INNER LONDON

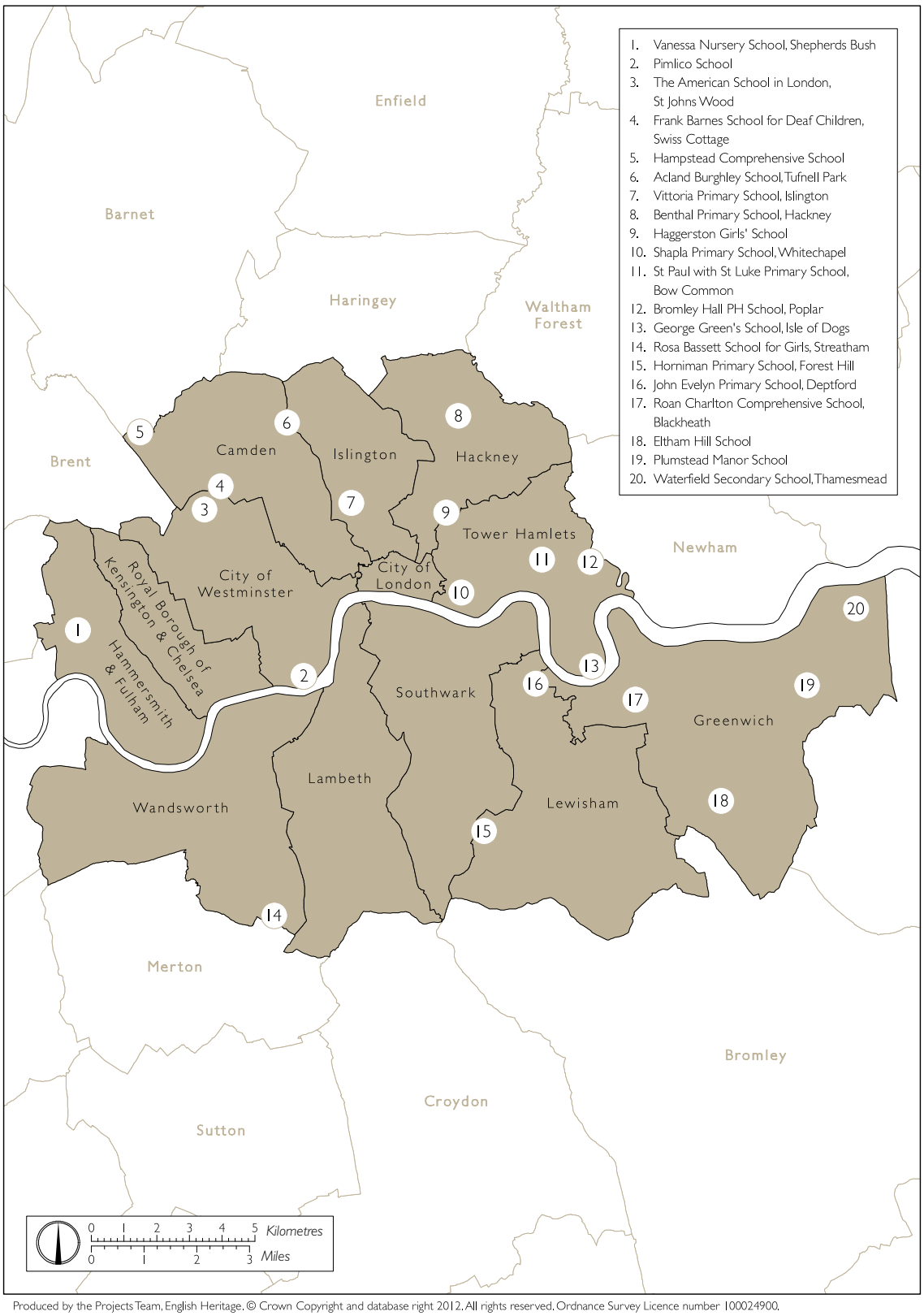

Figure 4.54: Inner London: location of gazetteer entries.

