



ENGLISH HERITAGE

Education Buildings Selection Guide

Heritage Protection Department

March 2007

Selection Guide

Education Buildings

I INTRODUCTION AND DEFINITIONS

Education stimulated some of the country's finest architecture, ranging from the medieval universities to post-war primary schools. Although some schools are so modest that they are easily overlooked, many more are striking local landmarks designed to inculcate pride in learning. At times, such as the years after World War II, it was school building which earned Britain the greatest international acclaim, and its universities contain some of the best works of the leading architects of the day. With national programmes of renewal, schools especially are vulnerable to conversion and demolition and there is widespread public interest in the future of these distinctive historic buildings. For many, schools are formative buildings and much valued elements of the public realm. They are an emotive category, which makes proper assessment all the more important.

2 SPECIAL CONSIDERATIONS WHEN SELECTING EDUCATIONAL BUILDINGS FOR DESIGNATION

Large numbers of schools survive and rigorous selection is required when assessing them for designation. Although from the later nineteenth century their plans became increasingly standardised across the country, some school boards and (later) local authorities wanted to build impressive structures that proclaimed the hopes that were placed in education as a force for social improvement. Architects accordingly provided signature features, such as impressive massing, decorative elaboration and innovative planning, that raise them well above the average. In some exceptional cases this might mean listing almost all the surviving schools of the most progressive bodies or councils, but more often than not it should be possible to make a careful selection of the best or, in some cases, the most typical, local examples. Schools are often, along with churches, notable landmarks and were designed as such: their contribution to the character of historic neighbourhoods should be taken into account. University campuses or other areas where there is a concentration of educational buildings of mixed quality, might be amenable to other forms, or a combination, of designation such as conservation areas or registered landscapes.

3 HISTORY BY BUILDING TYPE

A Schools

Before 1800 The earliest schools were monastic but some parish clergy taught younger boys, usually in the parish church. By the later Middle Ages, wealthy patrons endowed schools: there were more than eighty in England on the eve of the Reformation. Survivals are fragmentary in the main but include Bishop Wykeham's impressive Winchester College (1382) and the Countess of Suffolk's school at Ewelme (Oxon., 1437); royal foundations include Eton (Berks., 1440). The larger schools were modelled on Oxford and Cambridge colleges; smaller

schools might be one- or two-storey buildings with the schoolmaster's house attached. Post-Reformation schools continued to depend on private philanthropy and ranged widely in style, from the late Gothic of Shrewsbury School (1595-1607, enlarged 1627-30) to the simple classicism of Sir John Moore's School, Appleby, Leicestershire, (1693-7). The early-eighteenth century saw the building of the first Blue Coat charitable schools in urban areas, and a few village schools on the estates of wealthy landowners, often associated with almshouses. Later that century, dissenting schools appear: these were usually small halls of little architectural pretension, placed close to, abutting or even underneath a chapel, but also included large and impressive buildings such as the Society of Friends Boarding School (1776) at Ackworth, near Wakefield.

1800-1870 (See also under 'Public Schools' below.) The rate of school building exploded during this period, fuelled by competition between the dissenting and Anglican churches. Two school-building bodies were particularly prominent: the nonconformist Society for Promoting the Lancasterian System for the Education of the Poor (set up in 1808, and in 1814 renamed as the British and Foreign School Society), followed swiftly by the Church of England's National Society for Promoting Religious Education, set up in 1811. They gave their name to the two most common late Georgian kinds of schools: the British schools and the National schools. Joseph Lancaster (1778-1838) was an influential Quaker educationalist who created the 'monitor' system, whereby one teacher would supervise young assistants who each taught a small group; this prevailed until about 1880. Limited budgets kept schools modest and they rarely comprised more than a single classroom, or at the most two or three schoolrooms where numbers warranted segregation between boys, girls and infants. Schools with individual classrooms and a central assembly hall are rare; the British School at Hitchin, Hertfordshire (now a museum), is a special survival.

