

How the invention of the term ‘built environment’ contributed to a broader architectural education and opened up opportunities for interdisciplinary collaboration.

# Articulating the built environment

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This research starts with a straightforward question: how was the term ‘built environment’ first employed in the English language? While architects and architectural writers have long used the word ‘environment’ to mean conditions created by and within buildings, the creation of the ‘built environment’ is relatively recent.<sup>1</sup> This article retrieves the initial articulations of the term in 1963–4 and situates them in the paradigm shifts observed in the architectural field, including the reverence for scientific research. We will focus on the discussions around the RIBA’s proposal for a Research Council for the Built Environment in 1964. We will also highlight the early activities of the Centre of Environmental Studies (CES), established in 1967, as one of the outcomes of these efforts. How these efforts intersected with contemporaneous debates about practices and education in architecture and planning will also be considered.

## Built environment in the white heat

A survey of library catalogues, publication indexes, and archival databases shows that the term ‘built environment’, in English, became visible in British architectural magazines in 1963–4. The term was evoked briefly in December 1960 in the *Architects’ Journal (AJ)* related to Richard Llewelyn-Davies’ appointment at the Bartlett School of Architecture, University College London.<sup>2</sup> The term was used in passing to describe the ‘rationalism’ in Llewelyn-Davies’ curriculum reform. Although the *AJ* did not elaborate on their usage of the term, the article shed some light on the importance of Llewelyn-Davies in the articulation of the ‘built environment’. In January 1964, Llewelyn-Davies and Peter Cowan delivered a seminar at the RIBA on the theme ‘The Future of Research’.<sup>3</sup> The seminar transcript, published in the April issue of *Journal of the Royal Institute of British Architects (RIBA J)*, stated that ‘the problems of the built environment, our cities and our houses, are now of the very highest social priority’.<sup>4</sup> Their speech was a preview into the RIBA’s proposal for a Research Council for the Built Environment, which was submitted to the Heyworth Committee on Social Studies in late January 1964. The proposal was then published in the *RIBA J* in March 1964 entitled ‘Research into Problems of Planning and Construction: RIBA Statement’.<sup>5</sup> The report of the Heyworth Committee, published in 1965, also included a section

explaining their rejection of the proposed Research Council for the Built Environment.<sup>6</sup> Meanwhile, Llewelyn-Davies would remain an instrumental figure in subsequent efforts, including becoming the Chairman of the CES in 1967.

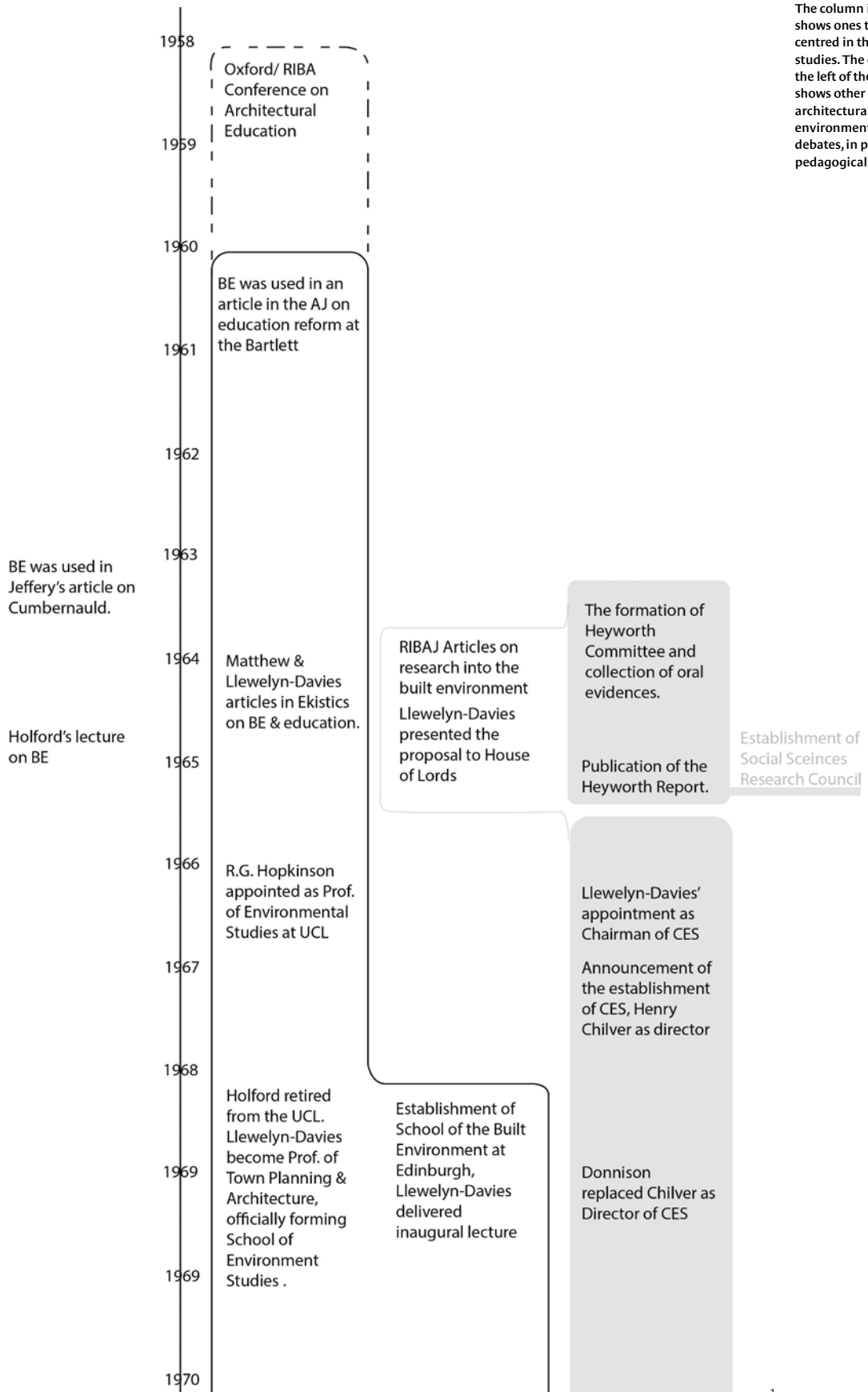
However, there was more divergence from this already complicated timeline of events [1]. In May 1963, *Architectural Design* magazine (*AD*) published an article by writer Robert Jeffery on the design of Cumbernauld town centre, in which he used the term ‘built-environment’ repeatedly.<sup>7</sup> In this one-page article, Jeffery’s focus was not on the design by Hugh Wilson and Geoffrey Copcutt, since it was featured in the same issue of *AD* and had been published widely at the time.<sup>8</sup> Instead, Jeffery argued that the Cumbernauld town centre could be used to consider three interrelated topics:

