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BETWEEN THE CAMPUS AND THE QUAD:

LANDSCAPE DESIGN AND IDENTITY IN THE NEW BRITISH UNIVERSITIES OF THE 1960S

Table of contents

Abreviations

AR BRO	Michael Brown Archive, Museum of English Rural Life, Reading
AR COL	Brenda Colvin Archive, Museum of English Rural Life, Reading
AR CRO	Sylvia Crowe Archive, Museum of English Rural Life, Reading
AR DL	Denys Lasdun Archive, Royal Institute of British Architects, London
AR BS	Basil Spence Archive, Historic Environment Scotland, Edinburgh
HES	Historic Environment Scotland, Edinburgh
MERL	Museum of English Rural Life, Reading
NFF	Norman Foster Foundation, Madrid
RIBA	Royal Institute of British Architects, London
UEASC	University of East Anglia Special Collections, University of East Anglia Library, Norwich
UESC	University of Essex Special Collections, University of Essex Library, Colchester
USSC	University of Sussex Special Collections, The Keep, Falmer

Front page

Composition with fragments of the following photographs:

Top: UEA Society, View of the University of East Anglia from the Broad, n. d.

Centre: Anon., View of one of the University of Essex squares, n. d.

Bottom: M. Hrachik, View of the University of Sussex central tree belt, n. d.

Acknowledgements

This dissertation would not have been possible without the selfless help of many individuals. Hal Moggridge and Rosamunde Codling were kind enough to share with me their experience as landscape designers at the University of East Anglia, where Tom Williamson generously provided me with unpublished reports on the Earlham Estate and other literature on the landscape of the Broads. Annabel Downs and Elain Harwood patiently answered my questions at the earlier stages of research. Further, Bridget Gillies, of the University of East Anglia Archives, Nigel Cochrane, of the University of Essex Library, as well as the staff at The Keep, Historical Environment of Scotland, RIBA and the Museum of English Rural Life have been most helpful with my enquiries.

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I. INTRODUCTION

The welfare state that emerged in Britain after World War II brought - along with national insurance, public health and social housing policies - a new approach to higher education that was to open up the élitist tradition represented by Oxford and Cambridge. During the 1950s and 1960s, a number of colleges were promoted to university status while other universities were founded anew, following the guidelines established by the University Grants Committee, even before the Robbins report of 1963 pleaded for the expansion of universities and their availability to all those qualified by merit. These new institutions had in their modern architecture much of its corporate identity and were soon branded as the plateglass universities. Instead of the red brick structures of Victorian universities or the stonework of the colleges at Oxford and Cambridge, steel, concrete and large glass plates set off the venues at the new universities, leaving behind (almost) all references to the past. While the more traditional institutions usually enjoyed urban settings, the new universities opted for suburban sites where the landscape could be designed with no previous constraints to foster a more horizontal, democratic relationship among faculty and students.

As a common feature, the University Grants Committee established that they were to be located in medium-sized towns, away from the major industrial centres. They should also have both a close link to the countryside and some features of national historical association, such as cathedrals. It was further stipulated that the site should be between one and a half and six miles away from the city centre and have an area of at least 200 acres.[1] From 1960 to 1965, the universities of East Anglia, Essex, Kent, Lancaster, Sussex, Warwick and York were inaugurated, all set within a distance of 35 to 250 miles around London. They belong to the large-scale projects – such as power stations, reservoirs, highways and new towns - that increasingly emerged in the early postwar decades and demanded a closer collaboration between landscape architects, engineers and landscape designers. Their coeval construction and the site and characteristics established by the University Grants Committee make of these new universities a

[1] Stefan Muthesius, *The Postwar University. Utopianist Campus and College*, (New Haven and London, Yale University Press, 2000), p. 97.

coherent yet varied set of case studies that reflects the welfare ideals of the postwar period - such as totality of design, sense of community and social equality, as well as national traditions and contemporary trends of landscape and garden design.

Historiography

The term plateglass universities was coined by Michael Beloff in his book of 1968,[2] where he portrayed the new universities that were created in the mid-1960s to expand both the scope and reach of the élitist system of British higher education. Though one of the last chapters is dedicated to the image of these new universities, little is said there on their landscape design. Stefan Muthesius' publication, *The Postwar University. Utopianist Campus and College*, dedicates a whole chapter to British universities after World War II,[3] including specific subheadings on the seven listed before. Though the importance of architecture in the whole concept is stressed, not so much is said about the different campus plans. Jonathan Coulson's *University Planning and Architecture: the search for perfection* examines several campuses but only the University of East Anglia is included among them. It is however a useful source to put the British examples in an international perspective.

Richard Dober's *Campus Landscapes: Functions, Forms, Features*[4] is a guide to campus planning that provides resources for designers, resorting in part to existing examples. It also features a taxonomy that might be of help when analyzing British universities. Much in the same line, Michael Herz has recently edited *Campus Landscape, Planning and Design*,[5] which features more modern designs. An interesting text dealing specifically with campus landscapes is the article 'The landscape of new universities in Great Britain'[6] reporting on the symposium held in January 1967 which was published that same year. However, of the seven plateglass universities, only the University of Essex is featured.

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[2] Michael Beloff, *The Plateglass Universities*, (Madison, Fairleigh Dickinson University Press, 1968).
[3] Muthesius, *The Postwar University,* pp. 59-186.
[4] Richard P. Dober, *Campus Landscapes: Functions, Forms, Features*, (New York, Willey, 2000).
[5] Michael Herz (ed.), *Campus Landscape, Planning and Design*, (Hong Kong, Design Media Publishers, 2014).
[6] Anon., 'The landscape of new universities in Great Britain: extracts from a symposium held in Jan. 1967', *Institute of Landscape Architects Journal*, May 1967, pp. 6-11.

Several manuals and texts issued by the different universities provide facts and historic photographs of their campuses that are not always included in the professional publications.[7] A number of specific articles have been written on each of the universities, though not all of them have been featured alike. The University of East Anglia, by Denys Lasdun, and, to a lesser extent, that of Sussex, by Basil Spence, have been the most widely published among them. However, the great majority of the publications mentioned are focused on the buildings and not on the landscapes that held these architectures together and provided a much-needed sense of place. This has limited the reception of these modernist landscapes and their protection: while some of their architecture has been included within the Historic England list, only the landscape of the University of York has been granted Grade II protection during the course of this research.[8]

Aim and Scope

This dissertation sheds new light on these neglected landscapes and the role their designers played and the references they used to insert such large-scale structures into their rural settings. Since an in-depth study of all seven universities is not possible within the time and word limit available, three examples, the Universities of Essex, East Anglia and Sussex, have been selected to portray the varied attitudes displayed toward sites with similar characteristics – mainly 18th century parks - but transformed in very different ways. The University of Essex (1964) displays the most urban approach, while the University of East Anglia (1963) has opted for a more landscaped setting. Finally, the University of Sussex (1961) is included as a synthesis between the urban quadrangle and the campus scheme. This dissertation explores the design process of these three university sites, identifying common themes, and also variations, in order to determine the extent to which they relate both to British traditions and foreign trends and whether they were able to develop an identity of their own through their landscape design.

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[7] See among others, Fred Gray, (ed.), *Making the Future*, *A history of the University of Sussex* (Falmer, University of East Anglia, 2011) and Michael Sanderson, *The History of the University of East Anglia* (London, Hambeldon and Loudon, 2002).

[8] University of York Campus West designed landscape, Grade II, listed 22 August 2018, <https://historicengland.org.uk/listing/the-list/list-entry/1456517> (accessed 28 October 2018).

In order to assess the role landscape design played in representing the new approach to higher education in Great Britain, this dissertation also explores the cultural frame in which these new universities emerged in the 1960s as well as the themes and variations that their designs display. These schemes have been put into a wider context by analyzing them within the *oeuvre* of their authors and by comparing them to other contemporary campus projects both in Britain and abroad.

Methodology

Along with site visits, primary sources have been drawn from the archives of the architects involved held at the RIBA (University of East Anglia) or at the Royal Commission on the Ancient and Historical Monuments of Scotland (RCAHMS), where the plans for the University of Sussex were consulted. Other relevant sources were found at each of the universities' archives. Further, the National Archives at Kew and the local Record Offices were consulted for official correspondence, contracts, accounting records, etc. Maps and aerial photography have been checked at the British Library and websites such as https://britainfromabove.org.uk or google maps: https://www.google.es/maps. For landscape-specific issues, research has been conducted at the Garden Museum and the Landscape Institute archive at the Museum of English Rural Life, were the work of Brenda Colvin, Michael Brown and Sylvia Crowe is kept.

II. A BRITISH CAMPUS: UNIVERSITY OF EAST ANGLIA

In her seminal book *Tomorrow's Landscape*, Sylvia Crowe identified large-scale and density as the main challenges that the modern landscape had to face.[9] Although they were not negative aspects *per se*, they had to be tackled in specific ways and they demanded a closer cooperation between architects and landscape designers. During the postwar period, large housing schemes, industrial areas, or the new infrastructure of transport granted landscape designers a more relevant role in the planning process. New towns, power stations or reservoirs became commissions where collaboration between architects and landscape designers was fostered by the corresponding authorities.[10] However, this was not the case of the new universities of the 1960s, where the main financing body, the University Grants Commission, focused mainly on the architecture, since time and money were scarce. Thus, though all of them were sited on existing landscape parks, the role of these natural settings was not always acknowledged to the same extent. It was the architects that demanded a landscape designer's advice as they developed their masterplans and often paid them out of their own fees, years before they were officially appointed.

The University of East Anglia is one of these cases. On the former grounds of the Earlham estate, the site to the southwest of Norwich centre comprised 356 acres (figure 1). It also included Earlham Hall, the house built by Robert Houghton in 1642 and home of the Gurney family, owners of the bank that eventually merged into Barclays Bank by the end of the 19th century.[11] The estate had been bought by the Norwich City Council In 1925, and 120 acres of it were soon after turned into a golf course that opened to the public in 1932.[12] Belts of coniferous trees were planted then to organize the grounds,[13] while fairways and greens were placed in parallel bands between the heronry and the river[14] (figure 2).

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[9] Sylvia Crowe, *Tomorrow's Landscape*, (London, The Architectural Press, 1956), pp. 11-15.
[10] The New Towns Committee consulted landscape designers from 1946 on, as did the Central Electricity Board a decade later. Geoffrey Collens and Wendy Powell eds, *Sylvia Crowe*, (Reigate, Garden Design Trust, 1999), pp. 47, 121.
[11] Denys Lasdun, letter to Vice-Chancellor Frank Thistlethwaite, 12 June 1963, listing consultants needed for the development plan. UEASC, UEA/EST/1 of 2 boxes.
[12] https://www.golfsmissinglinks.co.uk/index.php/england/central-east/norfolk/613-nor-earlham-park-golf-club-bluebell-road-norwich; (accessed 15 October 2018).
[13] Denys Lasdun, *Report on Landscape and Playing Fields*, November 1965, p. 5. UEASC, FT_C3_D1.
[14] Rik Hogget and Tom Williamson, *Forgotten Heritage: the Landscape History of the Norwich Suburbs*, unpublished report for the East Anglia Estates Department, 2006.

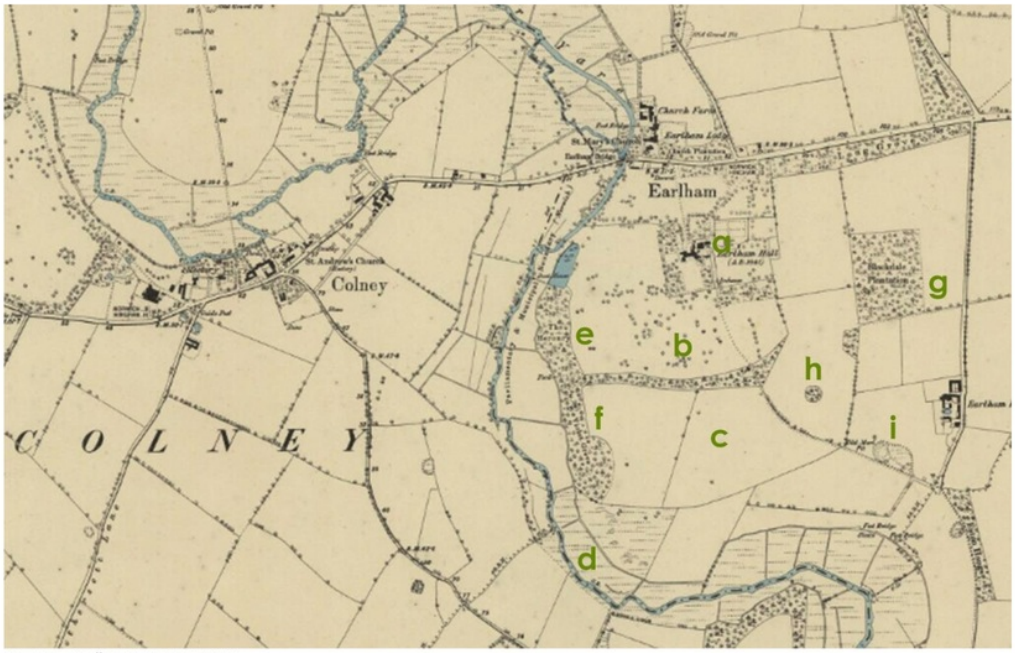

Figure 1: Earlham Estate in 1885.
a: Earlham Hall **b**: Earlham Park **c**: Earlham farmland **d**: River Yare **e:** Heronry **f:** Violet Grove **g:** Blackdale Plantation **h**: copse **i:** Marl Pit
Source: OS six-inch England and Wales, Norfolk LXIII.SW, surveyed 1880-1884, published 1885.

Figure 2: Earlham Golf Course from the Bluebell Road.
Source: https://www.golfsmissinglinks.co.uk/index.php/england/central-east/norfolk/613-nor-earlham-park-golf-club-bluebell-road-norwich (accessed October 2018).

Denys Lasdun's scheme: a green background

Though in these new universities, emphasis was placed upon the architecture, landscape was an important issue for Denys Lasdun (1914-2001) when he first approached the brief and it was him who demanded the intervention of a landscape consultant in 1963. He had been appointed architect of the future university in June 1961, to fulfill Vice-Chancellor Frank Thistlethwaite's vision of an urban university ideal with 'buildings linked by walkways, square and street(…), rather like an Italian Renaissance hill town'.[15] Lasdun started to explore the site by foot and even by helicopter,[16] resorting to his surveying experience as a wartime airfield builder.[17] He summarized his impressions on the landscape in a plan entitled 'UEA Physical Factors', a revealing document selecting the main features that were taken into account for the university's architecture (figure 3). Along with possible approach points, the plan illustrated the contour lines of the south-facing slope which would be eventually echoed by the undulating outline of the residential buildings. Further, it described the marshland along the River Yare and some of the existing tree groups were selectively depicted while others were significantly left out.

Of the previous plantings, he kept a belt of well-established beeches along Earlham Road and the Violet Grove and the Heronry along the western boundary. The Blackdale plantation remained on the plot's northeastern quadrant as well, while a line of willows separated the southern slope from the marshland. The east-west deciduous belt that once segregated Earlham Park from its farmland was to become the backbone of the architectural plan. Other features, such as the copse that had been drawn in maps since the 1820s or the perennials outlining the golf course fairways, were not deemed relevant. Regarding the views, two spots were highlighted: one to the southwest, overlooking the site from Colney Road, and another one at the eastern end of the Earlham Park tree belt, which was described as a 'nodal point with sharp fall and panoramic views'.[18] This was considered the site's entry.

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[15] Frank Thistlethwaite, *Origins. A Personal Reminiscence of the University of East Anglia's Foundation*, (Colchester, Palladian Press, 2000), p. 55.
[16] A view from his helicopter survey shows the existing perennial belts from the golf course. See 35 mm colour transparency, RIBA AR DL, DLCT587.
[17] Elain Harwood, *Space, Hope and Brutalism,* (New Haven, Yale University Press, 2015), p. 261.
[18] Denys Lasdun and Partners, 'UEA Physical Factors,' RIBA AR DL, PA2124/5 (8).