Educational provision was patchy. A few benevolent industrialists set up schools for the children they employed. These buildings are rare, and so utilitarian that they are hard to identify. The first purpose-built Sunday school was erected in Hoxton, London Borough of Hackney, by the Methodist church in 1802 to teach children to read. Under the 1834 Poor Law Amendment Act, special boarding schools, sometimes known as industrial schools or 'barrack homes', were built by larger workhouse unions to prepare children for domestic service or a useful trade. Such fragments of these buildings as survive are also rare but can be impressive, e.g., the administrative centrepiece of the former Central London District School in Hanwell, (formerly Middlesex, now London Borough of Ealing, 1856-7).

1870-1914 Politicians first tackled public school reform to improve the quality of public administration (see below) and then turned their attention to elementary education to create a numerate and literate workforce. The passing of the 1867 Reform Bill and its extension of universal male suffrage made it a priority 'to educate our masters', referring to the population at large. The 1870 Education Act, steered by the Liberal MP William Forster (and hence known as the Forster Education Act) permitted school boards to finance school building from a local rate and elementary schooling became compulsory in 1880. The voluntary societies redoubled their efforts to provide schools to thwart the need for a board. There was a massive expansion in denominational school building, board schools being concentrated in the larger cities where provision was worst. Arthur Conan Doyle's 1894 story *The Naval Treaty* included the celebrated summary of their aspirations: 'Lighthouses my boy! Beacons of the future! Capsules, with hundreds of bright little seeds in each, out of which will spring the wiser, better England of

the future.' Survival of early Board Schools is uneven, being poor in Manchester, but very good in Sheffield, Birmingham and parts of London.

While funding was always an issue, the best Board Schools display architectural ambition, and made their mark on the street scene through picturesque compositions, careful detailing and the sparing deployment of decoration. Design practice varied. Some boards did not employ an architect; others made permanent appointments or held competitions. The resulting designs show a striking variety of styles and quality. Some architects produced exceptional buildings, e.g., the fifteen by Innocent and Brown in Sheffield (with their distinctive arched 'play-sheds' where children could exercise in bad weather), or the 48 by Martin and Chamberlain in Birmingham (with their patent 'plenum' or forced air heating systems). This gradual specialisation by particular firms together with the publication of designs led to some standardisation, but it was the School Board for London, the first to be founded under the 1870 Act, that proved to be the most influential. Its architect, E. R. Robson, pioneered a cheap, secular, alternative to the Gothic style prevalent in the denominational schools; its echoes of the Queen Anne style placed it near the forefront of fashionable architecture. His 1874 book *School Architecture* was highly influential. From Robson's office emerged the standard Board School plan, with a central assembly hall and classrooms to three sides. Where space was limited infants, girls and boys were each accommodated in a hall and classrooms on three successive floors. Rooftop playgrounds were provided on particularly cramped sites. This type dominated London from 1880, and was widely adopted on urban sites elsewhere. Some 3,400 pre-1919 primary schools are currently (2006) estimated to survive.

Secondary Schools From their beginnings in the late nineteenth century, state secondary schools were sited close to the centres of cities and towns so that they could serve a wide area. They were built on a larger scale, with smaller classrooms and specialist facilities such as a gymnasium, machine room or chemical and physical laboratories. County councils, created in 1889, provided the impetus towards further specialist training for industry and they established higher education colleges, polytechnics, and 'monotechnics' (relating to a single specific trade). The 1902 Education Act transferred responsibility for school boards and the voluntary denominational schools to county and borough councils. The new authorities rapidly expanded secondary education from 272 schools in 1902 to a thousand by 1912, a process aided by the fall in birth rate that stemmed demand for elementary schools.