1. The role of the architect in shaping the built-environment
2. The multi-level, multi-purpose city centre
3. The nature of urban architecture in our time.<sup>9</sup>

In this definition, the term built-environment was used to denote the physical conditions that were created by architecture, as seen in the first point. However, in Jeffery’s writing, one can also notice that he used the built-environment as a short-hand for the specific ‘multi-level, multi-purpose city centre’ design found in the Cumbernauld Town Centre. Jeffery’s article and his analysis on Cumbernauld is beyond the scope of my current paper. Neither *AD* nor Jeffery published follow-up articles on the ‘built-environment’. Moreover, Jeffery also positioned his article as a response to the Team 10 Primer published in *AD* in 1962, hence to fully examine his argument one will also have to consider the contentious debates in postwar modernism.<sup>10</sup> For this current study, Jeffery’s article serves as a good reminder of the parallel architectural-environmental debates that were unfolding at the time.

In comparison, another articulation of the ‘built environment’ is largely forgotten, even though it was put forward by more prominent figures and institutions in British architecture at the time. In early 1964, the RIBA prepared a set of comprehensive written evidence to the Heyworth Committee.<sup>11</sup> The Heyworth Committee had been seen as a long overdue step in finalising the establishment of the Social Sciences Research Council

1 Timeline showing key events and publications related to the invention of the built environment. The column in grey shows ones that centred in the current studies. The column to the left of the timeline shows other related architectural-environmental debates, in particular pedagogical changes.



