ONWARD Consortium, *Architects' Journal*, 19 April 1972, p.850.

<sup>44</sup> 'New Schools in Lancashire', *Building*, 14 July 1972, p.78.

Brunshaw Primary School in Burnley was on mechanical servicing and the provision of a 'controlled internal environment' that also responded to the design team's aim to 'achieve rationalisation of services by integrating them into the design philosophy'.<sup>45</sup> Energy was an abundant resource and the running costs and waste, associated with heavily serviced, deep-plan internal environments, were not at odds with the efficiencies achieved elsewhere in the construction process. Indeed, the system was seen as a 'breakthrough', and the techno-centric orientation of the project meant that the mechanical engineering design in service of the deep open-plan arrangement was reported as an exemplar. The scheme referred to Californian School Construction Systems Development (SCSD) which itself was informed by early system building in the United Kingdom - perhaps the fact that it took its cues from Californian precedent should have been a sign of its climatic contradictions.<sup>46</sup> The plans of these schools allowed for a series of 'loosely connected spaces' described as 'current convention in design for education'. Here was the collision of policy, pedagogy and technology in the production of school buildings. Whilst open to critique in terms of its internal environment, it was emblematic of the political structures in its policy driven plan, represented the organisation of the consortium in its Rat. Trad. construction and embodied the technological innovation of the Architect's Department directed by Roger Booth.

### **Concrete Realisation**

It was common practice across the UK to re-use already rationalised details and building systems in school building. This was also true of the development of Lancashire's concrete construction system (GRID) by the R&D group in collaboration with a private architectural practice, Morrison & Partners of Derby, and the manufacturer.<sup>47</sup> This system was most extensively deployed in the construction of the county's police stations but was primarily tested in the realm of school design. Four of the textured concrete panels that would eventually form the county's most fortified monoliths were first assembled in the playing fields of a school in Accrington, which was under construction as the R&D group were at work. This prototype remains in place to this day and had a roof and door applied to act as a shed, referred to in the 1971-3 review of the department's work as 'surely the most expensive groundsman's store ever constructed!'<sup>48</sup> [FIG.02] The intent was to design and develop a load-bearing concrete panel that would transfer its own dead load externally through the façade and reduce the

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<sup>45</sup> Building Study, Infants' School ONWARD Consortium, *Architects' Journal*, 19 April 1972, pp.839-852.

<sup>46</sup> Building Study, Infants' School ONWARD Consortium, *Architects' Journal*, 19 April 1972, p.845.

<sup>47</sup> *Industrialised Building Systems & Components*, February 1966, pp.73-80; *System Building and Design*, November 1967, pp.13-22, 19. Morrison had also developed an earlier aluminium system for school buildings known as 'Derwent'. See Saint A, (1987) p.129.

<sup>48</sup> County Architect's Report, April 1971 to March 1973, Lancashire County Council, p.117. CC/GR/22, Lancashire County Record Office.

need for internal columns, adding to the established advantages inherent in system building with an attempt to minimise extraneous structure and to free internal planning – this suited both contemporary pedagogic approaches in schools and office layouts informed by *bürolandschaft* planning. The advantages were discussed in terms of flexibility, the ability to achieve consistent environmental conditions, reduced maintenance, and the exclusion of noise and dust. The windows were conceived as either punched apertures or as slots between panels. Reports of the county architect indicated that the lack of natural daylight was a secondary concern to the architects at the time – glazing, in this context, was considered in terms of its poor thermal performance. The system was variously labelled the ‘Heavy Concrete Method’, ‘Lancashire Concrete Method’ as well as its earlier name, ‘GRID’, and was proposed as suitable for buildings of three to seven storeys.