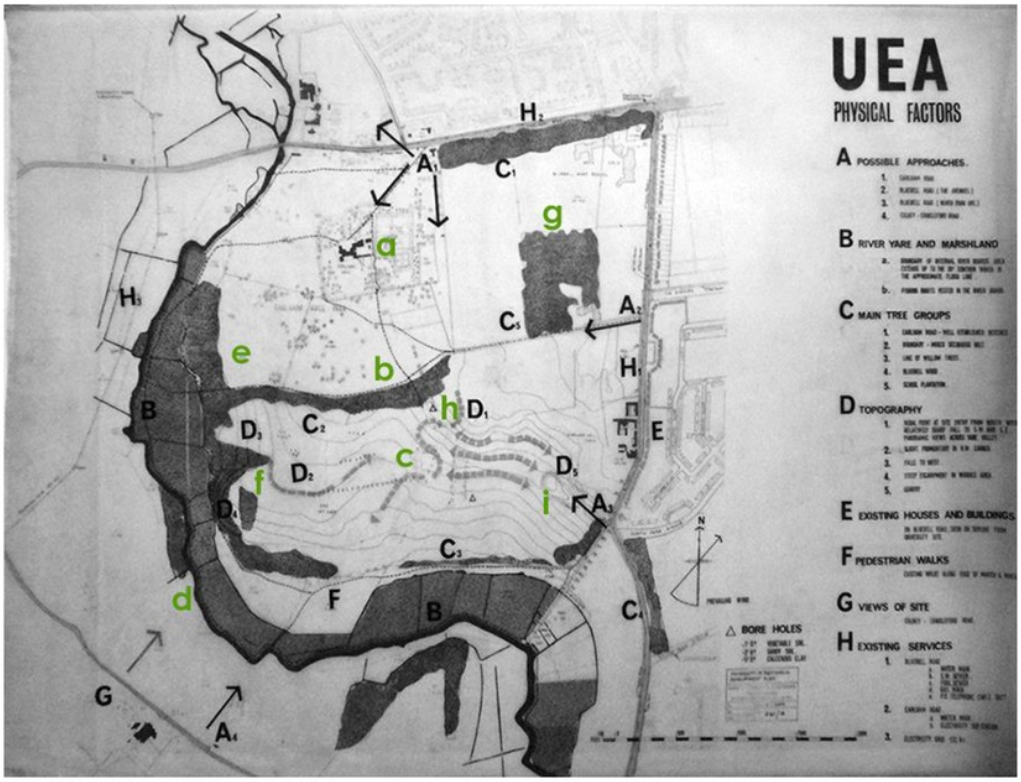

Figure 3: Denys Lasdun, UEA Site, 'Physical Factors', n. d.
a: Earlham Hall **b**: Earlham Park **c**: Earlham farmland **d**: River Yare **e:** Heronry **f:** Violet Grove **g:** Blackdale Plantation **h**: copse **i:** Marl Pit
Source: RIBA, AR DL, PA2124/5 (8).

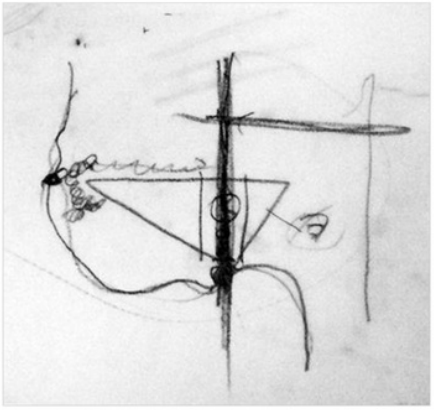

Figure 4: Denys Lasdun, UEA Conceptual Sketch, n. d.
Source: RIBA, AR DL, SK 541, 18 October 1962.

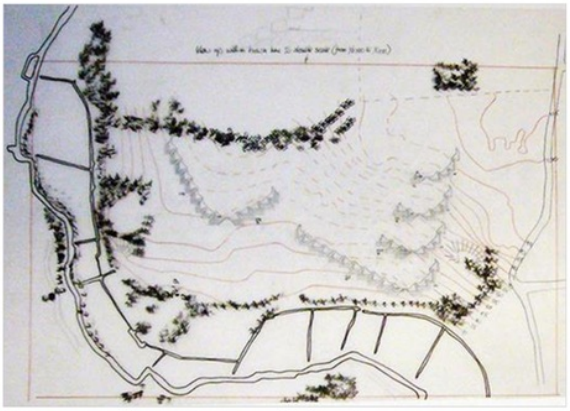

Figure 5: Denys Lasdun, UEA proposed buildings and existing trees, n. d.
Source: RIBA, AR DL.

An early conceptual sketch shows his interpretation of these features. Two perpendicular avenues, one running north-south from Earlham Road and another one running east-west from Bluebell Road form a reference system intersecting at the end of the belt dividing Earlham Park from its farmland (figure 4).

Slightly further south from this intersection, a triangle represents the area to be occupied by buildings, crossed by a broad band that links the entrance with the river at the vortex of the triangle. From this sketch, a building scheme evolved featuring a linear backbone of faculty buildings leaning against the Earlham Park tree belt and a series of stepped residential units – the so-called ziggurats - that echoed the undulating contours of the slope towards the river (figure 5). His idea was to provide a compact plan so as to preserve 'the south-facing slopes, the river and its marshland, the dominant tree belts and the fine views over agricultural land'.[19] Some of the golf course conifers were to be kept for a while to enclose spaces until they could be replaced by buildings. Additional trees were planted in order to screen off the new developments at the site's boundaries, while the valley's willows and poplars were kept to frame the riverside views.

As for the playing fields, these were allocated on the southern side of the river, enclosed by newly planted wind screens, which helped to integrate the hard outlines of tennis courts and parking areas into the overall landscape.[20] They were to be kept below the skyline, 'causing the least interruption to views to the more distant landscape.'[21] The most drastic change concerned the river, which would be diverted to meet the southernmost residence block in a small harbour (figure 6). In a way, the scheme recalled Cambridge University in its distribution of academic buildings on one side of the river and the playing fields on the other, portraying the '*mens sana in corpore sano*' ideal of classical education. The Vice-Chancellor – himself a former Cambridge don - bought two punts in order to introduce this traditional university sport at UEA, but both boats disappeared almost immediately and punting was soon replaced by canoeing. A similar fate awaited croquet at the Earlham Hall lawn. According to Thistlethwaite, the free spirit of the 1960s craved for a more democratic kind of institution and that included the way its open spaces were used.[22]

[19] Lasdun, Report on Landscape and Playing Fields, p. 1.
[20] Ibid., pp. 5-6.
[21] Ibid., p. 8.
[22] Thistlethwaite, *Origins*, p. 13.

Figure 6: Anon., University of East Anglia model photograph, n. d.
Source: UEASC, UEA/PHO/27.

Thus, Denys Lasdun's proposal interpreted the site's potential mainly in visual terms, like a green, static backdrop for his sculptural buildings and not as a living organism subject to evolution and change. He soon acknowledged the need to involve a landscape architect and eventually managed to gain Brenda Colvin's expertise for the task.

Brenda Colvin's proposal: a set of ecosystems

Brenda Colvin (1897–1981) was one of the country's leading landscape designers at that time and she had an extensive experience in the large-scale projects of the postwar period. She was involved in the masterplans of East Kilbride New Town in the 1950s and Aldershot Military Town in the 1960s[23] and collaborated in the landscaping of power stations[24] such as Drakelow (1962), Eggborough (1964) and Didcot (1968). Her work at the University of East Anglia can be framed within the scope of these territorial

[23] Trish Gibson, *Brenda Colvin, A Career in Landscape*, (London, Frances Lincoln, 2011), p. 132.
[24] Ibid., pp. 165-177.

interventions. Despite the fact that the new university sites of the 1960s were placed in the countryside, often on former landscape parks with well-established planting structures, landscape designers were often called in at a rather late stage. This was the case with Brenda Colvin at East Anglia, who was finally appointed landscape consultant in 1966. [25] Her interpretation of the site was presented in December 1967[26] as an interim landscape report that expanded on that of 1965, since the main decisions regarding the masterplan had already been taken and building had already started on the site (figure 7).

Figure 7: Brenda Colvin, UEA Landscape plan with harbour and Broad outline, n. d.
Source: MERL AR COL, DO 1/2/21.

[25] Letter of 9 March 1966 from Peter McKinley of Lasdun and Partners to Brenda Colvin, informing that she has been appointed Consulting Landscape Architect to the University of East Anglia after their recommendation. MERL AR COL, Folder A/4, 3 of 4 (1966-1972).
[26] *University of East Anglia Interim Report and Approximate Estimate of Cost,* by Brenda Colvin in association with Denys Lasdun & Partners and Davis, Belfield & Everest Quantity Surveyors, December 1967, MERL AR COL, A/4 4 of 4.

Figure 8: Brenda Colvin, Contouring around buildings and paths.
Source: Plan 511/R/5, 1:500, December 1967, MERL AR COL A/4 4 of 4.

Figure 9: Brenda Colvin, the River Walk and terrace.
Source: Plan 511/R/9, December 1967, MERL AR COL A/4 4 of 4.

Colvin identified two types of scenes: the building complex and the river landscape, fostering a sharp contrast among them (figures 8 and 9). The open slope toward the river was to be kept simple with occasional shrub groups, avoiding flowers or any kind of horticultural approach,[27] while the intricate spaces among buildings would feature a more elaborate design. Within these two main areas she further identified different spaces with specific needs: the space among buildings, the open parkland on the southern slope, the marshland and river walk, the recreation grounds on the other side of the Yare, the dell and ground to the east of the site, the approach roads and the experimental garden for the School of Biological Sciences. The spaces between buildings were to present an urban scene, with a high proportion of hard surfacing, climbing plants to integrate the concrete walls and groundcover plants on the banks (figures 10 and 11). New planting near buildings should promote the architectural character of this area, keeping the tree canopies well above eye level and not too dense. Only occasionally a cedar or other specimen trees could be included as a sculptural feature but the report warned that 'the suburban character, which too easily arises with the need for horticultural interest, should be resisted'.[28]

[27] Ibid., p. 1.
[28] Ibid., p. 3.

Figure 10: Ornamental planting along pathways and elevated walks.
Source: Detail of contacts sheet, Rosamunde Codling donation, UEASC, UEA/COD.

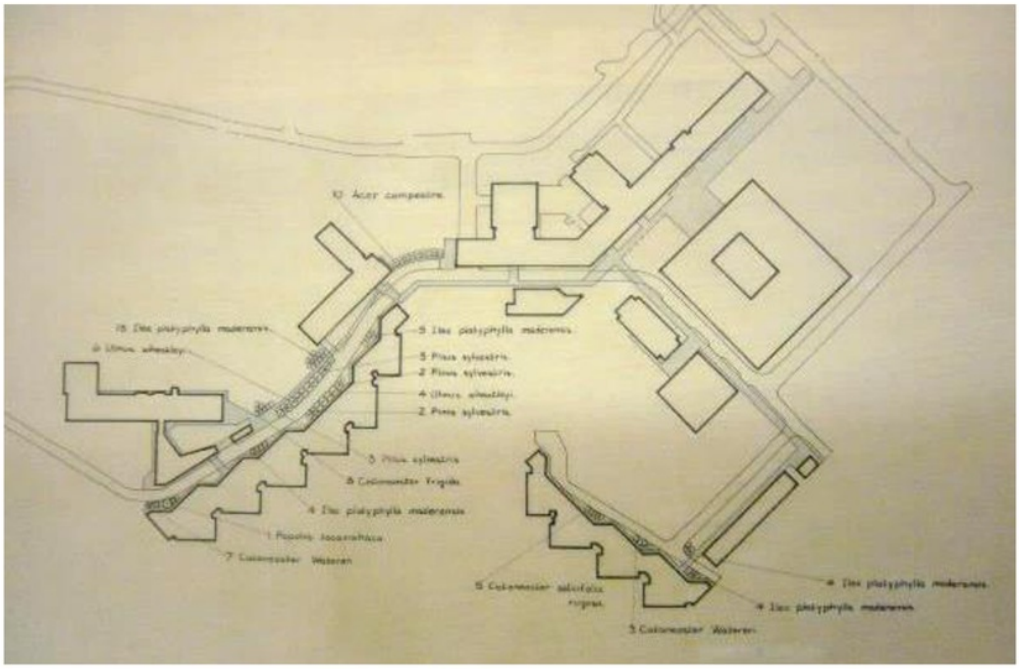

Figure 11: Brenda Colvin, Ornamental plantings along walkways and academic buildings
Source: Plan 511/D/9, December 1968, MERL AR COL, DO 1/2/21.

The southern slope was to remain a flowing, open space with a few groups of trees and shrubs framing the views towards the river. It provided a setting adapted to the large scale of the buildings. Its ground modelling was carefully studied to meet the geometry of the stepped residential units and to shape the areas between them (see figure 8).[29] The resulting sweeping contours were covered with two different

[29] See plan 511/R/5, Colvin, *Interim Report*.

kinds of grass: fine turf closely mown on the lawns along the buildings and rough grass on the areas closer to the river, scythed so as not to grow above 6 inches.[30] Among the rough grass, bulbs would be planted for seasonal colour variety without compromising the sense of open grassland. The border between both green textures was carefully designed but although Colvin insisted on its outline in the text, it is not clear where it is placed on the plan to which she refers.[31] The paths crossing this area were a source of controversy between landscape designer and architect. While Lasdun wanted the slope as an uninterrupted green carpet, Brenda Colvin was aware of the problems that would arise with such a large student population. Thus, she believed that footpaths were to be constructed for hard wear, with stabilized turf on unwashed gravel placed slightly below adjoining ground levels. Groups of low shrubs could be planted at strategic spots in order to avoid the spontaneous formation of other routes that would ruin the lawn.[32]

Further, the plan was intended to preserve the marshland along the river in its natural state, since it could perform as an outdoor classroom and laboratory for the Biological Sciences Department. Colvin also proposed turning part of the marsh into a cricket bat willow plantation for commercial use which would also enrich the biodiversity of the site. A river walk was foreseen with hard paving and timber posts lining the shores (see figure 9),[33] though there is no evidence that either of these was ever carried out. She also praised the 'wide expanse of water as proposed in the report of 1965'[34] but its realization did not seem close at that stage. The other side of the water course was to undergo intensive ground modelling in flowing forms in order to fit in a large number of tennis courts and football and rugby pitches in stepped terraces that followed the sloping ground.

One of the existing features that had already attracted the attention of Lasdun in the earlier plan was a dell which had been recorded as the Old Marl Pit on the Ordnance Survey map of the area in the

[30] Ibid., p. 17.
[31] She refers to plan 511/R/3 included in the *Interim Report*, though it is not clear which line it is on the copy kept at MERL. Hal Moggridge -Colvin's professional partner- claims it would have probably been an undulating line, never a straight boundary. Personal communication, 10 November 2018, Farmer's Club, London.
[32] Colvin, *Interim Report*, p. 5.
[33] Ibid., p.21.
[34] Ibid., p. 22.

1880s.[35] While Lasdun had planned on turning the dell into an open-air amphitheatre with geometrical steps[36] Colvin pleaded to readjust part of this hollow as rostrum for meetings and debates in a natural way, keeping the rest of it in its existing state for 'its special biological value'.[37] At a later stage, she – together with her partner Hal Moggridge - would eventually transform the adjoining ridge into an outlook on the whole campus by piling up the soil excavated for the buildings' foundations.[38] The careful shaping of the mound's silhouette – with steeper western and southern slopes and a softer northern side to allow for access to the top (figures 12 and 13) - can be traced back to the team's experience in large-scale landscaping, such as that of Gale Common Hill (1967) or Rugeley power station (1964).[39]

An experimental garden for the School of Biological Sciences was also tended between the biology buildingand the Earlham Park belt.[40] A wide variety of specimen trees were grouped at different spots along the building's façade, with a horticultural approach that was not to be seen elsewhere on the campus. Brenda Colvin hoped it would become an extension of the botanical garden that was to be laid out at Earlham Park together with the City of Norwich.[41] According to Rosamunde Codling, the biology garden had soon to give way to the university's extension.[42] In addition to these aesthetic guidelines, Brenda Colvin displayed a deep understanding of the site in ecological terms. After tension increased with the university officials, Denys Lasdun resigned as campus consultant in 1968, though he remained involved in building until the Arts Building was completed. He delivered a Development Plan in June 1969 that recapitulated on what had been realized of the 1965 plan to that date, while it aimed at setting the frame for future growth. Regarding the landscape, this report followed closely Brenda Colvin's guidelines of 1967, while insisting on several recommendations for the future development of the site.

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[35] See first edition of Ordnance Survey Map of the area at six-inch to the mile scale, Norfolk County Council http://www.historic-maps.norfolk.gov.uk/mapexplorer/ (accessed 29 November 2018).
[36] See Denys Lasdun's plan 541/16 'UEA Development Plan' 1:2500, no date. RIBA AR DL, PA2421/5 (8).
[37] Colvin, *Interim Report*, p. 23.
[38] See Colvin & Moggridge site sketch no. 3 'Prospect _Further Shaping', of 27 July 1970. MERL AR COL, DOI/2/21.
[39] Gibson, *Brenda Colvin*, pp. 172-176.
[40] Plan 541.0 'Development Plan Draft III' 1:2500, January 1969, RIBA AR DL, PA2125/2/1.
[41] See 'UEA Greater University' plan included in Denys Lasdun's *University of East Anglia Development Plan*, June 1969, p. 31, UEASC, no reference given.
[42] Personal communication. Rosamunde Codling (née Reich) was a landscape designer working for Feilden & Mawson, the firm that took over the university planning after Denys Lasdun resigned as consultant architect. Interview with the author at the Sainsbury Centre, Norwich, 4 August 2018.