Design The simple Georgian style used for schools until the 1820s was replaced first by the Tudor, and then by more elaborate Gothic designs, reflecting the religious drivers behind much early nineteenth-century education. E.R. Robson favoured a light and airy Queen Anne revival for London board schools, which was widely emulated. By the Edwardian period the neo-Georgian style was seen by some authorities to possess the dignity and timelessness appropriate to a secondary school, and it was also the style being adopted by the older foundations, which the local authorities sought to emulate. By the turn of the century too, school design had often become more austere and formulaic: funds were often limited. Some, exceptionally, experimented with Art Nouveau motifs. As education moved away from instruction by rote, so the more ambitious authorities began to consider school buildings from the point of view of the child with issues of health and mental stimulation to the fore. A pioneer in the building of well-ventilated and less utilitarian schools was George Widdows, architect to Derbyshire Education Committee from 1904. His innovative designs, in a neo-vernacular style, with cross ventilation and a 'marching corridor' for exercise, proved influential. Experimental institutions are rare, e.g., open air schools for delicate children following a strict

regime of lessons, exercise, healthy meals and afternoon rest spent largely out of doors: these featured unglazed huts resembling band stands, with a larger unit serving as a dining and afternoon rest hall.

1914-45 The 1918 Education Act raised the school leaving age to fourteen but failed to provide sufficient funding. The period was dominated by the building of grammar and secondary schools often modelled, if space and funds permitted, on public schools with a collegiate system built around quadrangles and with playing fields. Economies were sought and some authorities turned in the 1930s to steel framing, which also provided greater flexibility. Here, neo-Georgian was jettisoned in favour of more modernist designs. Long horizontal glazing for classrooms was countered by cubic massing and offset by the vertical accent of glazed stair towers. These new ideas came together in the nursery movement with informal, lightweight, highly-glazed buildings intended to stimulate young minds. Architectural competitions encouraged innovation in the use of materials (especially prefabricated systems used for the first time in 1936), lighting, and ventilation. These, together with the concept of village colleges that served also as community centres (e.g., those in Cambridgeshire including Impingham, 1939 by Walter Gropius), paved the way for major advances after the 1939-45 war.

Post-War Schools Twenty per cent of schools in England and Wales were destroyed or badly damaged in the war. Britain's birth rate, which had fallen since 1901, rose sharply between 1942 and 1948, and again from the early 1950s. The New Towns alone needed ten new schools every year. Building on pre-war precedents and wartime technology, standardised prefabricated elements became the norm to meet demand and keep within exacting cost limits: the 'Hertfordshire system' is the best known but there were several others. Windows in *primary schools* were made low so that the smallest child could see out; there were areas for paints and glue; little desks, chairs, sinks, toilets, and coat pegs were purpose-designed; and bright colour schemes and murals gave stimulus and pleasure.

The first prefabricated systems were only suited to single-storey building, and were inappropriate for *large secondary schools*. In the 1950s more flexible and resilient light steel framing systems, sometimes clad with timber and tile to give a vernacular evolved, headed by CLASP and used in hundreds of schools. Education authorities formed building consortia to achieve efficiencies from this standardisation. R. A. Butler's Education Act of 1944 organised secondary education into separate grammar, technical and modern schools. A challenge for new secondary schools was the size required to sustain a lively sixth form, and the Ministry of Education required that comprehensives should be for 2,000 children. Problems of scale were mitigated by creating smaller units, e.g., 'houses' in Coventry, each creating a close-knit environment for a cross-section of children; and lower, middle and senior schools in Birmingham. Elsewhere, vast single blocks were built, sometimes receiving dramatic architectural treatment, as with Alison and Peter Smithson's Hunstanton School, Norfolk (1949), which exploited the Bauhaus idiom for the 'modern' school.

The first authority to challenge the established separation of primary and secondary schooling was Leicestershire. From the early 1960s plans became more flexible and centralised with open teaching areas grouped round a library or resource centre: architects worked increasingly closely with educationalists as traditional classroom-based approaches to instruction began to be amended. Some schools were grouped with sports centres and reflect a growing ambition to create a more adult, college-like environment for older children.