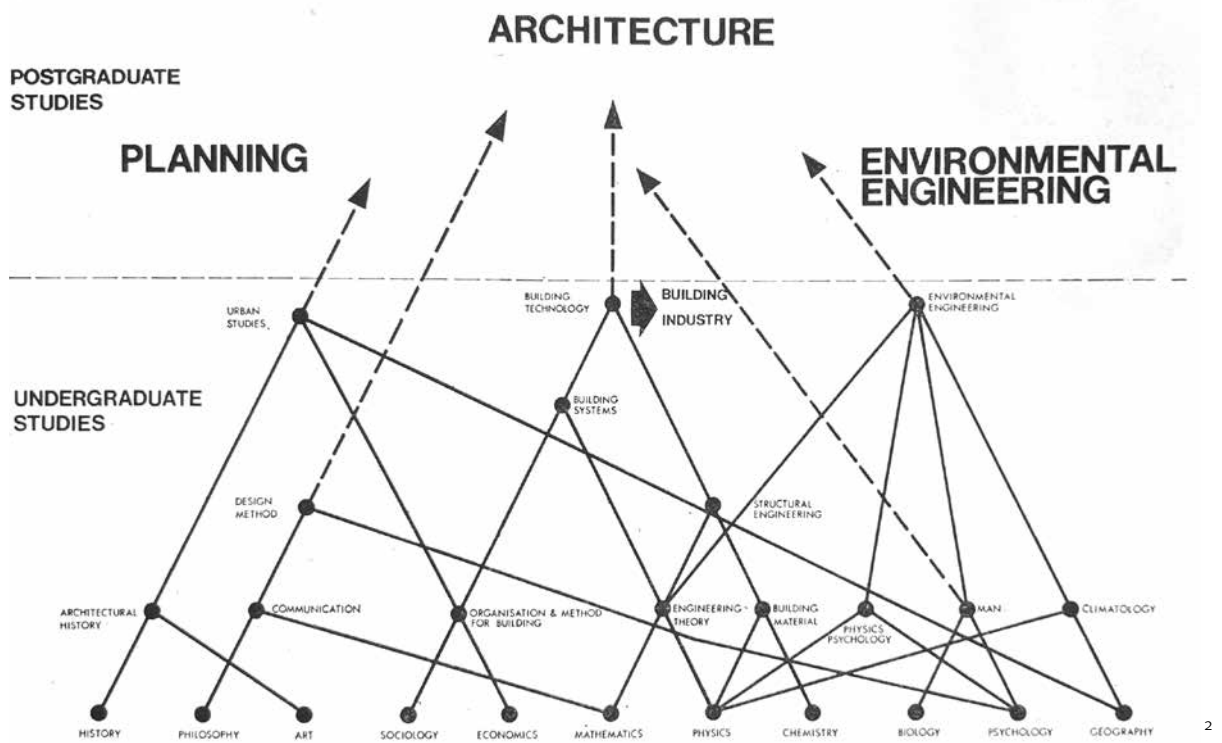
(SSRC).<sup>12</sup> The RIBA, through the Heyworth Committee, suggested that the government should establish a Research Council for the Built Environment to foster cross-disciplinary research into problems in architecture, planning, and construction in the UK. The RIBA envisaged that the proposed Research Council could be modelled after the UK Agricultural Research Council and the UK Medical Research Council, two long-established institutions that devised comprehensive and longer-term methods, strategies, and standards for their respective sectors. The proposal for a Research Council was published in the March 1964 issue of the *RIBA J*, entitled 'Research into Problems of Planning and Construction: RIBA Statement'.<sup>13</sup> This RIBA Statement elaborated on the definition of the 'built environment', noting the probable unfamiliarity of the term. It explained that the 'built environment' included issues that ranged from the 'regional level, right down to those involved in satisfying user needs in individual buildings and even rooms'.<sup>14</sup> It also highlighted the changing nature of the 'built environment' presented by 'the effect of technological change on the established work patterns in design and construction'.<sup>15</sup> The intention behind consolidating these issues under the same aegis was stated explicitly to be that of elevating architecture, planning, and construction as 'a sector of national concern'.<sup>16</sup> In this effort, the RIBA Statement stated, research into the 'built environment' would have to draw on knowledge from the physical, natural, social, and economic sciences. The aims behind the invention of the 'built environment' term stated by the RIBA echoed the architectural pedagogical reforms proposed in the previous decade in both the UK and the US. The incorporation of natural and social science into architectural pedagogy, for example, could be found in the Environmental Studies programmes established at Harvard University and the University of California, Berkeley.<sup>17</sup> The promotion of cross-disciplinary research and education had also been stated in the RIBA's high-profile conference on architectural education at Oxford in 1958.<sup>18</sup>

The similarities with existing efforts to reform architectural education and research provided a partial explanation for why Llewelyn-Davies was an early figure in the articulation of 'built environment'. His appointment in 1960 as the head of the Bartlett reflected part of the cross-disciplinary and research-oriented pedagogical approach promoted in the 1958 Oxford Conference.<sup>19</sup> His research and practice in hospital design with the Nuffield Foundation, and his connection with architects and academics in the US, also rendered him a good candidate to explain the relevance of scientific and environmental studies in architecture and planning.<sup>20</sup> Llewelyn-Davies was made a Labour Party life peer in January 1964, which meant that he was able to put forward the RIBA's call for a Research Council for the Built Environment in the House of Lords. A few weeks after the RIBA Statement was published, Llewelyn-Davies repeated the proposal in a Lords Chamber meeting entitled 'Scientific Policy and Manpower'.<sup>21</sup> As the title suggested, the meeting considered the importance of education and research in science and technology in promoting Britain's productivity and international competitiveness. Llewelyn-Davies cited a contemporaneous study by the National Economic Development Council (NEDC), which called for radical improvement in the productivity of the building industry to facilitate the national economic development plan.<sup>22</sup> Combining issues

in regional planning, town planning, transport, and construction in the frame of the 'built environment', Llewelyn-Davies argued, could better align these activities with the national plan. In short, in his speech in the Lords Chambers, Llewelyn-Davies presented research into the 'built environment' as a response to the then Labour Party leader Harold Wilson's 'Labour's Plan for Science', also known as the 'White Heat', speech delivered in October 1963.<sup>23</sup> In it, Wilson set up a fourfold programme, calling for producing, keeping, and mobilising more scientific talents in the country, and to reorganise industries through applying scientific research.<sup>24</sup> In other words, the articulation of the 'built environment' was partially influenced by the political climate of the time, and Llewelyn-Davies' political advocacy.<sup>25</sup> There was a technocratic attitude embedded in the early usage of the term. One could glean, from the early usage of the term, a belief that scientific and technological research could provide solutions to social issues such as poverty and uneven income distributions. It is also worth noting that the confidence in scientific and technological advancement was not limited to the Labour Party elites. Historians have observed that the early 1960s was a period when there was notable support for and outcome from British scientific research.<sup>26</sup> The 'built environment', therefore, could also be understood as an invention for the architectural and planning discipline to benefit from the resources and attention dedicated to scientific research at the time.<sup>27</sup>