Figure 12: View of the University grounds from the Prospect, August 2018.
Source: Author.

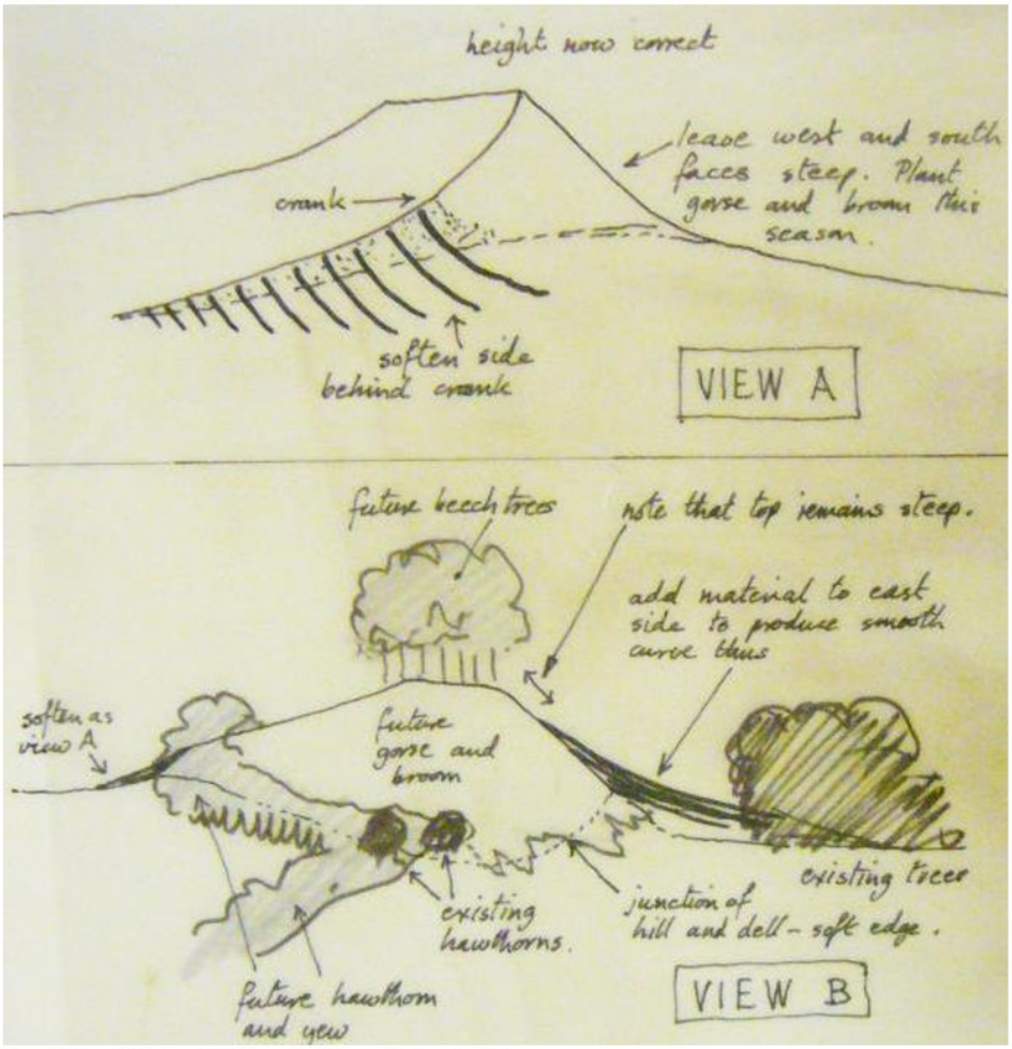

Figure 13: Brenda Colvin and Hal Moggridge, 'Prospect further shaping'
Source: Site Sketch, 27 July 1970, MERL AR COL, DO 1/2/21.

The main points concerning the landscape were to limit the spread of building as established in the perimeter of Draft III, keeping the 'green wedge' between Bluebell Road and the university free of buildings and parking and retaining the 'green apron' south of the residential ziggurats free of any buildings or roads of any sort.[43] Regarding the water features, Lasdun kept both the river diversion and the Broad as alternatives for future development, though he remarks that the river diversion would be eventually less expensive than the Broad.[44] Both alternatives were featured on the landscape plan of Draft II,[45] although the outline of the Broad went beyond the university's boundaries.

In 1969, a local architect, Bernard Feilden, from Feilden and Mawson in Norwich, took over the further development of the university grounds after Lasdun's resignation, increasing the urban character of the building area by articulating its main open spaces along a street and a square. That same year Brenda Colvin, who had just turned 70 with an increasing number of commissions, decided to transform her practice into a partnership with Hal Moggridge (b. 1936), a much younger architect that had found his calling for landscape design while working for Geoffrey Jellicoe.[46] Together they detailed many of the features foreseen in Colvin's 1967 development plan. They sculpted the mound by the eastern dell and Hal Moggridge designed the fountain that was initially placed at the main square (figures 14 and 15). It consisted of a winding stream flowing from the foot of the tree copse into a rectangular basin placed on the stone-paved square, epitomizing the synthesis of the natural and the artificial which stretched like a *leitmotiv* throughout the whole campus. Apparently, the fountain was later replaced by the current one because it was too deep.[47] The green harbour, which had initially been envisioned by Denys Lasdun, became an urban paved plaza with stepped contours for casual encounters, like a modern version of the Italian town on a hilltop that Vice-Chancellor Frank Thistlethwaite had hoped for.

[43] Lasdun, *University of East Anglia Development Plan*, June 1969, p. 116.
[44] Ibid., p. 57.
[45] Ibid., p. 55.
[46] Hal Moggridge, personal communication, 10 November 2018.
[47] Rosamunde Codling, personal communication, 4 August 2018.

Figure 14: Hal Moggridge, stream and fountain in forum.
Source: UEASC, UEA PHO/20/38.

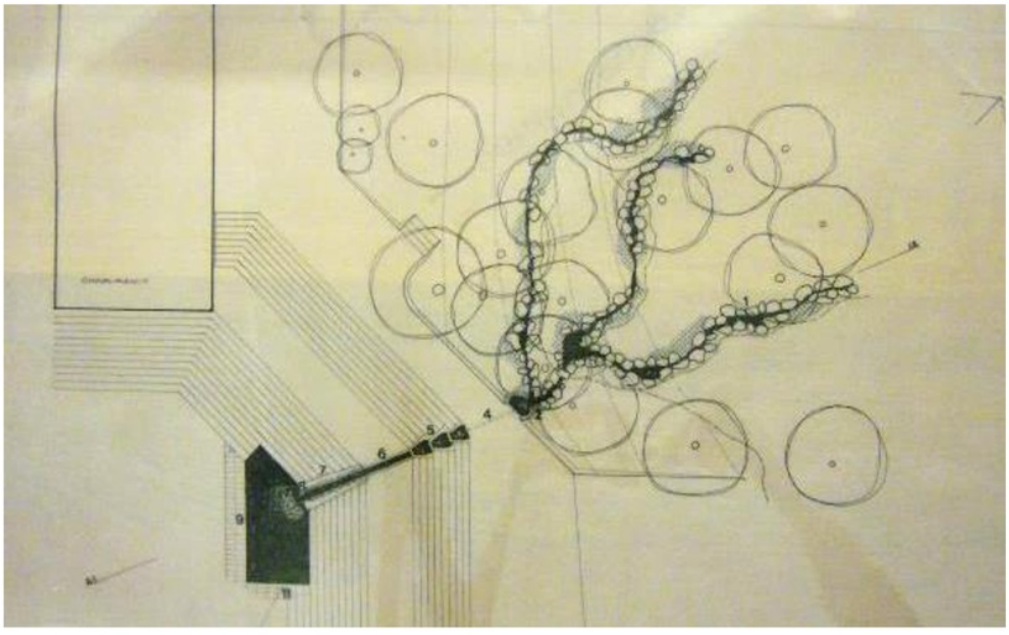

Figure 15: Hal Moggridge, 'Artificial stream in Forum',
Source: Plan 511/15A, 1:100, January 1971, MERL AR COL, Do 1/2/21.

Colvin and Moggridge finally resigned as landscape consultants of the campus in 1972, after seeing their influence increasingly restricted.48 It was also during this phase of the planning that a key strategy for realizing the Broad was put forward. Bernard Feilden, a practical man, contacted a local firm, Atlas Aggregates, to excavate the area at no charge in exchange for the gravel obtained. Though the Broad's outline was already in Brenda Colvin's plans,49 the final shape was decided upon during the excavation, when Feilden & Mason hired their own landscape architect, Rosamunde Codling. Since the first proposal was partly on land owned by the City of Norwich, the Broad had to shift its position toward the ziggurats, becoming the main eye-catcher of the university landscape. Since a lot more gravel was finally found than initially expected, it also became larger. Shrubs and trees outlined the contour of the lake, to grant the views to the water from the university core (figures 16 and 17). When it was finished in 1979,50 it was already the main landscape feature to counteract the massive scale of Lasdun's buildings.

Another important feature that was developed at that time was the Copse (figure 18). Virtually ignored in Lasdun's plans, it consisted of a well-defined group of trees that can be traced back to the Ordinance Survey map published in 1885.[51] As part of Feilden's office, Codling surveyed the tree cluster that was now at the core of the built area, just above the main square, where Moggridge's stream wound in the grass before flowing into the lower basin. She also planted a dense tree belt along Colney Lane, on the southwestern boundary of the site, to provide a sense of enclosure now that the city's outskirts were surrounding the campus.

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[48] Hal Moggridge, personal communication, 10 November 2018.
[49] See Brenda Colvin 'Sketch to Show Proposed Siting of Broad at UEA', scale 6" to 1 mile. MERL AR COL, DOI/2/21.
[50] Rosamunde Codling, personal communication, 4 August 2018. See also the postcard Rosamunde Codling wrote to Brenda Colvin on 9 September 1979, telling her that the Broad was finished. MERL AR COL, Folder A/4 2 of 4 folders.
[51] See map: OS Six-inch England and Wales, Norfolk LXIII.SW, surveyed: 1880 to 1884, published in 1885. The National Library of Scotland. https://maps.nls.uk/view/101582858 (accessed 12 December 2018).

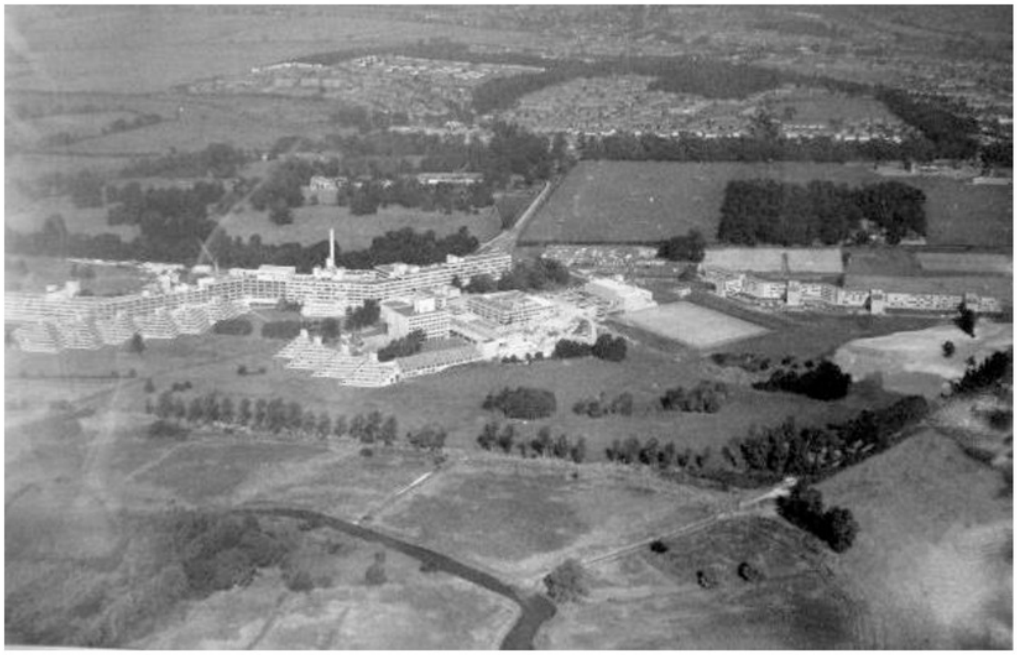

Figure 16: University grounds before construction of the Broad with hedgerow between the marshland and the grass.
Source: UEASC, UEA PHO/1/9.

Figure 17: University grounds during construction of the Broad with water reaching onto the hedgerow.
Source: UEASC, UEA PHO/1/31.

Figure 18: The Copse. Study by Rosamunde Codling.
Source: UEASC, UEA COD.

Norman Foster was appointed building consultant in July 1977,[52] but he had already delivered an analysis of the university grounds in 1974, before he started working on the Sainsbury Centre, a new building that was to host the donors' art collection. His critical evaluation of the site showed little understanding of what had been carried out to that point. After claiming there was no tangible landscape strategy, he criticized the back of the ziggurats for being a visual squalor with no landscaping and, while he felt the dell was an attractive feature, he questioned the reasons behind the adjoining hill. As for the Broad, he was wary about its function, its final appearance and its relationship with the whole, though he was aware of its potential.[53]

Since the new Sainsbury Centre was at a sensitive point of the site – between the Broad and the Arts Building - Norman Foster sought the advice of American landscape architect Lanning Roper, who had

[52] Peter Yorke, 'Brief Notes on the University's Physical Development 1962-1966', p.3.
[53] See notes on plan by Foster Associates, 'UEA Visual Arts Centre, Job 188, Plan 0, 28 September 1974', The Norman Foster Foundation, NFF_du01137.

collaborated with the Sainsburys on several occasions.[54] Since this art gallery was being erected while the Broad was being excavated, the soil that could not be used commercially was used to shape the contour of the site around the building. As Foster's site plan shows, existing trees in significant positions were retained – such as the two *Betula pendula* by the northeast corner of the building - while a few were removed – significantly a hedgerow that would have interfered with the views from the art gallery and some other *Picea glauca* (white spruce) and *Larix decidua* (European larch) where the basement ramp was built. Several copses of *Pseudotstuga taxifolia* (Douglas fir) were planted at the flanks of the gallery, while the space between the art gallery and Lasdun's buildings was redensified with further plantations to provide a green backdrop for the new structure (figure 19).[55]

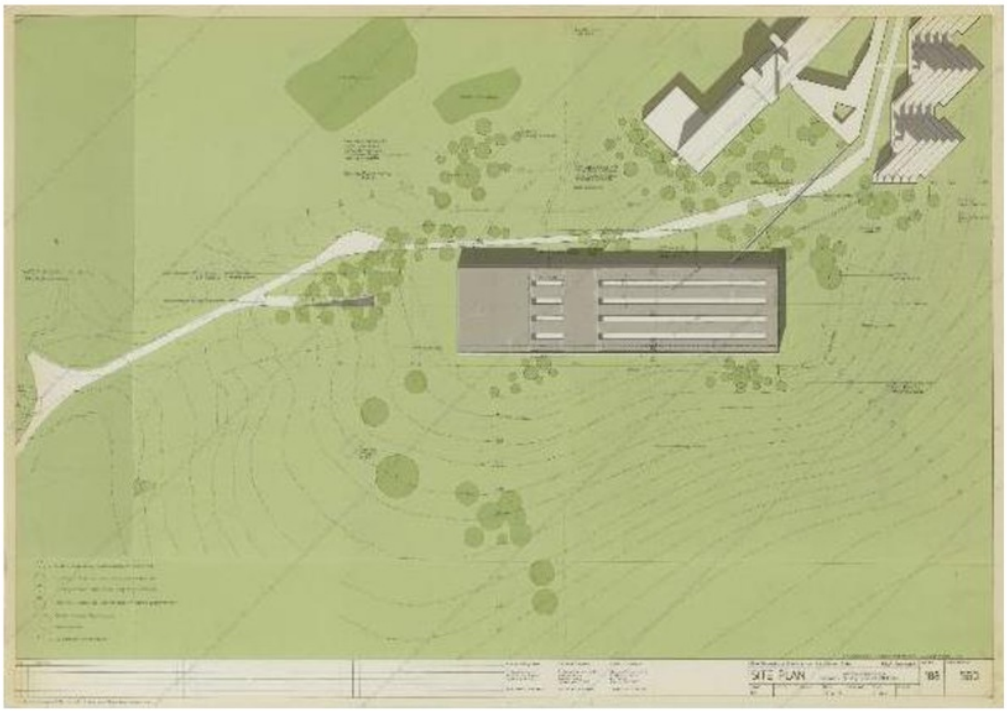

Figure 19: Landscaping by Lanning Roper around the Sainsbury Centre by Norman Foster.
Source: Foster Associates, 'Sainsbury Centre Site Plan', 1:500, 18 February 1976, NFF , tnff_du01177.