Administration

The Greater London Council (GLC) was established in April 1965 under the London Government Act of 1963. It was the first of a raft of legislation to restructure the machinery of local government and led to the formation, in 1974, of metropolitan counties. To the area formerly administered by the London County Council (LCC) were added 20 large outer boroughs, broadly representing those parts of Middlesex, Surrey, Kent and Essex into which the metropolis sprawled. The area administrated by County Hall grew to 600 square miles accommodating over eight million people. The electoral incentive for the Macmillan administration was to moderate the government of inner-London, a left-wing stronghold, through the inclusion of the prosperous outer suburbs. The Herbert Commission, which from 1957-60 examined local government in the Metropolitan area, was set up by Henry Brooke MP, Minister of Housing and Local Government and Conservative opposition leader of the LCC from 1945-52.[1]

But the reform floundered when it came to education. The Herbert Commission had proposed transferring to the GLC the strategic aspects of educational provision for the whole of the new 'Greater London', with the running and maintenance of the schools devolved to the boroughs.[2] This was as unpopular with the nascent outer-London boroughs, aspirant to full LEA status, as it was with the inner-city parent-teacher associations, who pointed to the freedom of choice and economies of scale possible within an integrated education service.[3] Education Minister David Eccles insisted that the LCC area be kept.[4] As a consequence, the 1963 Act contained divergent provisions for education in inner and outer London. Full control over education was handed to the outer boroughs, whereas the former county of London was devolved, initially on a temporary basis, to a 'special committee', the Inner London Education Authority (ILEA). Through this administrative anomaly, education in the dozen inner-London boroughs continued to be administered by a unitary system of education, as it had been since 1870.

This had a number of consequences for school building. Because of its composition, it was possible for ILEA to have a Labour majority when the GLC had a majority of Conservative members (as occurred in 1970-73 and 1977-81). The tendency of GLC control to oscillate between left and right every electoral term brought about an administrative discontinuity in which long-term educational strategy became difficult and political point-scoring easy. It is tempting to attribute the variety of scale and organisation that ILEA schools exhibit to these shifting political affiliations. Yet ILEA was more powerful and progressive than its LCC predecessor and, thanks to a series of capable Education Officers such as William Houghton, Eric Briault, Peter Newsam, William Stubbs and David Mallen, new pedagogical approaches began to influence the design of schools.[5] Despite the 'arm's length' status of ILEA, it would seem that the contact between schools architects and their powerful client body became more frequent and fruitful after 1965, especially during the critical briefing stages.

Relations with Central Government

The longstanding political friction between County Hall and Whitehall had on rare occasions the potential to transform the educational landscape of London and beyond.[6] More mundane was the distance borne of mutual suspicion and aloofness that stifled fruitful dialogue at both political and technical levels.

A representative episode was the attempt by Schools Division to wrest control of the Ministry of Education Development project that became Eveline Lowe Primary School (pages 110-11). When the Ministry's architects did not see eye to eye with their local authority counterparts, a second site was found, resulting in Vittoria Primary School in Islington. The biggest area of conflict between London and central government was the decision to build large, non-selective comprehensive schools, and the planning strategies subsequently adopted for them. This happened to be London's greatest post-war educational innovation, achieved despite scant technical guidance from the centre.

London schools were criticised by central government on several grounds. First, there was height: since the 1890s, London had flouted the preference consistently voiced by central government for single-storey schools, on the grounds of large school rolls and sites smaller than the regulation area. The Ministry of Education opposed the London preference for tight, compact planning, sometimes ranged around courts. Equally unpopular with the Ministry was the model developed for LCC secondaries, in which teaching slabs of anything between four and nine storeys were supplemented by separate blocks for the communal and specialist accommodation—gym, hall, dining and workshops (fig. 4.55).[7] Lastly, the diversity of planning strategies adopted for the London comprehensive schools was seen as a weakness rather than a strength. These were seen by the Ministry of Education in Curzon Street as a muddled and inconsistent lot, attitudes perpetuated in subsequent histories.[8]

Figure 4.55: The teaching block at Haggerston Girls' School, LB Hackney; Ernö Goldfinger, 1964-67. The school was listed at grade II in 2004. Photograph by James O. Davies – English Heritage; DP101195.