[INSERT FIG. 02 near here]

**Figure 02. Prototype concrete panel assembly on school playing field, Accrington. Source: Author’s photograph, January 2012.**

Schools, which had been at the forefront of technological innovation in construction, were naturally the first to inherit the finalised concrete construction system. The first of these was Castle County Secondary School in Lancaster, it was also the first in the country to be built entirely from load-bearing panels. The design of the school began in 1962 and the building was handed over in September 1966.<sup>49</sup> In developing the concrete system the project team dealt with the technical performance of the panels and spent time researching their aesthetics. This was manifest in two notable areas, the finish of the concrete and the profile of the roof. To give texture, the standard panels were combed using two distinct methods and bespoke panels were cast to give abstract relief patterns for interior walls, researched by the architects themselves at the manufacturers’ site.<sup>50</sup> They also experimented with different colours and finishes with a range of aggregates and dyes. Angling the roof, it was accepted, would ‘introduce dimensional difficulties’ and each pitch was specified to the modular sizes, giving a rather striking butterfly profile to the gable walls. This was intended to ‘provide a more efficient water shed’ and ‘less maintenance’ as well as creating a ‘positive character’. The punched windows formed in the panels at the point of manufacture were deliberately designed to minimise the use of curtain wall glazing. To combat the reduced natural daylight in the school environment another motif common to the department was employed – the pyramidal rooflight. This form was developed in Lancashire in another standardised building type, that of the branch library, the first example (County Branch Library Type 4) being built at Shevington in 1970 followed by at Garstang and Burnley.<sup>51</sup> Booth employed strong geometric forms throughout his

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<sup>49</sup> ‘Castle County Secondary School, Lancaster; Architect: R. Booth, county architect’, *System Building & Design*, November 1967, p.14.

<sup>50</sup> County Architect’s Report, April 1963 to March 1964, Lancashire County Council, p.21. CC/GR/17, Lancashire County Record Office.

<sup>51</sup> For a history of Lancashire post-war libraries see Bone, B. (2012) *Post-war Public Libraries in Lancashire: A Case for Conservation*. Thesis returned in part satisfaction of the Graduate Diploma

career and the hexagon and pyramid were particularly evident in works at Lancashire. The second of the concrete schools, Glenburn High School and Further Education College, was completed in the new town of Skelmersdale in 1967.<sup>52</sup> It featured the butterfly roof profiles as well as hexagonal and star plan pavilion type structures to contrast against the orthogonal geometry necessarily produced by the modular concrete system. The Architect's Department also designed the civic elements of Skelmersdale town centre, constructing the police station (1976) and library (1977) in the heavy concrete method.<sup>53</sup> FIG. 03]

[INSERT FIG. 03 near here]

**Figure 03. Police Station and Library, Skelmersdale. Source: Author's photograph, June 2011.**

### **Police Brutality**

The police station at Skelmersdale adopted the 'Elemental Design Approach' (EDA) that had become a key part of the drive for efficiencies in the County Architects' Department. The EDA was a method of simplifying brief requirements for particular building types and had evolved from early studies of homes for the elderly, using the ONWARD Mark I Rat. Trad. system, to police stations using the Heavy Concrete method. Prior to this, the last bespoke police station to be designed was Chorley (1968), accompanied by a magistrate's court [FIG. 04]. Indicative of the direction of standardisation, the construction details of this station building were replicated at Bury in 1969 (though Bury also had a nuclear bunker and shooting range in the sub-basement!)<sup>54</sup> and the court informed a very similar construction in Leyland (1971). In the initial stages of the EDA the police stations were conceived as a kit of parts, the assembly of which would be specific to the particular site or programme – a divisional HQ in a town centre would require elements not necessary for smaller sub-divisional stations. The 'Elemental Design Components' consisted of operations wing, cell wing, basic ground floor, upper floor plates, service cores and chimneys. In the 1966-67 County Architect's Report, various configurations of these elements were presented as physical models to demonstrate the ability of the system to meet the various types of station requirements [FIG. 05]. As the EDA approach was married to an adapted version of the existing concrete construction system the

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in Building Conservation, Architectural Association; County Architect's Report, April 1969 to March 1971, Lancashire County Council, p.12, CC/GR/21, Lancashire County Record Office; County Architect's Report, April 1968 to March 1969, Lancashire County Council, pp.5-6, CC/GR/20, Lancashire County Record Office.

<sup>52</sup> County Architect's Report, April 1965 to March 1966, Lancashire County Council, pp.18-19, CC/GR/18, Lancashire County Record Office.

<sup>53</sup> County Architect's Report, April 1975 to March 1977, Lancashire County Council, p.20, LCC/10/1/2, Lancashire County Record Office.