[54] See Jane Brown, *Lanning Roper and his Gardens*, (London, Weidenfeld & Nicolson, 1987), pp. 148-153.
[55] See 'The Sainsbury Centre for the Visual Arts, UEA Norwich', Scale 1:500, 18 February 1976, Plan 560, NFF, NFF_du01177.

As Norman Foster's career took off, he was replaced by Rick Mather in the early 1980s, delivering a new development plan by 1989. By the time Mather's office gained the commission, the problems they had to face were quite different from those of the 1960s. The 'luxury of excess land'[56] the university had enjoyed in the beginning was no longer there. Instead, having sold the village and other off-site premises, together with increasing student numbers, the university demanded fitting more accommodation on campus and an expansion of existing facilities. The quest was now to provide developable building land without spoiling the parkland character. The existing West Road was extended, while a new road was laid out parallel to it, so as to give access to the new development plots. Though no landscape architect was involved in the masterplan, greenery was used to conceal the new structures from the central scene. Belts of evergreen and deciduous trees were set in to screen off the views of areas of further development, while the Broad was now acknowledged as the major focus of the campus landscape.

The plan protected the four main views of the central scene: from the south walk, between the Sainsbury Centre and the Norfolk Terrace; between the Norfolk Terrace and the Computing Centre; between the University House and the Sport Centre; and from Prospect hill (figures 20 and 21).[57] More recent landscape plans, such as the *Landscape Strategy Report* by Luke Broom-Lynne and Colin Coupland of 2010,[58]have further insisted on these issues, adding to the preservation of the main views an explicit concern for protecting and enhancing biodiversity on campus, something Brenda Colvin had already pointed out in 1967.

[56] Rick Mather, *Development Plan*, 14 June 1989, p. 9, UEASC, UEA Architectural History Box.
[57] Cambridge Architectural Research LTD, *Conservation Development Strategy for the University of East Anglia*, April 2006, p. 24, 31.
[58] Luke Broom-Lynne & Colin Coupland, *University of East Anglia Landscape Strategy Report*, January 2010.

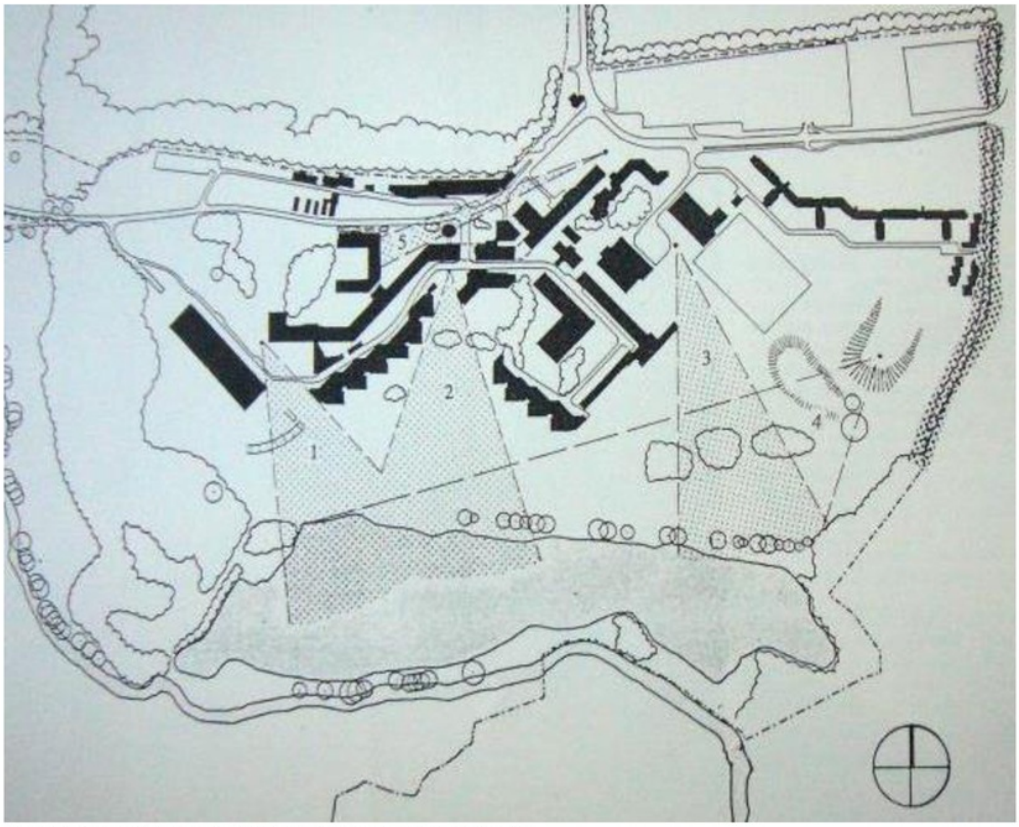

Figure 20: Protected views in Rick Mather's Development Plan, 1989, p. 24.
Source: Rick Mather Architects, *Development Plan for the University of East Anglia*, 14 June 1989, UEASC.

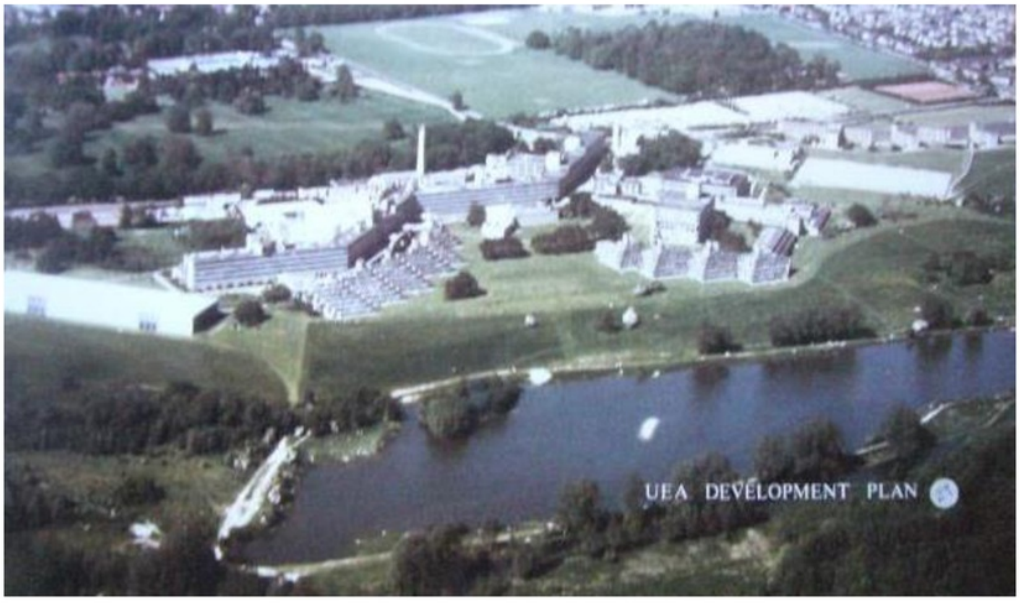

Figure 21: The completed landscape. Cover page of Rick Mather's Development Plan, 1989.
Source: Rick Mather Architects, *Development Plan for the University of East Anglia*, 14 June 1989, UEASC.

A park for learning

Thus, while Denys Lasdun interpreted the landscape in visual terms – as a static backdrop for his sculpture-like buildings - Brenda Colvin's intervention showed a deeper understanding of the site and its ecological implications. The overall landscape strategy she put forward in the interim report of 1967 relied on a thorough maintenance strategy that acknowledged the site as a dynamic system subject to evolution and change. As she stated in letter to Vice-Chancellor Frank Thistlethwaite:

> The English landscape is very largely a man-made work of art, but (…) its quality depends on constant care (…) since as a living asset it is subject to growth and decay. (…) This is particularly true of the great private estates, whose former owners designed and maintained them for posterity. Our generation benefits from their fore-thought and generosity. (…) I feel any landowner, more especially a university, has the responsibility of ensuring for the future the benefits inherited from the past.[59]

Though she was brought in at a stage when the main architectural guidelines had already been set, Colvin managed to transform the remaining features of the Earlham estate into a modern campus that translated into sweeping fields and open views the new ideals of British higher education. The later completion of the Broad by Rosamunde Codling with Feilden & Mawson further contributed to the idea of adapting the traditional features of the landscape garden – the lawn, the lake, the prospect - as a setting for a modern university that departed from the courtyard structure of traditional universities, while it adapted the campus ideal in British terms.

[59] Letter from Brenda Colvin to Frank Thistlethwaite, 4 November 1968, UEASC, Architect Correspondance – Development Plan- Landscaping – Vice-Chancellor FT_C3_D1.

III. THE QUADRANGLE REVISITED: UNIVERSITY OF ESSEX

In contrast to the University of East Anglia's landscaped approach, at the University of Essex an urban scheme was favoured. The starting point was again an 18th century park, the Wivenhoe estate, located halfway between Colchester and the neighbouring town of Wivenhoe. Its around 200 acres slope down to the River Colne before it joins the River Roman. The map of Essex drawn by John Chapman and Peter André in 1777 shows the original estate at the point where the road coming from Colchester bifurcates to head for Elmsted in the east and to Wivenhoe in the south (figure 22). It was placed on top of a plateau flanked by the valleys of three water courses: the Salary Brook to the northwest, the River Colne to the southwest and a third one to the east, running between Elmsted and Wivenhoe. Within the estate, a small brook flowed in east-west direction, cutting the edge of the plateau with a smooth valley that was eventually used to place the university services.

Figure 22: John Chapman and Peter André, *Map of Essex* (fragment), 1777.
Source: Rosemary Feesey, *A History of Wivenhoe Park. The House and Grounds*, (Colchester, Benham and Company, 1963), p. 15.

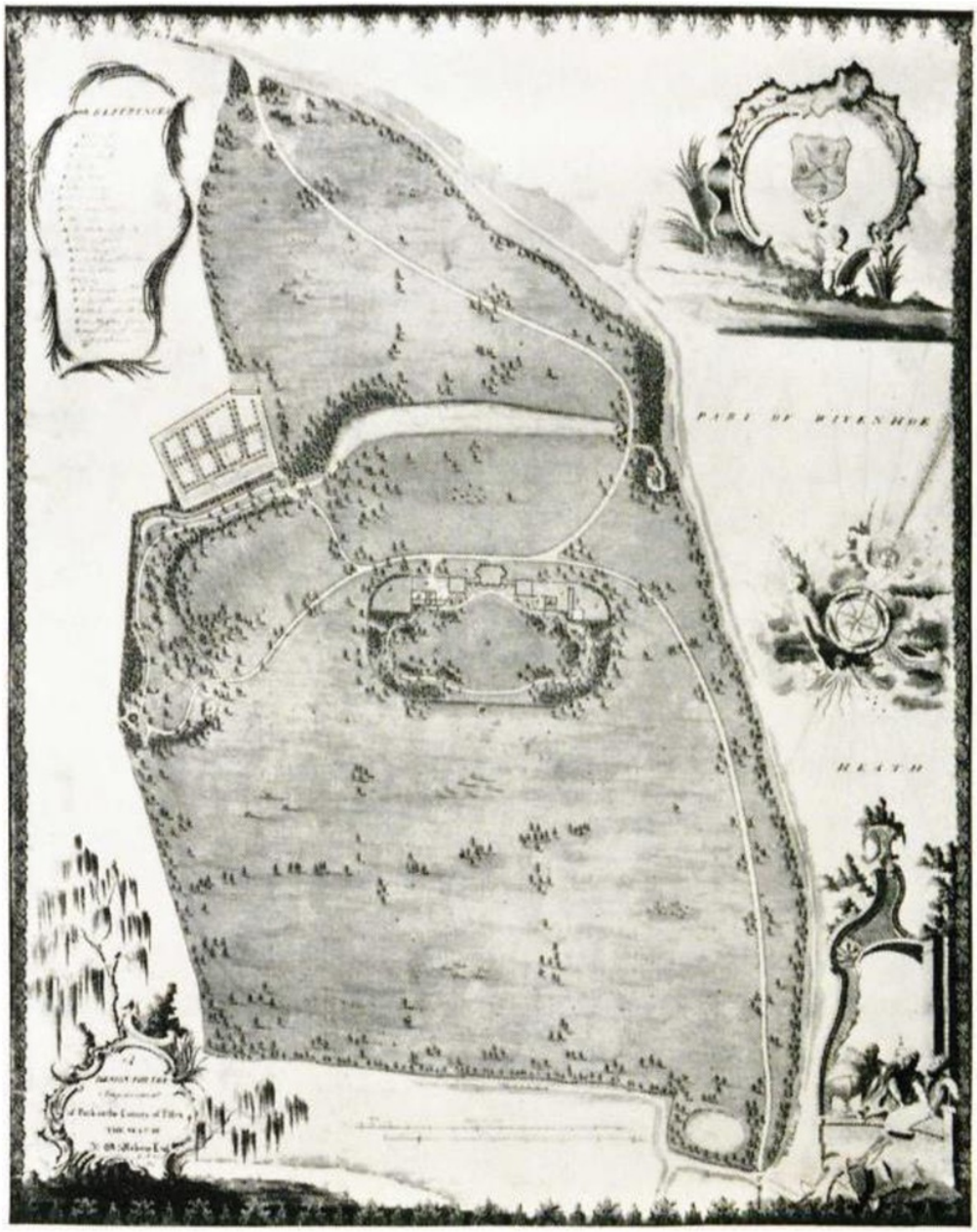

Figure 23: Richard Woods, Proposed alterations for the Park of Wivenhoe, 1765.
Source: Rosemary Feesey, *A History of Wivenhoe Park. The House and Grounds*, (Colchester, Benham and Company, 1963), p. 15.

The history of the estate can be traced back to 1734, when a first property called Bacon's Green was acquired by Isaac Lemyng Rebow, of a family of manufacturers of Huguenot ancestry.[60] This initial plot was soon expanded by purchasing adjoining farms. Two decades later, around 1759, his son Isaac Martin Rebow asked Thomas Reynolds, an architect from London, to build the mansion house, which is now Grade II listed by Historic England.[61] The Grade II registered park was laid out in the mid-1770s by Richard Woods, who densified the tree belts along the existing boundaries, built a ha-ha and designed several heads and dams to create three lakes at different levels of which only two seem to have been carried out.[62] He further suggested the construction of a grotto, a canal and ponds to be stocked with carp. A map of the grounds dated in 1765 shows the house with a lawn descending to the north toward the water course and what seems to be a southern terrace, probably enclosed by a ha-ha (figure 23).

The property is accessed by two gates, one to the north, on what today is Clingoe Hill, and the other one to the southeast, on Colchester Road. Within the estate, two coach roads connected both entries with the house, running parallel to the eastern boundary of the site, which was delineated by a dense tree belt. An enclosed kitchen garden was featured on the western boundary of the site, approximately where the third lake was eventually built as part of the university, some 200 years later. It was also then when a stout oak fence was assembled surrounding the estate. It was mainly this landscape which was portrayed by John Constable (1776–1837) in his painting *Wivenhoe Park, Essex* of 1816, now kept at the National Gallery of Art, Washington DC.[63] In it, the house and two of the lakes can be seen, as well as the oak fence and the grotto at the head of the first lake (figure 24).

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[60] Rosemary Feesey, *A History of Wivenhoe Park: the House and Grounds*, (Colchester, Benham and Company, 1963), p. 7.
[61] Wivenhoe House, Grade II, listed 1 June 1973, https://historicengland.org.uk/listing/the-list/list-entry/1225229 (accessed 28 May 2019).
[62] Wivenhoe Park, Grade II, listed 1 February 1989, https://historicengland.org.uk/listing/the-list/list-entry/1000371 (accessed 28 May 2019). The registered parkland includes the two original lakes but not the area occupied by most of the university buildings.
[63] Alison Inglis, '"The heroine of all these scenes": John Constable and the Rebow family in 1816,' *Art Journal* 41, 3 June 2014.

Figure 24: John Constable, 'Wivenhoe Park, Essex', 1816, Oil on canvas, 56.1 cm × 101.2 cm.
Source: National Gallery of Art, Washington, D.C., USA.

Figure 25: Fragment of the Map of Essex XXVIII (includes: Ardleigh; Colchester; Elmstead; Wivenhoe), OS Six-inch England and Wales, surveyed 1874-1875, published 1881. National Library of Scotland, https://maps.nls.uk/view/102341876 (accessed 9 June 2019).