Public and Preparatory Schools Public schools rose from charitable foundations to become elite educational institutions. They were private, in that they were fee-paying and not state-provided, but were 'public' in that they were open to all, irrespective of religious affiliation or location. The mid-Victorian state, conscious of its imperial mission, sought to improve the calibre of public administration and hone the country's competitive edge, Haileybury in Hertfordshire had been set up as early as 1806 as the East India College; Wellington College was opened in Berkshire in 1859 as the national (institutional) memorial to the Duke of Wellington. The Public Schools Act (1868) placed certain long-established schools – Charterhouse, Eton, Harrow, Merchant Taylors', Rugby, Shrewsbury, St Paul's, Westminster and Winchester - on a new charitable footing. Others were boosted by the Endowed Schools Act (1869). This led to considerable expansion of premises, sometimes on more spacious new rural or suburban sites. Examples include Dulwich College (1866-70), Lancing College, Sussex (1854-68), Taunton (1867-70) and Shrewsbury (1900). Many of the older establishments contain buildings of high architectural significance, such as the medieval ranges at Eton and Winchester, or Lord Burlington's work at Westminster. From the High Victorian period onwards, they were built on an increasingly monumental scale. Chapels became particularly important elements to public schools: that at Lancing, by R.H. Carpenter (finished in 1911), was surpassed in height only by Westminster Abbey and York Minster. Well endowed institutions could commission leading architects such as Butterfield at Rugby (1860) and Herbert Baker at Harrow (1921) to lavish attention on specialist and sports buildings. Broadly speaking, however, with the exception of dormitories (most public schools were boarding), the requirements of state and public schools were similar; it is the level of investment on buildings and their architectural detailing that mark the latter out. War memorials can further enrich the ensembles, as at Winchester or Clifton. After c.1900 and throughout the interwar period most public schools adopted restrained and traditional styles, and these became a model for the more ambitious local authorities. Only the modern-style additions at Dartington (Devon) buck this trend. The immediate post-war period, with its constant threat of abolition, saw a continued commitment to traditional architecture, such as the additions at Repton School (Derby.) designed by Marshall Sisson in the 1950s; other schools, such as Bryanston in Dorset, have consistently commissioned eminent architectural practices to add to their facilities, from the Architects' Co-Partnership in the 1950s to CZWG in the 1980s.

B Universities and other higher education establishments

Before 1800 Universities in England before 1800 can be summed up in one word: Oxbridge. Their early buildings will be either listed or listable unless there has been exceptional degradation.

1800-1945 Oxford and Cambridge expanded considerably during the nineteenth century and much was built, mostly to of a high standard, which means that few important buildings are not listed. The Greek Revival was rivalled by the Gothic and Tudor revivals early in the nineteenth century, to be supplanted by more eclectic historical revivalist styles later on. Colleges continued to dominate teaching. Bespoke faculty buildings were few: science buildings even fewer, and made a late appearance. Outside Oxbridge, there was gradual growth and diversification. As with schools, so with colleges: religious diversity provided a stimulus to higher education foundations. University College, London (originally the University of London) was opened in 1828 as a non-Anglican place of learning; the Church of England opened King's

College as a riposte in the same year. Both occupied fine neo-classical premises, designed by Wilkins and Smirke respectively. The University of London was founded in 1836 as an umbrella examining institution bringing together the city's many autonomous colleges and its medical schools (mostly subsumed in teaching hospitals, for which see the **Health and Welfare** selection guide). Other colleges such as the Royal Naval School (1843-5 later Goldsmiths') were later incorporated into the university. Outside London, colleges were established and from these sprang the so-called 'red brick' universities: Manchester (1851), Leeds and Nottingham (1874), Bristol (1876), Sheffield (1879), Birmingham (1880), Liverpool (1881) and Reading (1892). These offered evening and teachers' classes as their core activities but degrees were offered through extension courses, usually granting London qualifications but occasionally, as at Reading and Nottingham, those of Oxford or Cambridge. 'University College' and full university status came only gradually.