Despite the efforts made by the RIBA and Llewelyn-Davies, the Heyworth Committee rejected the proposal for a Research Council for the Built Environment. The Heyworth Committee recognised the need in strengthening research into the urban environment but thought much of the research could be carried out by existing institutions such as the Building Research Station.<sup>28</sup> Nonetheless, from the findings of the Heyworth Committee, the government allocated a fund of £50,000 to set up an independent research institution that would analyse, critique, and help streamline the existing research into urban and planning issues. The Ministry of Housing and Local Government (MHLG) also solicited additional funding from the Ford Foundation. In April 1967, the Centre of Environment Studies (CES) was founded.<sup>29</sup> Llewelyn-Davies was appointed the first chairman of the CES, probably through his previous involvement in the MHLG's Planning Research Advisory Group in 1964.<sup>30</sup>

In the existing studies of British town planning, Llewelyn-Davies' involvement at the CES was at times mistaken as his more well-known activities at the time he was at the Bartlett.<sup>31</sup> Following his appointment as Professor of Planning, alongside his Professorship in Architecture, the Bartlett adapted its name to the School of Environment Studies in 1969.<sup>32</sup> In addition to the similarity in names and Llewelyn-Davies' leadership, the confusion may also be attributed to the fact that several other figures were active in both institutions, including architect Peter Cowan and economist David Donnison who later became the second director of CES. The first director of the CES, Henry Chilver, was also the Professor of Civil Engineering at UCL at the time. The pursuit of interdisciplinary research was at the heart of both institutions. For example, at the Bartlett, Llewelyn-Davies restructured the architectural curriculum based on 'traditional subjects' such as geography, psychology, biology, and philosophy to equip students with



2 Diagram showing relationship of subjects in the form of a semi-lattice. Richard Llewelyn-Davies, *The Future of Environmental Studies*.

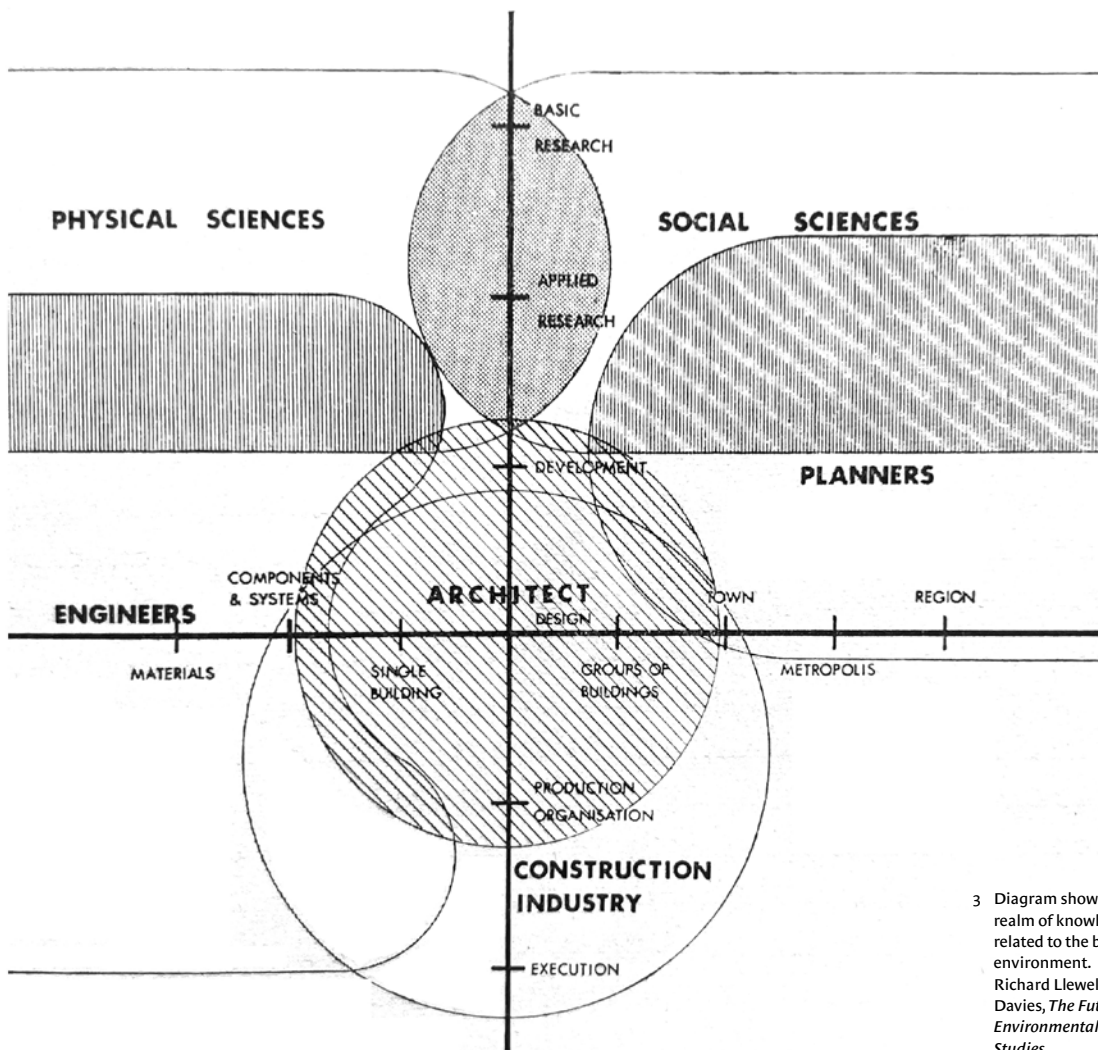
broad intellectual instruments [2].<sup>33</sup> For Llewelyn-Davies, this approach would enable architects, engineers, and planners to share similar beliefs, intellectual apparatus, and principles thus unifying them under the banner of 'environmental studies'. This broadening of architectural education would enable the discipline to move away from rule-based training and to use design as an exercise in solving open-ended problems.<sup>34</sup>