The eighteenth-century park was to undergo mayor alterations around 1846, when Thomas Hopper (1776-1856), Surveyor to the County of Essex, remodeled the house and William Andrews Nesfield (1793-1881) relocated the coach roads and entrances to the estate and adapted the grounds to the taste of the time. Hopper worked on the house and gardens for a period of about five years, during which, the estate was enlarged westward by the acquisition of the adjoining farms. This new part was subsequently planted with evergreens as was the house garden with roses and other flowers, which were constantly threatened by the deer. A new ha-ha, four feet high, was to keep them away from the new plantations. The OS map of 1881 shows how the Great Eastern Railway line from Colchester to the coast ran parallel to the course of the River Colne, providing the agrarian landscape with a sign of the times (figure 25). Eventually, the last member of the Rebow family sold Wivenhoe Park to Charles Edmund Gooch in 1902, before the grounds were requisitioned during both World Wars. After hosting several thousand military members, with their tents, tanks, etc., after the war the estate was cultivated for a brief span of time before being laid back again for pasture. It was then when the County Council settled the terms of sale with Charles Edmund Gooch's son in November 1961.[64] Two years later, the University of Essex accepted the gift of property of Wivenhoe Park from the council to host its main premises.[65]

Kenneth Capon's urban spine

The university layout was the outcome of the close interaction between Vice-Chancellor Albert Sloman and architect Kenneth Capon (1915-1988) of the Architects' Co-Partnership. Albert Sloman (1921-2012) was a former fighter pilot and an Oxford graduate in Modern Languages, who had spent a year at Berkeley before becoming Guilmour Chair of Spanish at Liverpool.[66] He was barely over forty years old when he was appointed Vice-Chancellor of the future University of Essex in 1962 by Noel Annan, Chairman of the Academic Planning Board and Provost of King's College in Cambridge, who was

[64] D. N. Bungey, 'The First Three Years: the Development of the University of Essex 1959-1962,' Typescript, UESC.
[65] 'Provision of university site at Wivenhoe Park', Minutes of the Council of Governors of 17 January 1963, p. 12. UESC.
[66] Anon., 'Obituary: Albert Sloman', *The Telegraph*, 5 August 2012.

determined to put forward a modern institution specialized in the applied and social sciences.[67] Sloman was thus involved in the Promotion Committee that appointed the Architects' Co-Partnership a year later,[68] after interviewing ten firms recommended by sir William Holford, then president of the RIBA. At the committee's request, the firm – with previous university design experience, such as that of the Baptist University of Nigeria, the bedroom blocks for St John's College in Oxford or its proposal for Churchill College in Cambridge[69] - designated Kenneth Capon as its partner in charge of the development plan.

The academic plan, which aimed at the unity of knowledge and a more democratic relationship between faculty and students, was translated into built forms after an intensive exchange of ideas between Sloman and Capon.[70] According to Sloman, the plan was for 'a university town, not for some pavilions in the park'.[71] Although he had been teaching Spanish at the University of Berkeley between 1946 and 1947[72] and he pleaded for a whole new approach to higher education, he regarded the campus setting he had enjoyed in California as unsuitable for Essex. A campus plan might be good for a small university but such a disperse scheme would lengthen communications when it came to host some 10,000 students, making it difficult for staff and students to change classrooms on time, he argued. Further, the English weather – often rainy and windy - would make such connections all the more difficult and 'no one is more irritable than a wet don'.[73] Also, a dispersed layout would demand more self-sufficient buildings with their own facilities, which would increase the cost.

Thus, although the innovative academic plan attempted to blur the boundaries between departments and faculties, fostering a multidisciplinary approach, the physical expression of such renewal resorted to the traditional urban pattern embedded for centuries in British higher education. As a reinterpretation

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[67] Jules Lubbok, *Something Fierce: University of Essex, Vision and Reality*, exhibition guide at University of Essex, September 2014, p. 7.
[68] Kenneth Capon was appointed campus architect on 28 September 1962. Minutes of Council of Governors, 28 September 1962, UESC.
[69] Muthesius, *The Postwar University*, p. 153.
[70] Albert Sloman, *A University in the Making, Reith Lectures 1963*, (London, BBC, 1964), p. 71.
[71] Ibid., p. 66.
[72] Albert Sloman visited several American universities from 3 May to 6 June 1963 under the Foreign Leader Programme of the Department of State. He also encouraged Kenneth Capon to take part in a campus design conference at Stanford later that year. Capon eventually visited America before August 1963. See Minutes of the Council of Governors, 25 April 1963 and minutes of the Development Committee, 1 August 1963, UESC.
[73] Ibid., p.66.

Figure 26: Kenneth Capon, University of Essex model, c. 1963.
Source: UESC.

of the Oxford quad, Kenneth Capon presented in October 1963[74] – a year after his appointment - a university scheme that occupied the existing valley with a series of platforms at different levels featuring five connected courtyards (figure 26). The surplus clay from the excavation was to be used to build a dam, so a third lake would connect the two existing ones with the university core. Buildings interlocked around the courtyards to allow for a flexible arrangement of academic areas such as mathematics, social sciences, comparative studies or engineering, which would enable to cross boundaries between traditional departments.

These five courts would perform as a sequence of pedestrian urban squares, with restaurants and cafes allowing for activity long after the academic schedule was over. A set of residential towers on both sides of this central spine provided accommodation for students living on site and study rooms for those living off the grounds. Flats for men and women would alternate on each floor and each student would have his or her own key, leaving behind the invigilated staircase and pastoral care of the traditional colleges at Oxford and Cambridge. Vehicles were to remain underground, giving access to all services

[74] Minutes of Council Governors, 2 October 1963, p.27, UESC.

beneath the spine and were otherwise confined along a ring road running mainly along the boundaries of the estate, so as to preserve the green apron around the central spine.

Capon's proposal – which was presented at the Royal Academy 1963 summer exhibition[75]- attempted to provide 'something fierce', a scheme that avoided the English love for 'softening everything up'.[76] However, his design for Essex - with its courtyards and towers - expanded on his 1959 competition entry for Churchill College in Cambridge, which interpreted anew the British universities' tradition of low wings around quadrangles and vertical pinnacles. Sloman trusted that going for this compact, urban scheme instead of a campus layout would provide the isolated site with 'the variety and liveliness of town life'.[77] Capon had demanded aerial photographs of the site and a further tree survey, which was carried out by G. E. Brown, assistant curator of the Arboretum at Kew.[78] Both architect and Vice-Chancellor had walked the site intensively but although they praised its beautiful features, it was not until 1964,[79] two years after the architect had started to work on the general layout, that a landscape designer was involved in the planning. Michael Brown (1923-1996) eventually delivered a *Preliminary Landscape Report* in December 1965,[80] when all major spatial decisions had already been taken.

Michael Brown's environmental approach

A Scottish architect who had obtained a scholarship to study landscape architecture at the University of Pennsylvania, Michael Brown was a key figure in introducing in Britain the environmental approach that was emerging at the time in the United States of America. A collaborator in Dan Kiley's Vermont office before his return from America, in Pennsylvania he was also a pupil and colleague of Ian McHarg, a pioneer in the ecological approach to planning,[81] who had developed a new course entitled 'Man and the Environment' at the University of Pennsylvania. Brown was well acquainted with McHarg's

[75] Minutes of the Development Committee, 7 May 1963, UESC.
[76] Lubbok, *Something Fierce*, p. 19.
[77] Sloman, *A University in the Making*, p. 69.
[78] Minutes of the Development Committee, 14 June 1963, UESC.
[79] Minutes of Council of Governors, 16 December 1964, UESC.
[80] Michael Brown, *Preliminary Landscape Report and Site Studies. University of Essex*, 1965, MERL AR BRO, Folder Bro 001/1/6 1 of 2.
[81] Tom Stuart-Smith, 'Obituary: Michael Brown', *Independent*, 7 March 1996.

environmental strategies well before the latter published his seminal book *Design with Nature* in 1969.[82] His methodology can be traced in Brown's analysis of the University of Essex site. McHarg saw the Earth as a complex system in which human activities can alter its balance and lead to its destruction. Thus, every new intervention should take into account all possible issues implied or affected by planning, such as climate, hydrology, geology, soil, physiography, land use, wildlife, anthropology, history, etc. In order to assess all these factors comprehensively, he represented them in a series of layered maps that anticipated the multidisciplinary working processes of geographic information systems. By combining all this information, designers were provided with a better understanding of the project's location, helping to identify the most suitable areas and planning strategies. Time was the unifying rubric of this mapping system that allowed an understanding of how the site came to be, how it was at that time and how should it be in the future, McHarg argued.[83]

This ecological approach can also be found in Michael Brown's *University of Essex Landscape Development Plan* of December 1965, the result of a long consultation process with the architect, traffic consultants, Miss Chesterton and Mr Henderson, the University Estate and Planning Officer, Mr Pemberton, and microclimate expert, Mr Stringer.[84] The report attempted an overall assessment of the nature and character of the site, in order to establish the most appropriate uses of the land 'in the light of the development plans already prepared by the architect'.[85] This assessment included a thorough analysis through layered maps identifying the area's hydrology, the different microclimates within the site, the main winds, water sources, ecology, slopes, gravel strata and soils, existing woodland, vehicle and pedestrian movement, traffic noise and even the blight areas visible from the site, much in the way he had learned from his collaboration with Ian McHarg (figure 27).

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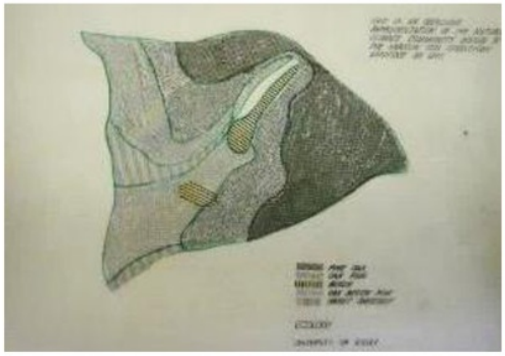
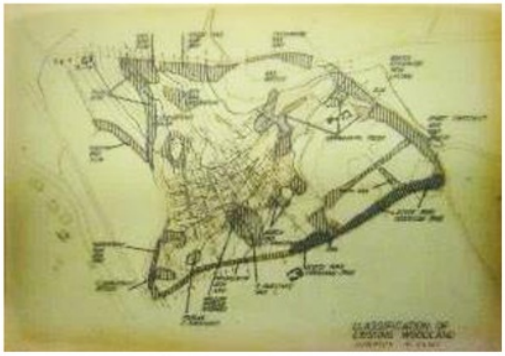
[82] Ian McHarg, *Design with Nature* (New York, Natural History Press, 1969).
[83] Ian McHarg, Acceptance Speech of President's Medal, Environmental Systems Research Institute (ESRI) User Conference, 1997, Part I, 5:44, https://www.youtube.com/watch?v=6PfcKtcc_jA, (accessed 25 May 2019).
[84] Michael Brown, *University of Essex Report: Landscape Development Plan,* December 1965, p. 1, MERL AR BRO DOI/1/6 1 of 2.
[85] Ibid.



a. Ecology

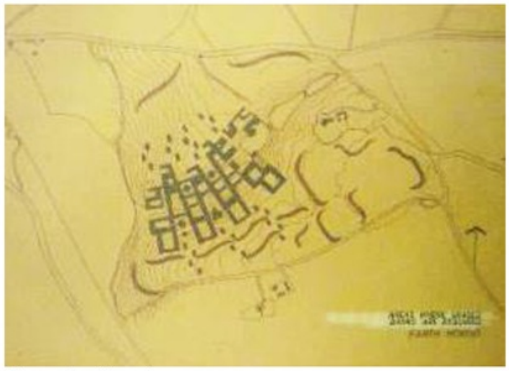


b. Existing woodland

c. Soils

d. Gravel strata

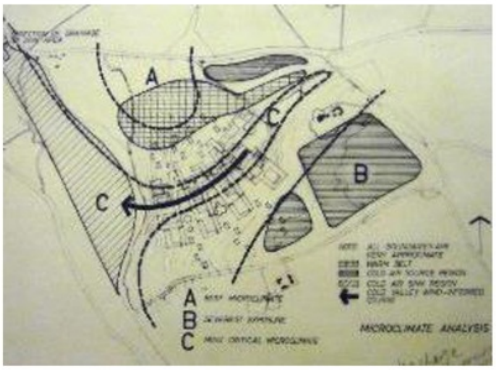
e. Slopes



f. Graded banks

Figures 27 a-f: Michael Brown, University of Essex Landscape Development plan, 1965.
Source: MERL AR BRO, DOI/1/6 1 of 2.

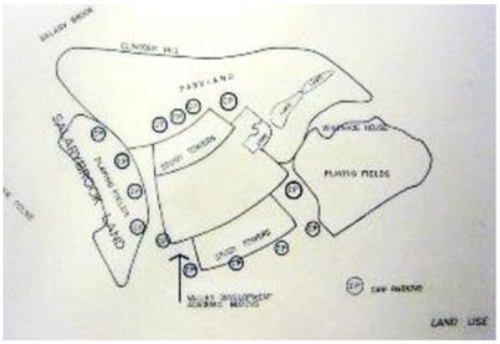
g. North and East winds



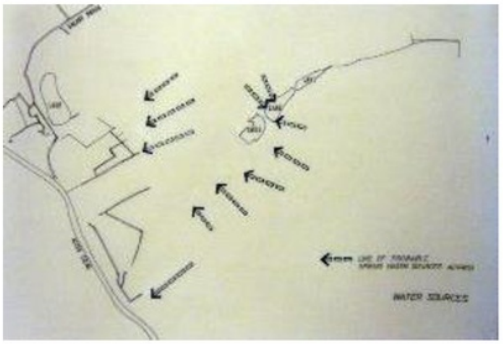
h. Microclimate analysis

i. Traffic noise

j. Blight areas visible from the site



k. Land use



l. Water sources

Figure 27 g-l: Michael Brown, University of Essex Landscape Development plan, 1965.
Source: MERL AR BRO, DOI/1/6 1 of 2.

Figure 28: University of Essex Landscape aerial view.
Source: UESC.

Brown's landscape proposal attempted to address the problems which were outlined in this analysis. The overall scheme already subscribed to something for which McHarg had advocated: high-density building so as not to spoil the parkland. Though buildings took up a large area, an extensive part of the park remained free and further plots were identified within it, so future buildings could be introduced without losing the parkland character that had inspired Constable, some 150 years before (figures 28 and 29). As for the water features, a third lake was created on top of the valley, articulating the 'heart of the university',[86] with the library, the administration and the drama and music buildings around it. The water courses were examined in a wider context and Michael Brown demanded further analysis about the salt content of the Salary Brook, a spring affecting an adjacent piece of land that was to be eventually purchased to enlarge the university grounds to the west. He also expressed his concerns about water shortage in the summer months and its consequences for the plants and the varying water levels of the

[86] Ibid., p. 1.5.

lakes, which were taken into account while selecting new plantings and designing the reservoir's contours. Existing plantations consisted mainly of oak and, to a lesser extent, of elms, but a rich variety of other species such as beech, sycamore, horse-chestnut, ash and sweet chestnut could also be found. A belt of evergreens, such as Scots and Austrian pine, outlined the southern boundary adjoining the playing fields. The main crierion in deciding which elements of the existing park remained was mainly drought resistance, with sweet chestnut having the better options.[87] Fast-growing, drought-resistant trees were inserted to widen and densify a continuous belt running along the north, east and south boundaries, so as to screen off traffic noise and north winds, and channel the southwestern wind along the valley. A detailed proposal with paved terraces and small trees granted privacy to the Vice-Chancellor's lodge, which was placed between the first two lakes, without obstructing the open character of the park.[88] Behind Wivenhoe House, on the flatter ground at the highest part of the site, a series of playing fields was surrounded by new tree plantations, which would help mitigate the high evaporation loss that was detected there.

The landscape along the study towers was to keep the largeness of scale of the architectural scheme. Groves of trees were to form continuous shaded canopies enclosing open spaces. Since the towers would cause turbulences in the air flow systems of the valley, the planting of large trees around them performed as a buffer to this source of discomfort.[89] The increasing number of vehicles that were expected in the years to follow was allocated along a series of car parks along a peripheral ring road, sheltered within the locally enlarged tree belts. Graded grass banks with further planting would help integrate these into the park landscape. Along the north and the south boundaries, a combination of cold-air ditches and banks made from the excavation works in other parts of the site were to be laid to redirect the cold air westwards, away from the main spine. East-west path routes follow this relief, intersecting with the more formal pedestrian causeways that link the towers with the central spine (figure 29).[90]

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[87] Ibid., p. 3.4.
[88] Ibid., p. 1.2.
[89] Ibid., p. 1.3.
[90] Michael Brown, *Landscape Development Plan 1965*, MERL AR BRO, PF/1 2 of 2 drawings.

Figure 29: Michael Brown, University of Essex Landscape Development plan, 1965.
Source: MERL AR BRO, DOI/1/6 1 of 2.