<sup>54</sup> Site visit by the author, accompanied by the Greater Manchester Police surveyor. 3 November 2010.

complete standardisation from the first floor upward was proposed. It was considered that this would permit the ground floor to be designed as site and programme conditions dictated. Despite the apparent brutality of the forms, the qualities of civic design and public realm were strongly articulated in the descriptions of the schemes, the 'solid character' of the new police HQ in Wigan (1973) was said to act as part of the town's urban grain and to 'close the vista from Millgate'.<sup>55</sup>

[INSERT FIG. 04 near here]

**Figure 04. Police Station and Magistrate's Court, Chorley. Source: Author's photograph, May 2011.**

[INSERT FIG. 05 near here]

**Figure 05. Elemental Design Components for police stations. Source: Author's photograph, extract from County Architect's Report, 1966-67.**

The most dramatic of the police stations to be constructed was the Divisional HQ at Blackpool (1975). The scheme was closely tied to other proposed developments in the town and was anticipated to form an integral part of the wider public realm. Adjacent to the police station were the earlier Crown and Magistrates' Courts, designed by local practice Tom Mellor and partners, and a new multi-storey car park to serve the town centre<sup>56</sup> [FIG. 06]. The concrete panels of the station were made from specific sand and aggregates to try to match the colours of the Portland stone used to face the court buildings.<sup>57</sup> The primary access to the station was via a raised pedestrian deck, composed from a series of landscaped plazas between the formal elements. Sunken landscaped gardens were used to bring light into deeper areas of the plan on the ground floor. In collaboration with the local authority the entire scheme was intended to knit into the rest of the townscape by the provision of bridge links and further development to be procured by Blackpool Corporation. Some of this connective tissue was realised, but the piecemeal removal of various components mean that the high level plazas, now devoid of anything remotely green, have a dystopian atmosphere. In a *Buchanan Report* meets *Logan's Run* landscape of chamfered and diagonal hard surfacing, the elevated squares now only link the low slung horizontality of the courts against the keep like monolith of the station office tower [FIG. 07]. The potential for the failure of the public realm was recognised by the architects who acknowledged that without the full delivery of the 'planning concept' by the Corporation, the buildings were 'to some extent,

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<sup>55</sup> County Architect's Report, April 1971 to March 1973, Lancashire County Council, p.119, CC/GR/22, Lancashire County Record Office.

<sup>56</sup> Not every municipal building in Lancashire was designed by the County Architects' Department. Tom Mellor and George Grenfell-Baines both received commissions from Simmons when he was County Architect, Booth continued this patronage. One such example is the library at Ormskirk in collaboration with Mellor. In conversation with Mrs. Dorothy Booth. Silverdale, Lancashire, 30 March 2015.

<sup>57</sup> County Architect's Report, April 1975 to March 1977, Lancashire County Council, p.57, LCC/10/1/2, Lancashire County Record Office.

isolated from the public and the Promenade'.<sup>58</sup> The fortified appearance of the police stations did not escape the attention of the public either; apparently the question 'are the police to be issued with bows and arrows?' was not uncommon.<sup>59</sup> The secure sentinels were also built in Morecambe (1971), Preston (1972) and St. Helens (1973), bringing the total number of police stations built using the Heavy Concrete Method to six.

[INSERT FIG. 06 near here]

**Figure 06. Model of scheme as proposed in Blackpool. Source: Author's photograph, extract from County Architect's Report, 1971-73.**

[INSERT FIG. 07 near here]

**Figure 07. Blackpool Divisional Police HQ and Magistrates' Court. Source: Author's photograph, June 2011.**

From today's perspective it is easy to see how these structures were perceived as authoritarian. The intent of the architects was to allow the ground floor to seamlessly integrate with well-designed public space and for the solid upper elements to make positive contributions to the townscape within which they were set. In many respects these schemes would have sat comfortably in the minimal canon of the early 1990s and the term 'monolithic architecture' readily applied. Arguably before their time in aesthetic, yet not necessarily wholly original in their use of system building components, there is a clear sense that these schemes could not have existed outside of the very specific conditions in which they were formed. The post-war period and the national drive for renewal, Booth himself and his appreciation of architectural technology, the experimental and well-funded department and the structural associations between local government and the emergency services, all had their bearing on the aesthetic product.