Many of these establishments grew out of medical schools and mechanics' institutions, and few of these Victorian universities exhibit great architectural coherence although there are exceptional individual buildings among them. They grew accretively and developed a sense of being a town within a town. All the civic universities were characterised by a prominent central building; around these arose buildings for more specific departments, usually less grandiose but sometimes of intrinsic interest. Private benefactors could make a major impact on a campus, as did the Cadbury's at Birmingham, Boots at Nottingham and Wills at Bristol, and commission notable works from leading architects. Halls of residence, which sometimes incorporate earlier villas, are an important specialist building type. Reading led the way, opening its first hall in 1908, and the practice pioneered there of single-study bedrooms, with a dining hall, common rooms and small body of tutors offering pastoral care rather than specialist teaching, became a general model. Most early halls of residence were for women, for whom lodgings or 'digs' were widely thought unsuitable. The late Victorian and Edwardian periods saw a growth of specialist higher education buildings for women, ranging from colleges at Oxford, Cambridge and London, to specialist medical schools like the Elizabeth Garrett Anderson Hospital in London. Among the former category, Girton College, Cambridge is the earliest (established 1869); Basil Champneys' buildings for Newnham, Cambridge (1875 onwards) are perhaps the finest.

There was a range of other colleges. A number of *diocesan training colleges* for schoolmasters – two early examples are Culham (Oxon., 1852) and St Luke's Exeter (1852-4) - are collegiate in layout but adorned appropriately with cloisters. Technical subjects were taught in the mechanics' halls and technical colleges, and in London the monotechs and polytechnics (from 1882). Concern at the poor state of young men's physical fitness led some institutions to build sport into the curriculum and provide a gymnasium (as at Woolwich, 1891). *Art schools*, which received state aid from 1841 (in order to improve the quality of design in Britain's manufactures), were often embellished with a rich decorative display, e.g., the terracotta detailing at the School of Science and Art at Weston-Super-Mare (1893) or adopted an avant-garde style as at the Central School of Arts and Crafts College (now the London Institute, 1905-8). Art colleges may contain interesting exhibition space, or as at the Bury School of Arts and Crafts (1891) and many others, top-lit studios and weaving sheds. They can also have particular local resonance, for showing how cities sought to marry the arts and commerce.

University buildings from the earlier twentieth century include some notable additions: Giles Gilbert Scott's Memorial Court for Clare College, Cambridge (1923-34) and his towering University Library there (1931-34) demonstrate a rare monumentality. This tendency reached its climax with Charles Holden's University of London Senate House (1932-37). Percy Morley

Horder's buildings for University College, Nottingham, of the mid 1920s exhibit a gentler, more pastoral approach. Expanding curricula required better facilities, especially for the sciences.

Post-War Regular government spending on university building projects via the University Grants Committee began in the 1940s and the introduction of maintenance grants led to a huge increase in student numbers, which more than doubled between 1961 and 1977. The first wholly new university of the post-war period was Keele, (1950): although unpretentious architecturally, Keele's emphasis on joint courses was influential. Later university buildings experimented with teaching spines where arts and social science disciplines could be taught in combined accommodation. Seven new universities followed: Sussex, York, East Anglia, Essex, Kent, Warwick and Lancaster, and there was expansion both in 'Oxbridge' and in 'red brick' universities.

The first buildings of the 1950s, generally for science and engineering or halls of residence, mostly adopted a bland neo-Georgian style, but there were distinguished exceptions found, for instance, in the seventeenth-century revival and gentle modernism of Durham or the traditional styles used for the halls of residence at Nottingham. From the late 1950s a stronger modernism appeared. Oxford and Cambridge vied with each other in the building of new colleges, or the extension of old ones, and had the money to give the best post-war architects the opportunity to build some of their finest work. Cambridge had a School of Architecture, and therefore in-house designers (notably David Roberts, Leslie Martin and Colin St John Wilson) but it also held competitions, e.g., for the new arts buildings (from 1952, by Casson and Conder) and the prestigious Churchill College (1958 on, by Richard Sheppard, Robson and Partners). Oxford, with no architecture school to advise it, looked further afield, most notably to the Danish Arne Jacobsen for the new St Catherine's College. Young British talent was also encouraged (e.g., the Architects' Co-Partnership at St John's; Powell and Moya at Brasenose; Howell, Killick, Partridge and Amis at St Anne's). These practices were to dominate university building in the 1960s, along with more assertive talents such as Stirling and Gowan; Chamberlin, Powell and Bon; and Denys Lasdun. Stirling and Gowan engineering building at Leicester of 1959-63 embodies the rejection of stylistic caution and the sheer boldness of vision that characterises the best university buildings of the period. Many institutions turned for master-planning advice to Leslie Martin, J. R. Richards or Hugh Casson, leading to a greater uniformity in post-war university building than is found previously, save in part at Liverpool which had its own strong architectural school.