In contrast with the picturesque landscape of the park, the central spine had a strong urban character. Brown resorted to his experience in the public housing schemes he was developing at the time, such as the Brunel Estate in Paddington, Beavers Farm in Hounslow or Grahame Park Estate.[91] Here, he built upon McHarg's idea of the 'Court House Concept'[92] in a series of open spaces among buildings that were carefully detailed in its ground moulding and surfacing in order to provide specific microclimate conditions.[93] Since the main courtyards and squares were placed along the valley, their design had to deal with sharp changes of level, treatment varying in response to the different buildings' needs. In this context, retaining walls were – according to Brown - major elements of design.[94] Five squares ascend the

[91] Stuart-Smith, 'Obituary'.
[92] Amber Roberts, 'Discovering the landscape: lost landscapes of Michael Brown', The Merl/News and Views/Archives, 1 June 2017. https://merl.reading.ac.uk/news-and-views/2017/06/discovering-landscape-lost-landscapes-michael-brown/ (accessed 25 May 2019).
[93] See plan 'Microclimate Studies Courtyards', no scale, featured in Brown, *University of Essex Report*, p. 4.5.
[94] Ibid., p. 1.5.

valley along the central section of the structure, building an urban spine that started at its lowest point with a balcony that opened up to the western views toward Colchester and the River Colne. The opposite end of the spine was topped with the symbolic volume of the library. In Capon's words its position was 'as significant as that of Magdalen Tower in the curving High Street of Oxford'.[95] Rectangular in shape, the five squares were flat platforms at different levels connected by passages through the buildings hosting flights of steps and helping to build a visual sequence much in the way Gordon Cullen (1914-1994) had just described in his seminal book *Townscape*,[96] of 1961. The squares featured hard landscaping with different elements, such as fountains or planters at their centre, providing informal seating opportunities for social intercourse among faculty and students, as Sloman had envisioned (figures 30 and 31). Flanking the spine on both sides, a series of courtyards stepped in various directions so as to match the contours of the adjoining landscape.

The square shapes recall the traditional quad with their simple geometry and their green surfacing, albeit with a more complex articulation. The proposal for the Social Studies courtyard,[97] for instance, is a good example of the careful grading of the levels in slanted planes, ramps and stairs which Michael Brown probably tried out in the small sand pit he kept in his office as a testing bench for his designs (figures 32 and 33).[98] This sequence of stepped platforms and courtyards along the valley was to find its climax uphill, in a series of terraces at various levels, connected by flights of steps that were to bridge over a planned pool taking over the entire length of the upper terrace. They would frame the third lake on the two sides linking the administration with the Drama and Music building. The third lake would thus feature two sides at right angles and a free-form contour as transition to the park. This elegant way of shifting from the highly urban, geometrical character of the central spine to the free-flow forms of the landscape, which had been mastered by other international architects such as Alvar Aalto.

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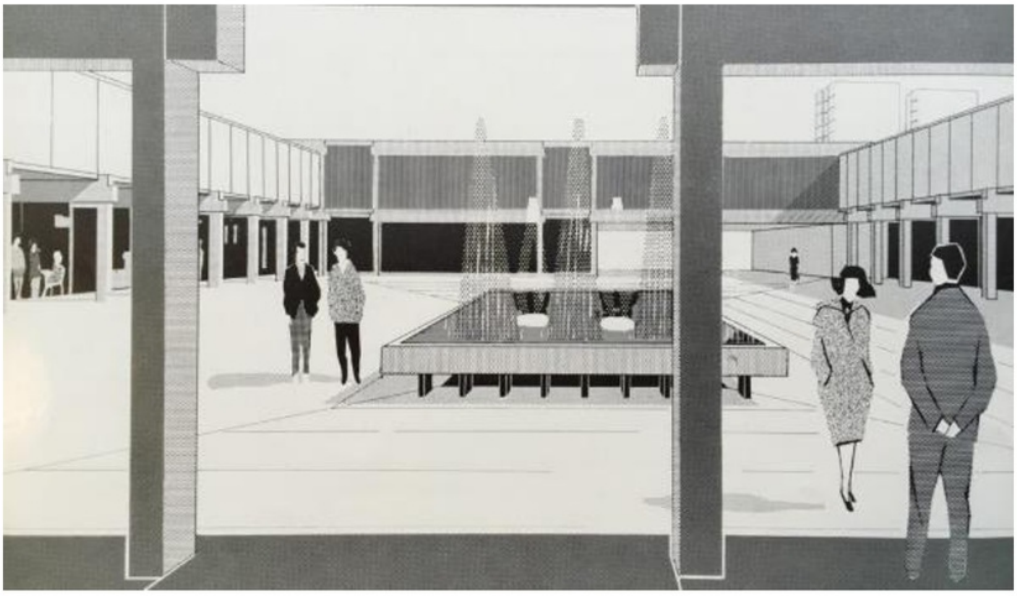
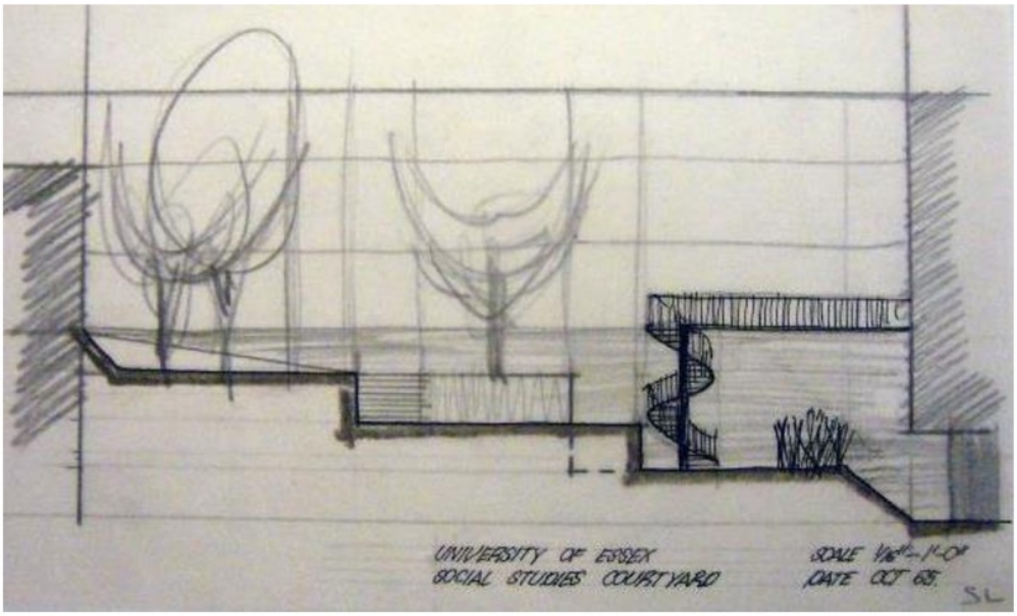
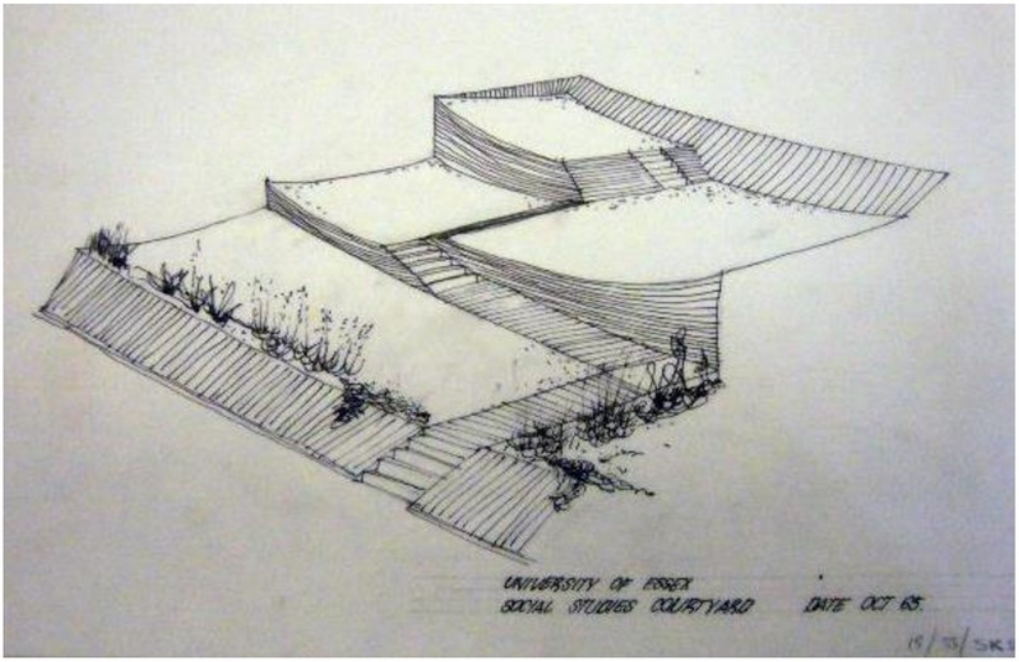
[95] Lubbok, *Something Fierce*, p. 27.
[96] Gordon Cullen, *Townscape*, (London, Architectural Press, 1961).
[97] See Michael Brown's sketch 'University of Essex. Social Studies Courtyard,' October 1965, MERL AR BRO, 15/SS/SK2.
[98] Stuart-Smith, 'Obituary'.



Figures 30 and 31: Michael Brown, University of Essex square proposal and its realized version.
Source: UESC.





Figures 32 and 33: Michael Brown, section and perspective of Social Studies courtyard, University of Essex, October 1965.
Source: MERL AR BRO, DOI/1/6 2 of 2.

at the University of Jyväskylä (1950-1956) or the Technical University of Otaniemi (1955-1964),[99] both in Finland, was not realized in that way. Instead, for many years, the library stood alone in front of the third lake, as the abrupt end of the urban spine. This lack of interaction between the urban realm and the park remains today, despite the recent additions at that end of the valley. In 2006, the oval-shaped Ivor Crewe Lecture Hall, by Patel Taylor, vaguely attempted to frame the view of the lake from the upper terrace, but the 2017 university extension by the same architectural office – which enlarged the library and added a parallel wing to it to host the Silberrad Student Centre[100]- have further insisted in creating a hard boundary between the built and the natural realms.

Later developments have further occupied the lower parts of the site, to the north and south of the central spine. While these extensions consist mainly of student accommodation, the higher ground next to Wivenhoe House now hosts the university's playing fields, which were initially planned along the River Colne, on what used to be Salary Brook Farm. The former deer park retains today much of the character once depicted by Constable, despite the increase in the number of users.

A new interpretation of tradition

Thus, the concentration of buildings has allowed for the 18th-century park to remain largely unaltered, so as to preserve the flair of Constable's painting. Michael Brown's landscape proposal picked up on themes that were at the forefront of town planning at that time: Gordon Cullen's concept of townscape, Jane Jacob's plea for pedestrian space, and first and foremost, Ian McHarg's environmental principles. At the same time, his and Capon's plan could not help incorporating key features of the British higher education tradition such as the quad, the symbolic presence of the library or the urban character of the whole, despite the fact that the university was located in the countryside. While the park was used as backdrop and the interaction with the spine never unfolded as planned, the true contribution of the landscape design took place in the squares and courtyards, where Michael Brown could apply Ian

[99] Richard Weston, *Alvar Aalto*, (London, Phaidon Press, 1995), pp. 184-193.
[100] Anon., 'Shining light in Essex: Ivor Crewe Lecture Hall', *World Architecture News*, 10 January 2008.

Figure 34: University of Essex, visual connection between squares along the spine, 18 July 2018.
Source: Author.

McHarg's theories to reinterpret the quadrangle of traditional institutions for a new purpose and in new ways. As in Oxford and Cambridge, student life was to take place in the rooms outdoors defined by the buildings (figure 34) where both hard landscaping and greenery helped to transform these open spaces into active areas that fostered social intercourse through stepped tiers, benches or lawns where staff and students could mingle in a more informal way. While traditional quads were manly a place of transit, where the grass surface delineated a series of pedestrian connections, the courtyards at the University of Essex were molded in steps and slanted planes for informal meetings or teaching outside. In Brown's proposal, the quad could be more than a quad: it was to become an active part of the environmental concerns and the academic ideals of a new time.

IV. A SYNTHESIS OF ARCHETYPES: UNIVERSITY OF SUSSEX

While East Anglia looked for its leitmotiv in the landscape and Essex opted for an urban scheme, the University of Sussex advocated for a hybrid solution that combined the urban character of the Oxford quadrangle with the landscaped ideal of the American campus. The beauty of the setting – part of Stanmer Park, on the outskirts of Brighton (West Sussex), between Falmer and Lewes - was immediately acknowledged by both the promoters and the architect, striking the keynote for the whole proposal. The site of the university is set within the South Downs, a landscape of soft chalk hills and dry valleys stretching along England's south-eastern coast - from Winchester to Eastbourne -, where traditionally sheep have grazed on open grassland, to be confined in corn fields at certain times to improve fertility, in what is known as sheep-corn husbandry.[101] This results in a green, turf-covered and undulating topography divided by hedgerows and occasional woodland, which identifies much of the university's surroundings even today.

As in most of the new universities, the site was part of a former estate located between Brighton and Lewes, which had lived its heyday in the 18th century, though its origins can be traced back to the Middle Ages. It was then - to the end of the 8th century - when a large area, including arable land around Stanmer and extensive woods to the north, was granted by King Ealdwulf of the South Saxons to Earl Hunlabe.[102] Later on, the estate was also included in the Domesday Book, where it was described as comprising 49 villagers and 10 smallholders, ploughland, woodland and swine, being one of the most important estates around Brighton.[103] But it was in the 1710s that Stanmer was sold to the Pelham family of nearby Lewes and was thoroughly improved. The estate would eventually experience its most important transformation when Thomas Pelham, 1st Earl of Chichester, commissioned French architect Nicolas

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[101] Jane Whittle (ed.), *Landlords and Tenants in Britain (1440-1660),* (Woodbridge, The Boydell Press, 2013), p. 40.

[102] Brighton and Hove City Council, *Stanmer Conservation Area. Appraisal*, 2010 <https://www.brighton-hove.gov.uk/sites/brighton-hove.gov.uk/files/downloads/conservation/Stanmer_Character_Statment_FINAL.pdf> (accessed 10 August 2019).

[103] Domesday data created by professor J. J. N. Palmer and team, University of Hull, <https://opendomesday.org> (accessed 7 August 2019).

Dubois to build a Neo-Palladian house on the grounds of the former Jacobite mansion and to transform the park with new entrance lodges, a fence and tree belts protecting perimeter walks. A map of 1797 already shows many of the green features that were eventually kept in the campus layout (figure 35). By 1800, the neighbouring properties of Balmer and Falmer had been purchased by the Pelham family and remained in their hands until the beginning of the 20th century, when parts of the estate began to be sold to different parties as farming productivity declined. The remaining Stanmer Park and house were finally bought by the Brighton Corporation in 1947 to secure the city's water supply – since the city's water works were in the area - and to provide recreational space in provision for future urban expansion.[104]

Once World War II was over, the 1911 project of founding a university in Brighton was taken up again, after the Percy Report of 1945 pleaded for increasing the number of scientists in Great Britain and the Barlow Report of 1946 called for opening universities in those parts of the country that were far away from the traditional centres of higher education.[105] After a decade of work by different local committees, a formal proposal to open a university in Brighton was approved by the Town Council in 1956,[106] which was first accepted as University College of Brighton in 1959 and eventually granted the Royal Charter as the University of Sussex in 1961.[107] The grounds of Stanmer Park were specially suitable for the University Grants Committee requirements: around 200 acres of land to allow for future extension but close enough to Brighton to provide services and student accommodation. The railway line, which had been opened in 1846[108] to the south of the site (figure 36), provided a fast connection to Brighton and the holiday apartments of the area could be easily used by the academic community during the off-peak season. After nominating John Fulton (1902-1989) as Vice-Chancellor and Basil Spence (1907-1973) as architect in 1959, the University of Sussex was ready to take its physical shape.

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[104] Brian Short, 'The past in the present: the campus landscape before 1960', in Fred Gray (ed.), *Making the Future. A History of the University of Sussex*, (Falmer, University of Sussex, 2011), p. 61-62.
[105] W. G. Stone, 'Steps leading to the foundation of the university,' in David Daiches ed., *The Idea of a New University. An Experiment in Sussex*, (London, Andre Deutsch, 1964), p. 174.
[106] Ibid., p. 168.
[107] Muthesius, *The Postwar University*, p. 108.
[108] H. P. White, *A Regional History of the Railways of Great Britain. II Southern England*, (London, Phoenix House 1961), p. 84.

Figure 35: Map fragment showing Stanmer Estate with tree belts along the road to Lewes, on Richmond Hill, on Tenant Lain ridge and along the valley, which were later kept as main features of the University of Sussex campus.
Source: Thomas Budgen, *Lewes* [map], scale 2": mile, 1797, British Library.

Figure 36: Stanmer Estate and Falmer in 1899.
a: Richmond Hill b: Russell's Clump c: Tenantlain Barn d: North-South hedgerow e: Upper Tenant Lain drive f: Railway line g: Falmer
Source: OS six-inch England and Wales, Sussex LIII.SE, surveyed 1897, published 1899.

Figure 37: Aerial view of Stanmer Estate and Falmer before the University of Sussex was built.
Source: USSC, SX UOS 1/Draw/1.