No more schools were built using the concrete system exclusively, but it was sparingly deployed on certain elements of later school buildings. The cost of production and difficulties with on any on-site adjustment meant it was prohibitive to the smaller local authorities within the ONWARD Consortium. One architect from the department recalled, 'every year we had a programme of concrete schools ... and as it developed, we were slowly taking out the concrete'.<sup>60</sup> As the use of concrete diminished, further innovations were prototyped by the ever-imaginative group and the first plastic construction system in the UK emerged from the department in the early 1970s.

### **Plastic Fantastic, the Fulwood 'Bubble'**

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<sup>58</sup> County Architect's Report, April 1975 to March 1977, Lancashire County Council, p.55, LCC/10/1/2, Lancashire County Record Office.

<sup>59</sup> County Architect's Report, April 1971 to March 1973, Lancashire County Council, p.116, CC/GR/22, Lancashire County Record Office.

<sup>60</sup> As quoted in Franklin et al. (2012) p.354. Pers.Comm. 20 August 2012, David Davies, former Architect with Lancashire County Council.

The principle of industrialised building for schools had almost become a doctrine under the direction of Stirrat Johnson-Marshall as Chief Architect for the Ministry of Education; its logic was reinforced by successive Building Bulletins and design guidance. The consortia 'were intended to save time and money' and 'to give local authority architects everywhere the chance of building more and better schools'.<sup>61</sup> Lancashire had evolved new timber and concrete building methods for schools, so it is no surprise that a school should be the testing ground for a new plastic construction system. The aim of the department was to build an entire school from the plastic system at a site in Thornton-Cleveleys, but, before they did, a prototype single classroom was constructed as an addition to a Victorian primary school building on Kennington Road in Fulwood, north of Preston [FIG. 08].

[INSERT FIG. 08 near here]

**Figure 08. The Fulwood 'Bubble' at Kennington Road Primary School. Source: Author's photograph, April 2012.**

The 16ft (4.8m) tall structure was based on a modified icosahedron. A total of thirty-five glass reinforced polyester moulded panels came together to create the whole, which was bolted to a concrete pad foundation. The interior was lined with phenolic foam to provide insulation and achieve the requisite acoustic properties for teaching. The idea for the experimental building was credited to Roger Booth, but it was architects Ben Stephenson and Mike Bracewell who developed the material technology. Using a new phenolic foam system developed by Synthetic Resins Ltd. of Liverpool as a base and a GRP laminate face.<sup>62</sup> The system was tested to destruction by SRL in their laboratories and by the Warrington Research Centre and was demonstrated to 'more than meet the requirements of the Fire Regulations' and, in doing so, became the first all plastic building in the country to perform thus.<sup>63</sup> According to reports the children and staff were 'very pleased with it' as it allowed freedom of movement, was warm and had good acoustics.<sup>64</sup>

The experimentation also extended to the furniture as the new form of classroom, without walls or corners, demanded new ways of working and subdividing the space. In April 1973 furniture design consultants Macpherson and Kernaghan were appointed to liaise with the County Architect on the development of a new range of plastic furniture that was complementary to the construction system but that could also be rolled out across the county.<sup>65</sup> The

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<sup>61</sup> Saint, A (1987) p.191.

<sup>62</sup> 'In the round', *The Guardian*, 26 November 1974, p.21; 'School is first to use new grp system', *Environment (North West)*, October 1975, p.4. (Copies held at LSE Library).

<sup>63</sup> County Architect's Report, April 1974 to March 1975, Lancashire County Council, p.91, LCC/10/1/1, Lancashire County Record Office.

<sup>64</sup> 'In the round', *The Guardian*, 26 November 1974, p.21.

<sup>65</sup> County Architect's Report, April 1974 to March 1975, Lancashire County Council, p.116, LCC/10/1/1, Lancashire County Record Office.



most radical item in the range was a type of classroom 'dresser' known as the 'main frame'. It was at once a room divider and storage device to which mirrors, pin boards and various storage units could be attached and it compensated for the lack of vertical display surfaces in the proposed structure. The first prototypes for the furniture were installed in the school in October 1973 and the 23 pupils and their teacher were able to partition the space as they wished.