The new universities were, effectively, new towns. Sussex University (1960s, Basil Spence) was an integrated complex on a rural site. It set a pattern that was developed at the University of East Anglia (from 1962-3, Denys Lasdun), containing the first residential blocks designed as flats (the 'ziggurats') and reached its ultimate development at the Essex, intended for 20,000 students where the teaching buildings were set on a raised deck and surrounded by student flats. Sussex's Arts Building also pioneered the concept of placing arts and social science subjects with similar teaching needs in one building with the aim of cross-fertilising ideas. York, Kent and Lancaster secured a still closer integration of residential and teaching spaces.

As in earlier periods, higher and further education colleges have often been regarded as poor relations to the universities, yet there are some notable buildings, ranging from H. S. Goodhart-Rendel's idiosyncratic and historicist Westminster College, near Victoria Station (1952-3) to the Hollings Building at Manchester Metropolitan University (1957-60, Leonard Howitt) with its hyperbolic paraboloid frame that gives it the nickname 'The Toast-rack'.

4 SPECIAL INTEREST: SUMMARY OF SELECTION CRITERIA

The major issues which will determine whether a building of this category will be designated may be summarised thus:

Schools

- **Pre-1800 Schools** will normally be listable if they survive in anything like their original form.
- **1800-1870** Greater selection is needed -intactness and architectural quality are the key criteria. In many areas their relative scarcity should be accorded respect.
- **1870-1945** 1870 is a seminal date with the introduction of school boards and substantial state funding. Preservation and intactness will be relevant, alongside architectural interest, planning, earliness, and the rarity of the type of school in question.
- **Post-war** those examples which possess architectural quality, particularly of an innovative sort; those with significant plan forms and decoration; and those which best demonstrate the use of off-the-shelf construction systems.

Universities

- Assess individual buildings on their own merits, concentrating on architectural quality; post-war campuses will warrant a holistic approach that takes in the whole site.

5 SPECIAL INTEREST

Schools

Schools before 1870 School buildings from before 1840 that survive in their original form will normally be protected already, sometimes at high grades. After this date schools have to be well preserved and of good quality to be listed. Some innovatory examples will be eligible for high grades, as will be the most architecturally sophisticated, as well as those designed by leading architects. Some of the rarest survivals can be very humble, especially pauper and factory schools, and can be easily overlooked because they are plain and have no distinctive plan form. Their very humility lends them significance, and they should not be judged against grander schools.

1870-1914 External architectural quality is usually the most striking feature of schools of this period, and is a fundamental criterion. Some School Boards (especially in the major cities) consistently produced designs of great interest but a school does not have to attain these high standards for designation to be warranted: regard should be given to the local context. Interiors matter too: fixtures were generally plain and most plans were formulaic and increasingly standardised: exceptions are thus of interest. Completeness is most important and checks should be made to assess levels of alteration. Losses and ill-proportioned additions can reduce designation-worthiness. Many schools were built piecemeal, and compositions intended to be symmetrical were often not completed. Ancillary structures such as high quality walls, railings, gates and teacher's houses; specialist units such as domestic science blocks; and unusual features

such as covered or rooftop playgrounds and plenum towers will enhance the case for designation.