Basil Spence's masterplan: a cluster of fragments

The overall layout was developed in parallel with the academic programme and it was the outcome of a close collaboration between Vice-Chancellor and architect. A public servant with extensive experience in higher education, John Fulton was Vice-Chancellor of the University of Sussex from 1961 to 1967, when he left after reaching the initial target of 3,000 students. Under his lead, the university departed from the traditional collegiate organization and its academic programme was articulated in Schools of Study that avoided the fragmented structure of departments. Further, an individual tutorial system was initially launched,[109] though this had to give way eventually to more conventional lectured teaching as student numbers increased. To host such an educational agenda, a new architecture was sought. Interviews were carried out with William Holford, Leslie Martin and Richard Sheppard, among others, but it was finally Basil Spence (1907-1976)[110] who obtained the brief. A former assistant of Edwin Lutyens at the Viceroy's palace in Delhi, Basil Spence had gained international acclaim with his winning entry to rebuild Coventry's cathedral and had previous experience in education-related building with several premises for the universities of Cambridge, Liverpool and a masterplan for the University of Nottingham.[111] However, it was his particular enthusiasm on the natural features of the site, which convinced the committee and led to his appointment in 1959.

The area initially occupied by the university comprised some 150 acres of Stanmer Park and 50 additional acres.[112] Its topography lent the whole an undulating structure of alternating dry valleys running in a north-south direction and soft slopes, extending from the wooded ridge of Richmond Hill to the west to the Upper Tenant Lain drive to the east. The main valley - where the core of the university was to be placed - was divided by a hedgerow with native, mature trees running north-south that was to become one of the campus's main features (figures 36 and 37).

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[109] John Fulton, 'New universities in perspective,' in Daiches (ed.), *The Idea of a New University*, p. 19.
[110] Muthesius, *The Postwar University*, p. 110.
[111] Philip Long and Jane Thomas, *Basil Spence Architect*, (Edinburgh, National Galleries of Scotland, 2007), pp. 119-122.
[112] Basil Spence, *University of Sussex: Building Plans and Methods*, typed manuscript, undated, USSC, SX UOS 1/UOS Arch/3.

Occasional tree groups, such as the Wilkins Folly, the Old Lodge clump and, specially, Russell's clump, dotted the open fields where sheep and cows were still grazing when Basil Spence first visited the site.[113] Gravel and chalk pits bear witness to the geological nature of the place: a pervious chalk subsoil and occasional areas where the local sandstone known as Sarsen emerges, often around the ponds ('mere') that inspired many place names in the area (Falmer, Stanmer, Balmer, etc.).[114]

The Tenant Lain Barn was the only existing construction at the time Basil Spence first visited the site. In his own words, it was 'a barn of boarded walls, the roof with knapped flints and brick gables', which cling to the hedgerow 'in that sensitive way that is peculiar to indigenous building'.[115] This careful placing of buildings in relation to natural features was to be his *leitmotiv*. He was overwhelmed by the beauty of the views and he felt, he could not build there without disturbing this Downland scene. He thus opted for a humble approach; one that would subordinate the buildings to the landscape. Existing trees were to dominate the scene, top the buildings and delineate the skyline (figure 38). The profile of rolling hills was to frame a set of brick structures that were to be kept low. No towers were desired neither by the architect, nor the client.[116] Since the university was to be built over many years, during which generations of students would still have to attend class, Basil Spence opted for a scheme which allowed the greatest possible freedom;[117] one providing a series of finished units within a constantly evolving whole. The Greek idea of incompleteness made out of fragments of the outmost perfection

in constant growth provided his guiding vision. The new campus was to be 'something like a rock-plant that grew quite naturally between rocks, sending leaves out of a pattern'. [118]

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[113] Basil Spence, 'The planning and building of the University of Sussex,' *Proceedings of the Royal Institutions of Great Britain* 189 (1966), p. 208.
[114] Short, 'The past in the present,' in Gray (ed.), *Making the Future*, p. 58.
[115] Basil Spence, 'Building a new university. The first phase,' in Daiches (ed.), *The Idea of a New University*, p. 201.
[116] Basil Spence, *University College of Brighton. County Borough of Brighton Blank Application*, USSC, SX UOS 1/1/5/3/1/3/2.
[117] Spence, 'The planning and building,' p. 208.
[118] Ibid.

Figure 38: Tree survey of Stanmer Estate before the University of Sussex was built, 3 March 1959.
Source: USSC, DB/D/ACC 11213/150.

Figure 39: University of Sussex model with Basil Spence's initial proposal.
Source: USSC, SX UOS 1/1/1/27/3/5/5/4.

The core of the university was set at the lowest point, in the bed of the valley, with further buildings expanding away from it in terraces, half-way up the flanking slopes. Advantage was taken of the site contours in order to separate cars and people at different levels: the university centre remained pedestrian, while vehicles were kept out of sight to a large extent on the site borders (figure 39). In this green bowl, a network of interlocking courtyards of varying character evolved. Buildings set within the park features were to provide the finished units Spence was looking for, granting with their patios a sense of enclosure, protection and comfort in the open-air where students could meet. The masterplan thus sought the sharp contrast between the hard-paved courtyard precincts – devoid of all kinds of planting - and the green setting, linking the built units into a comprehensive ensemble.

Landscaping was kept simple. The overall scheme tried to take advantage of the mature trees and the main existing features of the site, specially the hedgerow belt running north-south, which was to become the campus's articulating spine. To the west of this green belt, an open court was loosely defined by the

trees and the careful siting of the library, the Arts Building, and Falmer House, the university's venue for social activities. This court was to become the university's core, eventually hosting, as well, the Meeting House, a spiritual centre with no specific denomination that replaced the chapel of traditional universities. Behind the tree belt, the Physics and Chemistry Buildings provided a sense of enclosure from a slightly elevated terrace. Two pathways crossing at right angles recall the cloister tradition of the first universities, linking both physically and symbolically the refectory at Falmer House and the library, the Physics and Chemistry Buildings with the Arts Building and the Arts Centre: the needs of the body and the needs of the soul; the approach of the sciences with that of the arts.

The tree belt extended further north, articulating the different phases of the campus as a green axis, including student residences that spread up the slopes always below the 300 feet contour line which delineated the site's skylines.[119] Another existing hedgerow running from the main belt to the east was extended and used as a secondary axis of the university park, sheltering in part a vehicular connection within the campus. The new structures became linked to the large scale of the surrounding landscape, taking up the existing pattern of hedgerows and tree belts for a new purpose.

Along with these green features, water elements also played an important role in the overall layout. Basil Spence explained how the idea of water emerging from the ground at a place so close to the sea appealed to him,[120] so water became the theme bridging the dual nature of the whole, for it appeared both within the enclosed, hard-paved courtyards of the buildings and throughout the soft, green interstices. Falmer House, the first structure to be built, is a good example of the role water played. A prismatic brick construction, it was inspired by the Roman Coliseum in its present, ruinous estate and by Le Corbusier's postwar work, specially by the Jaoul houses (1954-1956)[121] he had built with brickwork walls and exposed concrete vaulting. It also took up the quadrangle ideal of British university tradition, in particular, the central courtyard of the University of Edinburgh.

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[119] Extract from the confidential minutes of the Housing Committee, 21 March 1966. HES AR BS, MS 2329/ENG/52/4/1-262.
[120] Spence, 'The planning and building', p. 210.
[121] <http://www.fondationlecorbusier.fr> (accessed 22 July 2019).

Figure 40: View of Falmer House courtyard and pool, c. 1962-1970.
Source: HES AR BS, SC 1046952.

As he stated: 'my mind leapt to my native Edinburgh with the 18th century quad designed by Robert Adam, the nucleus of the great University'.[122] The core of Falmer House was a stone-paved patio lined with arched facades and flanked with water basins on all four sides that collected water falling from the roof through several monumental gargoyles (figure 40). No plants were included inside this inner open space, but green was to be seen through the large-scale voids that perforated its facades. Water was introduced as a character-giving feature in all courtyards and was even included as a moat around the Arts Building and the Meeting House. Not only the form of these water features but also the qualities of water itself were carefully explored. Basil Spence and his team asked Peter Shepheard for advice[123] to keep the basins clean. Drawing from his experience at London's Zoo and other public spaces, Shepheard advised them to keep them clean with a balanced organization of plants and fish and the use of some sort of fountain to sink dust, but the university authorities finally opted to sterilize water with copper

[122] Spence, 'Building a new university,' p. 201.
[123] Peter Shepheard, letter to Gordon Collins, of Basil Spence's office, 21 April 1964. HES AR BS, MS 2329/ENG/52/4/1-262.

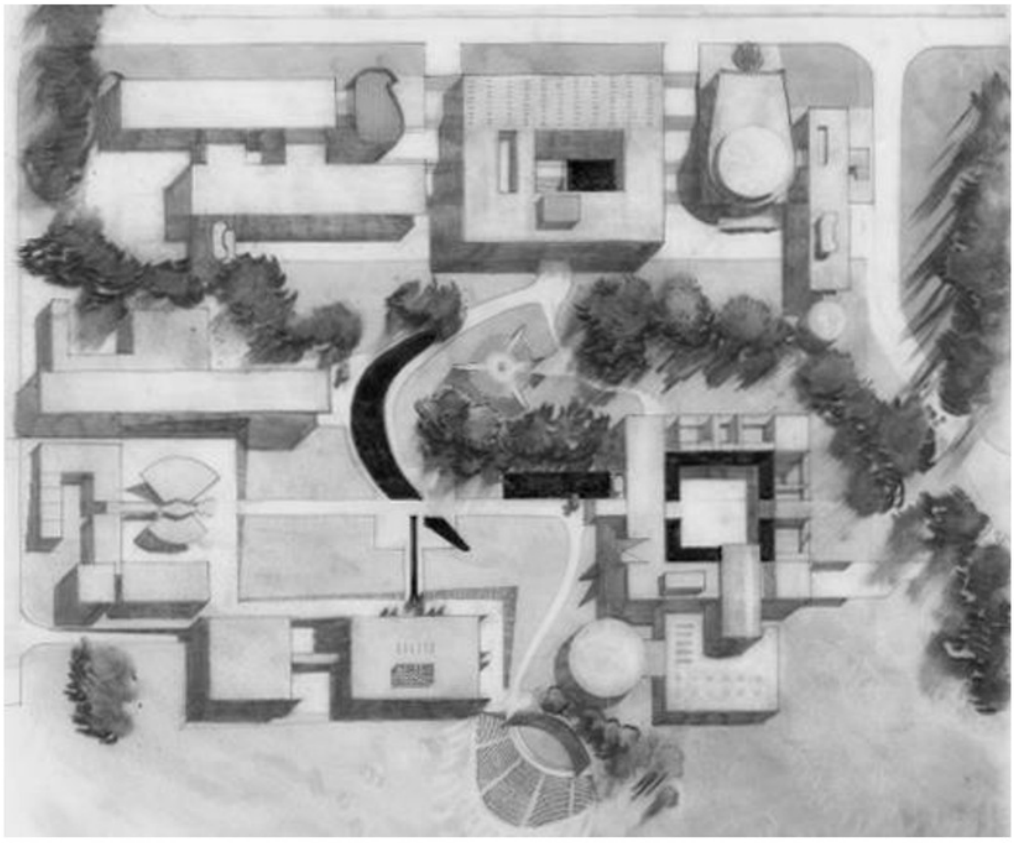

Figure 41: Basil Spence, University of Sussex main court with water features in black, September 1960.
Source: HES AR BS, DP 014632.

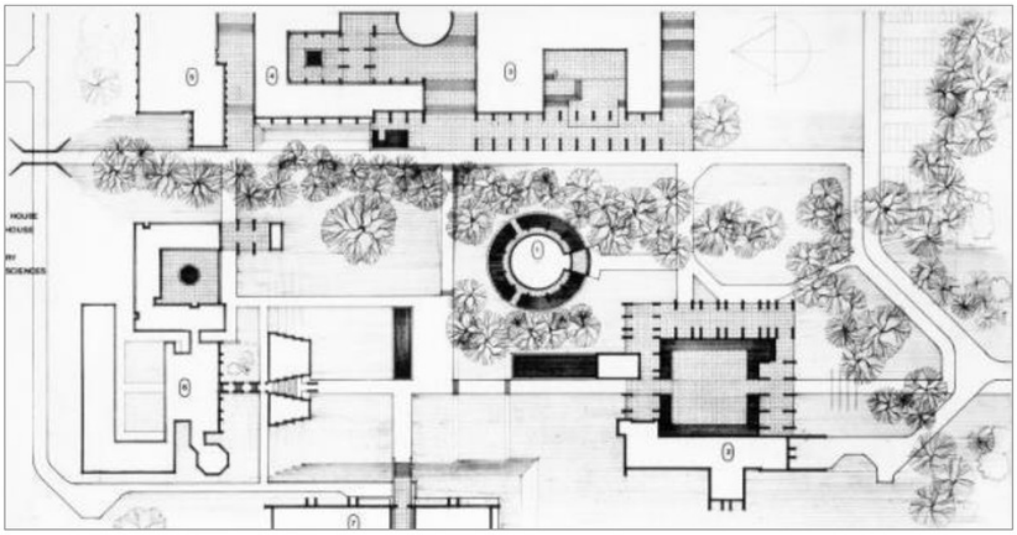

Figure 42: Basil Spence, University of Sussex main court, c. 1962-1966.
Source: HES AR BS, SC 1046592.

sulfate to avoid a dark bottom in the basins.[124] The introduction of water features was controversial for safety and maintenance reasons and the architect had to argue they were necessary as water tank reserves in case of fire, since both fire stations at Brighton and Lewes were too far away from the university premises.[125] The early site plans around 1960 feature straight water basins along the pathway linking Falmer House with the Arts Building and along the path to the library, while a free-form pool traverses the tree belt toward the Physics Building (figure 41). However, the latter disappeared from the realized version, being replaced with a rectangular pool emphasizing the centre of the main open court (figure 42).[126]

Sylvia Crowe's collaboration: a matrix of trees

Sylvia Crowe's collaboration in the University of Sussex scheme has been often mentioned but little graphic evidence has been found about the extent of this. She was officially appointed landscape consultant[127] by the University of Sussex - following Basil Spence's suggestion - in January 1968, almost a decade after the masterplan was first outlined. However, an article of 1965 already claimed that 'Miss Sylvia Crowe, landscape consultant, was called in to advise'[128]and a report on the landscaping of the new universities mentions her advisory work from 1961 to 1969.[129] Louise Campbell refers to correspondence between both designers during 1962 concerning the thinning of tree belts, contouring and new planting.[130] Since Spence and Crowe collaborated in a number of proposals, such as Trawsfynydd Power Station (1959-1963) or Spence's own house in Beulieu (1961),[131] it is likely that he looked for Crowe's advice in an informal way before she was actually appointed as consultant.

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[124] Gordon Collins, letter to Peter Shepheard, 29 July 1964. HES AR BS, MS 2329/ENG/52/1/1 Office Write-ups.
[125] *The New Universities and their Landscape Architects*, undated typescript, USSC, SX UOS 1/UOS Arch/2.
[126] Compare the initial version of the site plan of September 1960 with the realized version of the mid-1960s. HES AR BS, DP014632 and SPE/ENG/52/1/6/PO.
[127] Letter from Sylvia Crowe to Basil Spence of 3 January 1968, HES AR BS, MS 2329/ENG/52/4/1-262.
[128] Ann Bradbury, 'The University of Sussex. The progress of the University since its opening in 1961,' *The Guardian*, 25 May 1965, pp. 13-15.
[129] 'The new universities…,' USSC, SX UOS 1/UoS Arch/2.
[130] See note number 14 in Louise Campbell, 'Drawing the map of learning,' in Long and Thomas eds, *Basil Spence Architect*, p. 127.
[131] Collens and Powell eds, *Sylvia Crowe*, pp. 176-179.

Whether directly or through her previous experience with Basil Spence, the landscaping principles Crowe described in books such as *Tomorrow's Landscape* can be traced in the overall scheme for the campus. As a building task, a university – like power stations, factories or new housing developments - fell under the category of human undertakings that challenged the landscape with its scale and density. According to Crowe, these 'new colossi'[132] had to be accepted and designers could either link them by siting and design with the existing scale or create around them a new landscape related to their own scale. By integrating existing tree belts and hedgerows in the campus masterplan (figure 43), Spence opted for the first alternative, helping to inscribe the new structures within the landscape pattern in a way that is even to be seen today in its present extended state.