The classroom was a rather strange juxtaposition against the Victorian primary school to which it was appended; it can only have been that the school needed space and the department needed to test the system that saw this awkward collision. The advanced nature of the system was mirrored in the way in which it was being developed, using three-dimensional computer aided design software [FIG. 09]. The classroom was completed in November 1974, unfortunately the oil crisis of the same year put pay to any further development or realisation of an entirely plastic school.<sup>66</sup>

[INSERT FIG. 09 near here]

**Figure 09. 3D CAD representation of full plastic primary school. Source: Author's photograph, extract from County Architect's Report, 1974-75.**

## Change

1974 was also the year of local government restructuring under the Act of 1972. The large urban centres of Manchester and Liverpool became metropolitan authorities as Greater Manchester and Merseyside were formed and much of rural north Lancashire became part of Cumbria. Booth pre-empted this change and the impact it was likely to have on the department and chose to reflect on the work produced. The County Architect's Report of 1973 provided a retrospective examination of the office of county architect since its inception in 1905.<sup>67</sup> Particular focus was applied to police stations, fire stations, libraries and colleges, where the department had contributed to the development of the building type.

Not all county architects' departments were as dynamic as Lancashire – Buckinghamshire produced surprisingly dull work in comparison, under the visionary Fred Pooley who had dreamed up a new town based upon a monorail, known as 'Pooleyville'.<sup>68</sup> They stuck steadfastly to rationalised traditional methods and would only deploy 'tried and tested' methods of prefabricated

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<sup>66</sup> County Architect's Report, April 1974 to March 1975, Lancashire County Council, p.91, LCC/10/1/1, Lancashire County Record Office.

<sup>67</sup> Lancashire was the first county to appoint an architect in 1905. County Architect's Report, April 1971 to March 1973, Lancashire County Council, p.11, CC/GR/22, Lancashire County Record Office.

<sup>68</sup> See Ortolano, G. 'Planning the urban future in 1960s Britain', *The Historical Journal*, vol. 54, no.2, 2011, pp.477-507.

construction.<sup>69</sup> Directed by Roger Booth, the Architects' Department of Lancashire County Council delivered a vast number of projects and a raft of innovations and national firsts in construction. A palpable sense of the technological existed and persisted in their schemes, not just in the system-based design discussed here, but in the provision of other buildings like the radar station and navigation school at Fleetwood, county wide emergency communications systems, the police stations at Chorley and Bury, the County Records Office in Preston and in the unrealised scheme for a towering new County Hall [FIG. 10].

[INSERT FIG. 10 near here]

**Figure 10. Model of proposed tower for County Hall, Preston. Source: Author's photograph, from original held by Mrs. Dorothy Booth.**

The precise role of the county, city or borough architect varied across the country, but had clearly defined local limits. In Manchester, for example, housing was outside of the office of the City Architect and delivered by a separate department. Roger Booth defined his role and argued for the architect to assume a leading position in all new development; 'the architect was "king"'.<sup>70</sup> Booth was seen as an authoritative Chief Officer by some of his junior staff, which was said to upset certain councillors who felt he ought to be deferent to their status, but his expertise ensured their trust in his capacity to steer the department.<sup>71</sup> Under his tenure the department thrived and firmly established a tradition of research and innovation in construction. Official architecture was at its peak in the period studied here and for those with drive and determination, the opportunity to direct positive social change through the built environment was there for the taking. Roger Booth brought his wartime experience and his early career knowledge to the post of County Architect and maintained a close observation of the design work in the Department throughout his tenure; he retired in 1983 following 21 years in post.<sup>72</sup>

This essay has only touched upon a fraction of the work produced between 1962 and 1983 and a full gazetteer is likely to be unachievable. Booth's other professional associations, with the RIBA Regional Council, as the President of the North Lancashire Society of Architects, his role as an examiner at the University of Liverpool, earned him the title 'North-West Pacemaker', and, as reported in 1970, his work was 'little known outside the north-west, but the quality of building achieved deserves recognition.'<sup>73</sup>

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<sup>69</sup> 'The work of Buckinghamshire County Architects Department', *Official Architecture and Planning*, September 1963, p.844.

<sup>70</sup> As quoted in Franklin et al. (2012) p.354. Pers.Comm. 20 August 2012, David Davies, former Architect with Lancashire County Council.

<sup>71</sup> In conversation with Kevin Eastham, former Head of Architectural Section of Planning Dept. 24 July 2014.

<sup>72</sup> 'Roger Booth retires' *Building*, 29 April 1983, p.19.

<sup>73</sup> 'North-west pacemaker', *Architects' Journal*, 11 February 1970.