1914-45 Few schools were built during either world war. After 1918 they tended to be on a much larger scale than previously, with more specialist teaching rooms. The assessment of schools of this date must balance architectural quality with intactness. Design standards could sometimes be high, but could equally veer towards the bland, with many adopting a standardised neo-Georgian idiom. Examples of pioneering modern movement architecture are likely to be small in scale, but they are rare: many are already listed. There were many Dudok-inspired modernist schools built on the cheap in the later 1930s, but only the most boldly massed and complete will be eligible for designation. Detailed internal inspections will reveal the extent of special features (such as panelling in the principal spaces and head teacher's room, of fitted furnishings and the survival of libraries, science laboratories and specialised facilities). For primary schools in particular, an eye should be kept open for features of functional interest, such as evidence of cross-ventilation or some form of open-air planning like fully opening walls, as well as plans that reflect new ideas in child-centred and more creative education. The first nursery schools date from this period. Careful selection is required for open-air and other experimental schools, as their interest is likely to be historical rather than architectural.

Post-war Relatively few post-war schools are listed despite its having been a most innovative period. Strict selection is necessary because so many were built. The main questions to ask are: is it a system-built school that compares well with examples already listed? Or does it use traditional construction in a novel way? Is the planning innovative, e.g., in encouraging constructive play or group working? Is it centred on a library resource or sports facility? Is it enriched with significant art? For secondary schools, are distinctions such as grammar, technical, secondary modern or comprehensive expressed imaginatively in their plans and provision? Is it a major work by a significant architect, or a good example of a work by a progressive authority?

Universities

University buildings will be assessed against criteria of architectural and historic interest. Most of the older university buildings will already be listed, although grading might sometimes warrant revision. Early twentieth-century university buildings will be judged largely on their architectural quality, and intactness may be a factor. Historic interest can also be an issue, as early examples of certain sorts of buildings – such as science laboratories – will have an extra claim to recognition.

Higher education buildings of the post-1945 period, particularly universities, exhibit such variety that general guidelines are of limited value. Many rank among the most exciting buildings of their day, and some are of international importance. These will be listable in their own right as being of outstanding architectural interest. Architectural interest will be determined sometimes by questions of successful functionality, as well as by consideration of design quality. Until the 1960s, campuses developed piecemeal but certain groups of buildings, such as those disposed around the central university administrative and governance block, often including the library, emerge as coherent ensembles of listable quality. Post-war integrated campuses may justify a holistic approach to designation that takes in the entire site.

Buildings become eligible for listing when they reach 30 years of age (or outstanding buildings over ten years old and under threat) are eligible for consideration too. As time passes, more buildings will fall in to these categories and may warrant consideration; it will become necessary to revisit some of the earlier thematic work undertaken in this area.

6 SELECT BIBLIOGRAPHY

Schools

- Dent, H.C., *1870-1970, A Century of Growth in English Education* (1970)
Markus, T.A., *Buildings & Power: Freedom and Control in the Origin of Modern Building Types* (1993)
Robson, E.R., *School Architecture*, (1874; reprinted 1972)
Saint, A., *Towards a Social Architecture* (1987)
SAVE Britain's Heritage, *Beacons of Learning* (1995)
Seabourne, M., *The English School, vol. I, 1370-1870* (1971)
Seabourne, M. and Lowe, R., *The English School, vol. II, 1870-1970* (1977)
Selleck, R.J.W., *English Primary Education and the Progressives, 1914-39* (1972)

Universities

- Argles, M., *South Kensington to Robbins* (1964)
Birks, T., *Building the New Universities* (1972)
Muthesius, S., *The Post-War University: Utopianist Campus and College* (2000)
Perkin, H.J., *New Universities in the United Kingdom* (1969)
Saint, A., 'Technical Education and the Early LCC', in Saint, A. (ed.), *Politics and the People of London* (1989)
Vickery, M.B.V., *Buildings for Bluestockings: The Architecture and Social History of Women's Colleges in Late Victorian England* (1999)

Many universities and colleges have published their histories, which are of great help, particularly for older buildings, while biographies exist on some of the major modern firms, such as James Stirling, Denys Lasdun, HKPA and the Smithsons. For many post-war buildings the best sources remain the architectural journals, indexed by architect and building type at the Royal Institute of British Architects.