This retention of existing features in the new schemes was also advocated by Crowe, who had reused hedgerows in different ways to give character and maturity to new housing developments in Basildon (figure 44) and other New Towns' designs.[133] Crowe too praised the beauty of the South Downs for 'the supreme beauty of the rhythmic skyline, which (…) is destroyed by the sudden verticality of pylons',[134] which was also the reason why Spence opted for a horizontal scheme and avoided tower-like constructions. Sylvia Crowe claimed as well that the contours of a landscape should be one of the greatest facts to be taken into account on the siting of all development and that full use should be made of landform, avoiding 'the horrors of serrated skylines with small houses built on ridges',[135] a tenet that seems to be behind the prohibition of building above the 300 feet contour line at the University of Sussex.[136] In her letter to Basil Spence announcing her appointment as landscape consultant for the University of Sussex, she pointed out that a long-term plan was needed for the distant future.[137] As student numbers increased and a campus expansion became necessary, a plan was put forward in

[132] Crowe, *Tomorrow's Landscape,* p. 15.
[133] Ibid., p. 22.
[134] Ibid., p. 34.
[135] Ibid.
[136] Extract from the confidential minutes of the Housing Committee, 21 March 1966. HES AR BS, MS 2329/ENG/52/4/1-262.
[137] Letter from Sylvia Crowe to Basil Spence of 3 January 1968. HES AR BS, MS 2329/ENG/52/4/1-262.

Figure 43: Axis linking Falmer House with Arts Building, flanked by reflecting pool and existing hedgerow at the University of Sussex.
Source HES AR BS, SC 1046857.

Figure 44: Existing trees are incorporated into new housing development in Basildon.
Source: Sylvia Crowe, *Tomorrow's Landscape* (London, The Architectural Press, 1956), p. 25.

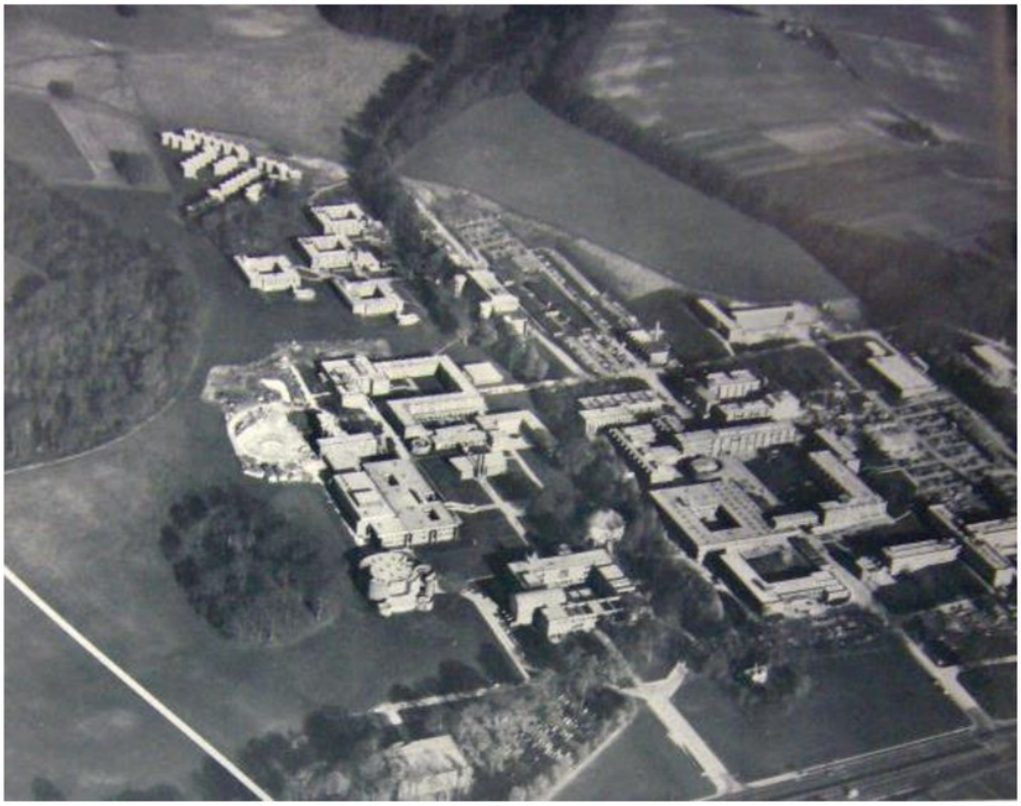

Figure 45: Aerial view of the University of Sussex from the southwest c. 1973.
Source: HES AR BS, SX UOS 1/1/1/15/3.

January 1973 by a team of architects, site development planners and faculty members.[138] The slope between the Physics Building and the tree belt called Upper Tenant Lain Drive, was allocated for academic expansion, while the area north of the clump linking both tree belts was allocated for student housing. Plans show how the increasing amount of parking space was becoming a relevant issue since it demanded an important percentage of the campus area (figure 45). The following November, Crowe delivered a proposal for a landscape policy aimed at coping with a more intensive land use. According to this document, the principle of establishing belts of woodland to link the wooded hilltops down to the valley could no longer be achieved due to the density of building that was now expected, but the idea

[138] J. A. Thomas and T. C. Green (architects), C. Redshaw and C. P. Kirby (site development planners) and faculty members from the different schools of studies (teaching Economy, Geography, Arts and Science, among others) were also part of the committee. Neither Basil Spence, nor Sylvia Crowe were mentioned in the document. *University of Sussex: Site Development Project Discussion Paper*, January 1973. USSC, SX UOS 1/1/1/15/3.

should be still to set the buildings within a matrix of trees. This could be achieved by planting a tree within each quad and drifts of trees along the pedestrian pathways. Tree belts could be planted between larger building complexes, an idea which was similar to her design for Harlow New Town, where the different neighbourhoods were set within a matrix of trees.[139] Furthermore, all car parks should be planted with trees, making every third bay shorter – although still suitable for smaller cars - so as not to lose any parking space. Shrubs should be used around these areas to conceal the increasing volume of vehicles.[140] In order to solve the problems of wear that had already appeared on certain grass areas – which were expected to get worse - fences were to be avoided. Instead, new paths should be created, avoiding sharp grass corners and using ground-covering planting and spreading shrubs.[141]

In order to adapt to the 21st century challenges, London-based architectural firm ADP developed a first master plan in 2004, which has been extended in 2015, in order to fulfill the university's vision to reach a population of 18,000 students in twenty years (figure 46).[142] The sea of car parks that has appeared over time will give way to a main open space on the eastern slope, which will act as the core of the university extension, while cars will be contained in park decks along the eastern access to the site. Furthermore, the Refectory Road will be transformed into a pedestrian boulevard connecting the residential areas to the north with the heart of campus, allowing for glimpses to the wooded ridges between buildings.[143] Within this framework, there are more specific landscape proposals for certain sections, such as the new student village by TP Bennett and Balfour Beatty, architects, and Fabrik landscape designers (figure 47), which was granted planning permission in 2016.[144] This new residential development stretches over 8 hectares of land on the eastern slope flanking the valley with a series of north-south terraces.

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[139] David Scott, 'New Towns,' in Collens and Powell eds., *Sylvia Crowe*, pp. 47-67.
[140] Sylvia Crowe, *Proposals for a Landscape Policy Designed to Deal with the Increased Development*, November 1973. USSC, SX UOS 1/1/5/6/5/3.
[141] Ibid.
[142] <http://www.adp-architecture.com/projects/masterplan-university-of-sussex>, (accessed 15 August 2019).
[143] Roger Fitzgerald, 'Masterplanning the campus,' in Gray (ed.), *Making the Future*, pp. 46-53.
[144] <https://www.fabrikuk.com/posts/article/items/planning-permission-granted-for-the-university-of-sussex/> (accessed 15 August 2019).

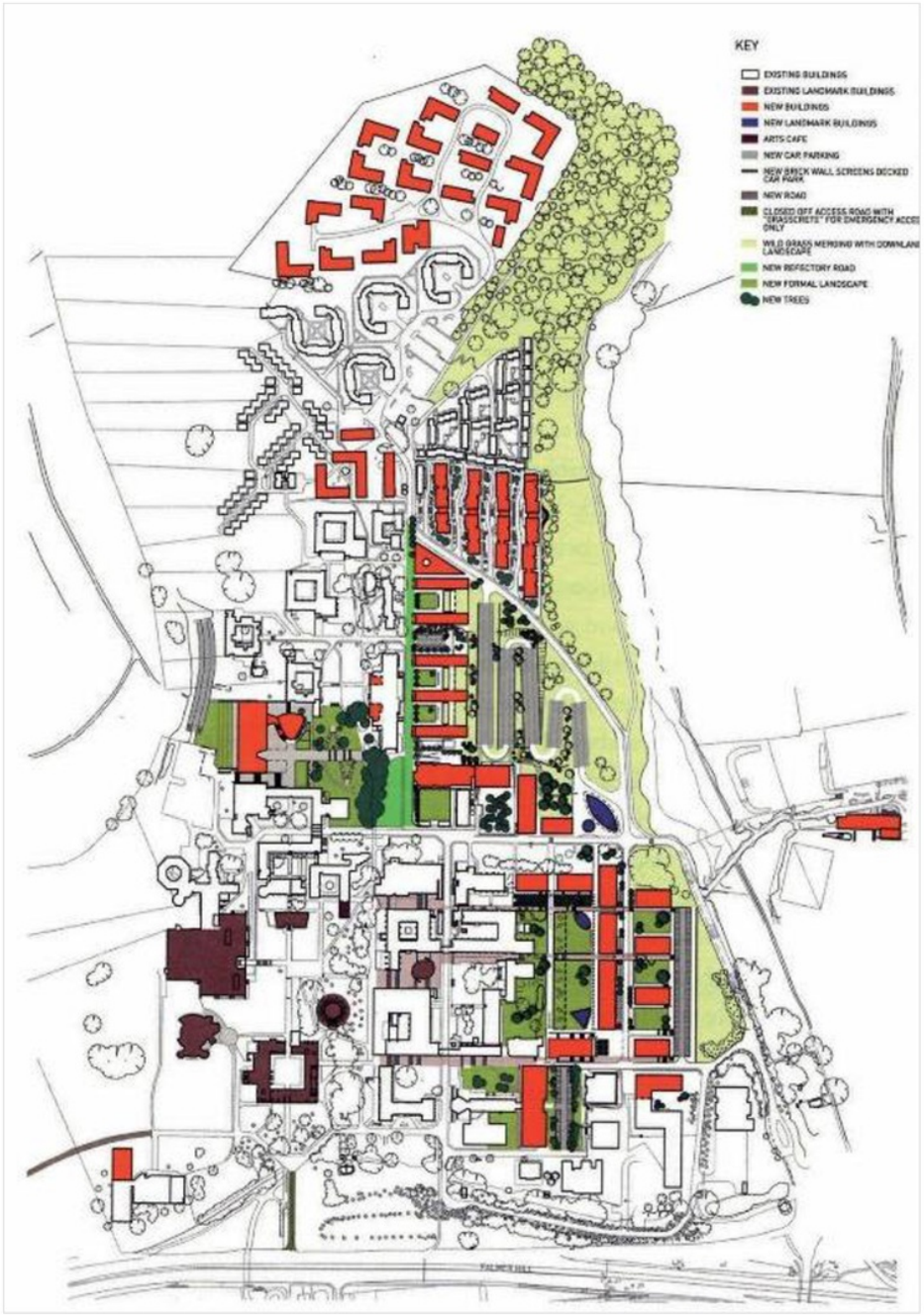

Figure 46: University of Sussex campus masterplan, by ADP architects, March 2011. Dark green: new trees Middle green: new formal landscaping Light green: wild grass areas merging with Downland landscape.
Source: Fred Gray ed., Making the Future, (Falmer, University of Sussex, 2011), p. 46.

Figure 47: Perspective of Student Village on the eastern slope of the University of Sussex, c. 2016, by TP Bennett Architects and Balfour Beatty, architects, with Fabrik landscape designers.
Source: https://www.fabrikuk.com/posts/article/items/planning-permission-granted-for-the-university-of-sussex/ (accessed 15 August 2019)

Thus, the new structures have shifted the university core to the east, but they are still sheltered by existing and new tree belts that expand on Sylvia Crowe's idea of a green matrix. Though Basil Spence's buildings have retained their urban character devoid of vegetation, the more recent premises insist on the idea of green courts, which is alien to the 1960s proposal but follow Crowe's indications of 1972.

A campus of quads

The University of Sussex remains today a cluster of buildings linked by a series of differentiated green spaces that conveys its identity and provides its character. Though the British idea of the college quad was consciously used to define the first buildings and provide the rural site with an urban flair, Basil Spence, together with Sylvia Crowe, aimed at creating a campus, explicitly resorting to this term to define the project. Unlike at other universities, neither Fulton, nor Spence had had any major professional experience in the USA, but the sensitive approach to the outstanding landscape of the Sussex Downs

made them adopt a campus arrangement, despite parting from the more traditional option of the quadrangle when defining the buildings. However, the idea of a campus layout seems to derive not so much from international examples of the time but from the careful observation of local traditions and a sensitive approach to the existing setting: one that lets the landscape prevail.

V. NEW BRITISH UNIVERSITY LANDSCAPES: THEMES AND VARIATIONS

The landscapes of the seven new British universities of the 1960s (East Anglia, Essex, Kent, Lancaster, Sussex, Warwick and York) all shared a similar starting point. With an area of about 200 acres and located away from the city centres, most of their sites were former landscape parks with well-established trees. They also shared a quest for innovation in their academic programmes that was translated into architecture through the close interaction between vice-chancellor and architect. Despite the fact that all locations enjoyed a green setting, landscape architects were called in to collaborate mostly when the main planning decisions had been taken, unlike other large-scale projects of the postwar period, where they were involved at an earlier stage. Thus, at the new universities, they could only subordinate their proposals to the existing architectural scheme and room for innovative landscape design was therefore narrowed. While all institutions unfolded in a comparable frame, their grounds display very different attitudes toward their settings, often merging traditional feats with contemporary trends. From the detailed research on the new universities of East Anglia, Essex and Sussex that forms this dissertation, a number of design themes and variations have emerged.

Traditional themes

Since many vice-chancellors and faculty members were former graduates or lecturers at Oxford or Cambridge universities, the break with the past was not always as radical as it appeared to be. Tradition survived in many of the new schemes, through reinterpretations of the quad – in Essex and Sussex -, the central position of the library or the vertical accents of the towers at Essex, or the gate known as the 'tune fork' on the main axis of Sussex. However, a more subtle continuity with the past can be traced in the careful preservation of previous landscape features. All designers recognized the value of existing belts of mature trees, which often became vital structural elements linking the new buildings to their settings. This was the case at East Anglia, where Lasdun and Colvin successfully reinterpreted the elements of the 18th century park – the copse, the lawn, the lake, the prospect - for a new purpose and a new scale. A similar approach can be found at Sussex, where existing tree belts articulated the grounds

and embedded the brick buildings within the rhythmic alternation of soft slopes and dry valleys. In Essex, the integration of the main park scene was pursued through the digging of the third lake, but it was not fully accomplished, since the buildings and platforms around it were never realized. In this case, the landscape park depicted by Constable was preserved, although it was virtually ignored from the central university spine.

Contemporary variations

Along with these traditional themes, the university designs portrayed their innovative academic agenda through a radical architecture that was both infused with international trends of the time and was widely influential abroad. The urban scheme at Essex is closely related to contemporary European proposals such as Vittorio Gregotti's Universitá della Calabria (1973-1975), in Cosenza (Italy), or the Université Tolouse Le Mirail (1966-1968), in Tolouse (France) by George Candillis and Alexis Josic. On the other hand, both British designers and faculty members profited from the intense cultural exchange with the United States after World War II, becoming acquainted with the American campus model, which was thriving at the time. Eero Saarinen's proposal for Yale (1960-1962) or Ieoh Ming Pei's State University of New York, Fredonia Campus (1968), among others, were widely published. Funnily enough, a campus arrangement was explicitly avoided in Essex, where the Vice-Chancellor, the architect and the landscape designer had enjoyed long stays overseas; but it was reinterpreted in East Anglia, where at least the Vice-Chancellor had been abroad and it was fully assumed in Sussex, where the most home-bound team was at work.

Merging models

Beyond the overall layout, Michael Brown's experience in America eased the introduction of cutting-edge ideas on ecology and urbanism in Essex's courtyards and its pedestrian spine. Sylvia Crowe could apply in Sussex her modern theories on large-scale and density and Brenda Colvin unfolded an early environmental concern that derived from her profound understanding of the English landscape. Although deeply rooted in the British tradition, landscape designers introduced a state-of-the-art

approach in the new universities' grounds of the 1960s, which resulted in a hybridization of two models: on the one hand, the quadrangle of British tradition, on the other, the campus ideal of American ascent.

In conclusion, the building of the seven British new universities in the 1960s was an opportunity to test new architectural ideas in close connection with the landscape. While architecture played the main role in providing a strong image for these new institutions and their ground-breaking academic programmes, their landscape design became a substantial part of the universities' identity, whose relevance has become more evident as the initial cores have expanded. Even today, the Broad at East Anglia, the courts at Essex and the tree belts at Sussex remain key features of each location and, as such, everything should be done to grant their preservation.

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