The union of scientific research and architectural culture, however, was not easy. A fissure appeared just as Llewelyn-Davies' vision was being articulated. He invited designer and engineer R. G. Hopkinson to become the first Chair of the School of Environmental Design and Engineering. In his inaugural lecture Hopkinson, an expert in architectural lighting, spoke on 'The Evaluation of the Built Environment'.<sup>35</sup> Although Hopkinson's speech broadly corresponded to Llewelyn-Davies' call for treating design as an open-ended exercise, Hopkinson hardly deviated from his scientific expertise.<sup>36</sup> He dedicated six of the seventeen pages of his talk to the efficacy, or the lack thereof, of Glare Factor in lighting design. Only at the beginning and the end of the lecture did he briefly mention the importance of expanding such mechanisms to the urban scale. Hopkinson's speech, despite his best efforts, indicated something of the difficulty of balancing scientific expertise with cross-disciplinary discussions. Llewelyn-Davies' reformulation of architectural education as environmental studies, even for his supporters, is now regarded as an ambitious, well-intended but perhaps ill-fated effort in architectural pedagogy.<sup>37</sup> To borrow Peter Hall's words in his recollection of Llewelyn-Davies' time at the Bartlett, it was perhaps a 'lost vision' and a 'tall order' because of the 'strong contrary force' to his reforms.<sup>38</sup>

At stake was that Llewelyn-Davies' 'environmental sciences' framework did not only undermine the importance of design and artistic expressions, but also jettisoned other potential purposes of architecture. In his emphasis on research as the highest aspiration for

architectural students, he rarely spoke about what broader cultural or social benefits the approach would lead to.<sup>39</sup> The displacement of other purposes of architecture by the pursuits in research, was apparent in Llewelyn-Davies' 1967 lecture 'The Future of Environmental Studies', which was later republished as 'Educating the Professionals of the Built Environment' in *Architectural Record* in the US in 1969.<sup>40</sup> In both documents, Llewelyn-Davies used a diagram to present the realm of knowledge of the 'built environment'. He presented a horizontal axis showing the relative scale of the issues, and a vertical axis that illustrated the sequence of events in planning and construction [3]. He argued that the curriculum in planning, architecture, engineering, and other relevant courses should strive for as much mutual overlap as possible. What was conspicuously missing from the diagram and Llewelyn-Davies' lecture, however, was the purpose of these changes. In short, for him the integration and broadening of knowledge, through the notion of the 'environment', became both the means and the ends of architectural research and education. How to incorporate, or discard, other principles for architecture such as strength, utility, and aesthetics in the new scientific paradigm remained a moot point.

At the time, Llewelyn-Davies was not the only prominent architect-planner who was employing the term 'built environment'. The presidents of the RIBA of the period, William Holford (1960–2) and Robert Matthew (1962–4) had been involved in the dissemination of the term.<sup>41</sup> Broadly speaking, Holford and Matthew used the term to promote interdisciplinary collaboration and research. However, there were also differences in their usage and



3 Diagram showing realm of knowledge related to the built environment. Richard Llewelyn-Davies, *The Future of Environmental Studies*.

interpretation of the built environment. In their respective ways, Holford and Matthew drew on bio-social thinking that had been influential in British town planning. For Holford, the inspiration came from his involvement at the Political and Economic Planning (PEP) think tank where he was influenced by the ecosystem metaphors articulated by conservationist Max Nicholson.<sup>42</sup> Matthew, meanwhile, drew on Patrick Geddes' works which also traversed social research, ecology, and town planning.<sup>43</sup> It is also worth noting that research conducted by the Centre for Land-use and Built-form Studies at Cambridge University, overlapped with the ideas put forward in the articulation of the 'built environment'.<sup>44</sup> This shows that competing interpretations of the 'built environment' had already been formed within a relatively close-knitted professional circle just as the term was being invented.

**Centre for Environment Studies**

In early 1965, just as the Heyworth Committee was concluding their findings, MHLG started the planning for an independent research institute for the 'built environment'. One of the first steps they took was holding a conference in Churchill College, Cambridge, in August 1965, in which planners and academics from the US, various European countries, and Japan supported the idea of establishing a centre for urban and planning research in Britain.<sup>45</sup> The support from the international participants

also convinced the Ford Foundation to commit a grant of \$750,000, for five years, to support the activities of the CES, in addition to the funding provided by the British government.<sup>46</sup> In the Churchill College Conference, they articulated the purpose of the CES as:

1. Be a centre and meeting place for people and ideas (both home and overseas).
2. Be an important, but not the sole, channel through which available funds can be allocated to research departments in universities and institutes.
3. To be a base for overseas researchers
4. Provide certain services, such as a library, a research register, and perhaps data distribution. The Centre would not carry out research itself.<sup>47</sup>

In late 1965, MHLG announced the establishment of the CES, and as previously mentioned Llewelyn-Davies was appointed as the Chairman of the governing board. They then looked for suitable candidates for the director position, for a person who would manage the day-to-day activities at the CES. Several figures outside of the architectural and planning profession were proposed, including sociologist Michael Young and geographer Peter Hall.<sup>48</sup> The position was eventually given to Henry Chilver who was then replaced by David Donnison less than two years later.<sup>49</sup> Another key issue in the establishment of the CES was its location. In the view of MHLG, setting up the CES outside of London might aid efforts in revitalising regional planning

at the time.<sup>50</sup> However, the idea was eventually turned down to facilitate researchers visiting from overseas, and governing board meetings.<sup>51</sup> Through the connection of the board members – probably William Holford – the CES rented office space at Cambridge Terrace, by Regent's Park in London.<sup>52</sup>

When the CES opened in 1967, the statement that it 'would not carry out research itself' found in the MHLG announcement was already drawn into question. In the first year, the CES conducted activities that could be described as research into research: including studies on the organisation of urban and regional research in the European countries and Britain, respectively.<sup>53</sup> These two studies, authored by Cynthia Cockburn, largely reflected Llewelyn-Davies' House of Lords speech on the 'built environment', focusing on the importance of organising human-power and resources in research.<sup>54</sup> Meanwhile, the CES also published a series of working papers, mostly in the format of literature review, that discussed emerging topics, methods, and application of planning research.<sup>55</sup> As these studies expanded, it became unclear whether the CES was only gathering information about existing research or they were conducting original research. Because the CES would not directly inform policymakers or industries, it was not always clear who was the audience of their research.<sup>56</sup> By late 1967, the CES decided that they would have to conduct in-house research in order to effectively evaluate, support, and disseminate research.

As the CES's research expanded, efforts were made to develop a more concise framework for the Centre. Firstly, it set up a study group on developing patterns of urbanisation.<sup>57</sup> Led by Peter Cowan, the group explored problems ranging from resources and economy, transportation, race, and human rights as well as leisure and recreation. Some members of the group were well-known figures in twentieth-century British architecture, including Cedric Price, Peter Hall, and Peter Wilmot.<sup>58</sup> Some were influential in other fields, such as Nicholas Deakin who was Head of the Central Policy Unit at the Greater London Council at the time and an expert in racial justice issues in cities. The main output of the study group was a series of academic papers including in a special issue of *Urban Studies* in 1969.<sup>59</sup> Meanwhile, the in-house research team at the CES were producing notable academic research. The team was led by Alan Wilson, who was an early proponent of urban modelling in Britain. The field of urban modelling had been growing in the United States since the 1950s. Early examples of large-scale urban modelling works included incorporating supply and demand theory to determine the location of industries and housing.<sup>60</sup> The interests and needs for transport planning also garnered more attention towards urban modelling. At the CES, Wilson also explored related topics such as forecasting and location theory.<sup>61</sup> At the time, Wilson developed his entropy modelling which has been regarded as an important breakthrough in urban modelling by illustrating the dispersed nature of spatial interaction.<sup>62</sup> However, the adaptation of urban modelling into policymaking and industry decision-making was not easy. The urban modelling research produced at the CES, at the time, was well disseminated in academia, but had a limited direct impact on British town planning.<sup>63</sup> The main reason behind the applicability gap in urban modelling research was the theoretical nature of the research produced. There was no sufficient statistical data for

creating the models; and even when data was available the computational capacity at the time could not always support the creation and adaptation of large-scale models.<sup>64</sup>

The CES activities in its first years reflected the complexity of planning and developmental issues in Britain at the time. There was a widening of the methods in planning that departed from the formal design approach. At the CES, the cross-disciplinary team supported investigations into complex issues such as urban obsolescence and growth. Although most of the international exchanges were with scholars from the United States and Canada, there were also communications with individuals and institutions in various European countries including some parts of the Eastern bloc. In short, the publications and seminar activities at the CES offered a glimpse into the diversity of architectural and planning research in Britain and beyond at the time. It somewhat fulfilled the Ford Foundation's vision for it to be a place for international exchange and a 'clearing house' for research.<sup>65</sup> However, the CES's activities in its first years were not deemed satisfactory. Chilver, was asked to step down as the Centre's director in 1969 and was replaced by economist David Donnison, who was an expert in housing and social administration.<sup>66</sup> The change in leadership may be seen as an attempt to steer the CES's activities back to the initial proposal made for the Heyworth Committee – to better coordinate and apply social sciences research in architecture and town planning. Donnison had a vested interest in how social service and local administration could be employed more efficiently to mediate urban issues.<sup>67</sup> In this regard, Donnison's perspective was somewhat different from the conventional approach in town planning, which envisaged the formation of community through specific urban or spatial patterns. Instead, Donnison believed that community, in the 1960s and 1970s Britain, could be created through shared desire and interests thus to engender changes in the physical environment.<sup>68</sup> At the CES, Donnison continued his study into the spatial implication of social service provisions such as schools and health services. Today, one of Donnison's most well-known contributions from the period was his advisory role in the Milton Keynes plan, which reflected his thinking about networks of atomised small local residents' groups.<sup>69</sup> His effort in bringing together economic, social administration, political, and spatial interventions also added to the complexity of the Milton Keynes plan. In addition to Llewelyn-Davies and Donnison, several other figures associated with the CES had contributed to the Milton Keynes plan, including American urban planner Melvin Webber, who was a visiting fellow at the CES in 1967–8.<sup>70</sup>

In current scholarships, the CES is mostly known as a centre for Anglo-American exchanges, and a research centre contributed to the planning of Milton Keynes.<sup>71</sup> What is less discussed is that the activities at the CES reflected the paradigms shifts in planning research, breaking away from the emphasis on physical conditions such as density or height control, or methods in producing town plans.<sup>72</sup> Despite their different approaches, the research of Wilson, Donnison and others at the CES dedicated significant energy to the connection between individual choices, urban patterns, and the larger regional economic and political structure. Interestingly, some early employees at the CES reacted against the inadequacy of planning research, including Doreen Massey, who later

became a leading voice in the study of the spatial-economic implication of class, gender, and other forms of social division.<sup>73</sup> Her critique on social and spatial structure, through Marxist and feminist frameworks, was at once influenced by and opposed to her early works on location theory at the CES.<sup>74</sup> Cynthia Cockburn, who carried out research into research conducted at the CES, also became an influential scholar on local spatial governance.<sup>75</sup> The research conducted at and sponsored by the CES had cast a long shadow on British human geography, cultural studies, and other social sciences subjects.

### Whose built environment?

Despite the diverse and rigorous research activities at the CES, they had limited impact on the debates about the 'built environment'. Today, few people will associate 'built environment' research with location theory nor large-scale urban modelling. Moreover, the CES's research outcomes hardly addressed the original goals behind the initial articulation of the term – to mobilise architectural and planning research to foster national economic and industrial growth. However, one can also argue that the matter was beyond the control of researchers at the CES. The national interest in economic planning and scientific research was a mixed blessing: issues such as regional planning and housing were allocated to the NEDC and Department of Economic Affairs.<sup>76</sup> MHLG, local governments, and the town planners also noted their limited influences in matters related to regional planning and development.<sup>77</sup> By elevating built environment issues as a matter of national concern, the architect-planners and researchers were inadvertently becoming marginalised in the debates. Meanwhile, as mentioned in the start of the article, there were many competing architectural-environmental discourses in the early 1960s. In addition to the aforementioned Team 10, another notable movement was Ekistics led by Greek architect C. A. Doxiadis.<sup>78</sup> In the archival documents related to the articulation of the 'built environment', there were also comments that Ekistics' definition of 'human settlement' was close in meaning to what the British architect-planners had in mind.<sup>79</sup> However, due to the supposed 'primitive' and 'colonial' connotation of the word 'settlement' the Ekistics notion was not used widely among British architect-planners.<sup>80</sup> It is also worth mentioning that Ekistics remained an important platform for Llewelyn-Davies, Matthew, and Holford in disseminating their thoughts about the 'built environment'.<sup>81</sup> For example, in 1964, Llewelyn-Davies and Matthew co-authored articles on education where they also mentioned research into the 'built environment'.<sup>82</sup> In the exchanges with Ekistics, the emphasis on cross-disciplinary scientific research and education remained, but the discussions on the 'built environment' had

largely departed from the concerns in national economic and industrial planning.<sup>83</sup>

By the early 1970s, it would be already difficult to summarise the many competing interpretations, usage, and purpose of the term 'built environment'. The aforementioned works by Hall, Massey, and others associated with the field of human geography, had posed significant questions about the production and control of the 'built environment'. The term was also used in championing architectural preservation and community-led urban renewal efforts.<sup>84</sup> Later studies, such as Amos Rapoport's works also brought issues in psychology and communication into the discussion on the 'built environment'.<sup>85</sup> At the same time, the effects of de-industrialisation and depopulation of urban centres in the UK and the US had brought forth other acute challenges. By the 1970s, the technocratic and techno-optimistic outlook that was once projected onto the term had largely dissipated. The CES was closed down in the late 1970s as part of the government's budget cuts.<sup>86</sup> Other activities associated with the initial coinage of the term remain relevant today: the Bartlett remains a leading institution in architectural education and Milton Keynes is seen as an impressive experiment in new town developments. However, it was unclear whether the conceptualisation of the 'built environment' played a significant role in these subsequent developments. Meanwhile, some of the issues found in the discussions in the 1960s, such as uneven regional development and productivity, remained critical problems in Britain today.

The initial articulation of the term 'built environment' had many problems. The term was at once too broad, but also too restrictive since it was largely employed to reinforce the existing structure and institutions. The murkiness of the term could also be attributed to other ingrained issues in architectural and planning research. This retrieval of the origin of the 'built environment' focuses on a fleeting moment in twentieth-century Britain when architectural and scientific research was considered part and parcel of the effort to implement national planning in the UK. The invention of the 'built environment' manifested the confidence that architectural, town planning, and construction activities could align with economic planning. Embedded in the initial discussion on the 'built environment' was an invitation to rethink what architecture and cities could be used for. The invention of the 'built environment' signposted a high watermark for the technocratic approach in twentieth-century British architecture. Ironically, the challenge to the institutional and professional control that undergirded the invention of the 'built environment', was also what added meaning and complexity to the term.

### Notes

1. Examples include the works of Lewis Mumford and Kevin Lynch. In 1950s America. The term 'environmental studies' was also used to reform architectural education at Harvard University and the University of California, Berkeley.

Abigail Sachs, *Environmental Design: Architecture, Politics, and Science in Postwar America* (Charlottesville, VA: University of Virginia Press, 2018).

Terms of similar meanings have been widely used and studied in other languages, including the German word 'Umwelt'.

2. 'Rationalism at the Bartlett', *The Architects' Journal*, 132:3424 (1960), 801.

3. Richard Llewelyn-Davies, 'The Future of Research', *RIBA Journal*, 71:4 (1964), 149–56.

4. Ibid.

5. RIBA, 'Research into Problems of Planning and Construction: RIBA

- Statement', *RIBA Journal*, 71:3 (1964), 112.
6. Report of the Committee on Social Studies (Chairman Lord Heyworth, Cmnd 2660, HMSO, London, 1965).
  7. Robert Jeffery, 'Cumbernauld Centre/ The Projection of a New Urban Language', *Architectural Design*, 33:5 (1963), 209.
  8. 'Cumbernauld New Town Central Area', *Architectural Design*, 33:5 (1963), 209–25; 'Proposals for Cumbernauld New Town Centre', *The Architects' Journal*, 136:23 (1962), 1279–88.
  9. Jeffery, 'Cumbernauld Centre/The Projection of a New Urban Language', 209.
  10. Ibid.; Alison Smithson ed., 'Special Issue: Team 10 Primer', *Architectural Design*, 32:12 (1962), 559–602.
  11. The National Archives, ED144/26, 'Committee on Social Studies: Evidence from the Royal Institute of British Architects', 'The Committee on Social Studies: Written Evidences – Housing and Town Planning I.
  12. Desmond King, 'Creating a Funding Regime for Social Research in Britain: The Heyworth Committee on Social Studies and the Founding of the Social Science Research Council', *Minerva*, 35:1 (1997), 1–26.
  13. Similarly, in their reporting of the RIBA statement, *The Architects' Journal* used quotation marks around the term. Anon., 'NEWS: RIBA – Call for Research Council for "Built Environment"', *The Architects' Journal*, 139:9 (1964), 454.
  14. RIBA, 'Research into Problems of Planning and Construction: RIBA Statement', p. 112.
  15. Ibid
  16. Ibid.
  17. Sachs, *Environmental Design*; Peder Anker, 'Computing Environmental Design', in *The Culture of Nature in the History of Design*, ed. by Kjetil Fallan (London and New York: Routledge, 2019), pp. 44–57; Timothy Stott, 'Ludic Pedagogies at the College of Environmental Design, UC Berkeley, 1966 to 1972', in *The Culture of Nature in the History of Design*, ed. by Kjetil Fallan (London and New York: Routledge, 2018).
  18. Rowena Hay, Neal Shasore, Flora Samuel, 'Research at the RIBA: an Institutional History 1958–71', *Architectural Research Quarterly*, 21:4 (2017), 328–37.
  19. Martin Symes, 'The Value of Architecture as a University', *Journal of Architectural and Planning Research*, 6:3 (1989), 251–8.
  20. Mark Clapson, *The Wider Context in The Plan for Milton Keynes* (London and New York: Routledge, 2013), p. 4.
  21. Richard Llewelyn-Davies, HL Deb, 11 March 1964, Scientific Policy and Manpower, vol 256 (1964), cols. 465–468.
  22. NEDO, *Growth of the UK Economy 1961–1966* (London: National Economic Development Office (NEDO), 1963).
  23. Labour Party, 'Labour's Plan for Science: Reprint of Speech by the RT. Hon. Harold Wilson, MP, Leader of the Labour Party, at the Annual Conference, Scarborough, Tuesday, October 1, 1963' (London: Victoria House, 1963).
  24. Labour Party, 'Labour's Plan for Science', p. 3.
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70. *Ibid.*, pp. 6–9, 23; CES, *Third Annual Report*, p. 29.
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75. Cynthia Cockburn, *Local State: Management of Cities and People* (London: Pluto Press, 1977).
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78. Ekistics, also known as the science of human settlement, started in the late 1950s to promote a scientific and cross-disciplinary method in studying both the human (the content) and the physical settlement (the container). The articulation of the built environment, in 1963, also coincided with the start of the Delos Symposium that invited scientists, sociologists, and architect-planners to debate over issues about human settlement. The first Delos symposium held in 1963 was also positioned as a following up to the influential 1933 CIAM meeting in Athens. C. A. Doxiadis, 'Ekistics, the Science of Human Settlements', *Ekistics*, 33:197 (1972), 237–47; Robert Matthew, Edward Mason, Charles H. Page and others, 'Meetings of the Delos Symposium', *Ekistics*, 16:95 (1963), 243–54.
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#### Competing interests

The author declares none.

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