London architects could be equally sceptical towards their counterparts at Curzon Street who, it was imputed, were blind to the realities of undersize sites, the restrictive London Building Acts and the high cost of labour and materials in the capital.[9] The informal yet complex secondary schools designed by the Ministry's Development Group in the early 1950s were deemed by one LCC architect to be schools 'for the Garden City, the form was organic and of little application for London'.[10] Few of the prefabricated systems promoted by central government were developed with multi-storey buildings in mind.

Decentralised Design in the LCC/GLC

The scale and density of London, and the significant amount of bomb damage it had suffered in the 1939-45 war, demanded a post-war reconstruction and re-planning programme unparalleled elsewhere in England. The LCC Architect's Department recruited on a grand scale, reaching a peak of *c.*3,000 staff in 1956, when it was said to be the largest such office in the world.[11] In spring 1965 there were 105 architects in Schools Division, bolstered by a further 35 in the Voluntary Schools Section and no less than 267 technical staff in Improvements and Maintenance.[12] To accomplish these tasks required not only a small army of architects, engineers, quantity surveyors and administrators but a unique way of organising them. The civil service model of top-down decision-making, middle management and upwards reporting was unworkable given the unparalleled scale of the annual housing and schools programmes alone.

The LCC found the answer in the form of the group system, where large divisions were broken into groups of architects each headed by a group leader and deputy. Such a structure recalled the influential unit system introduced at the Architectural Association in 1935 by E.A.A. Rowse. Elain Harwood has established that it was John Henry Forshaw, Architect to the LCC 1941-45, who took the first steps of reorganising the LCC Architect's Department into groups of twelve to sixteen staff managed by a senior architect.[13] The LCC group structure was consolidated by Forshaw's successors Robert Matthew (1946-53) and Leslie Martin (1953-56) and retained by subsequent Architects.[14] Many other public offices followed suit.

This allowed a decentralisation and liberalisation of architecture in London government which remained intact, in principle at least, until the dissolution of ILEA in 1990. The reform encompassed all sections of the Architect's Department, and its implications on school design are considered here as a single case in point. By 1965, Schools Division comprised nine groups, each eleven-strong; an additional group had the responsibilities of compiling a library of technical specifications and issuing practice notes.[15] 'The atmosphere was one of creative inefficiency', Andrew Saint has written.[16] Young graduates were immediately assigned their own jobs and enjoyed an unheard-of degree of autonomy.[17] The design opportunities proved especially attractive to an ambitious generation born in the 1920s and impatient to make up experience and training lost to war service. Job architects were increasingly credited when a scheme was published, a small but telling privilege and one not extended to engineers, quantity surveyors and the other allied professions.[18] But collaboration was no less important: Peter Jones, Education Architect 1974-82 and GLC Director of Architecture 1979-86, recalls that 'the whole idea was to make it feel like a small practice'.[19]

Divisional heads and group leaders were afforded the latitude to fashion their own roles. Those in senior posts could facilitate ambitious schemes by shielding them from interference from management level. Michael Powell, schools' architect 1956-71, is recalled for his 'sympathy and unfailing encouragement to his job architects [which] created the atmosphere and gave the freedom in which individual expression became possible'.[20] Powell's tenure straddled the LCC/GLC transition, ensuring that the 'architectural tradition' of London schools continued uninterrupted. The more design-minded of the senior staff found time to pursue their own high-profile projects, supported by a clutch of job assistants.

Such an administrative structure was unusual in local government and could give rise to duplication of effort, conflict and factionalism. Groups and divisions developed distinctive architectural vocabularies in response to building types. By 1960 the LCC had acquired an international reputation both for the diversity and quality of its output and as a clearing house for the brightest British architects. In these years Schools Division became identified with a uncompromising, Corbusian architecture of reinforced concrete, such as the projects designed by the young graduates Ron Herron and Warren Chalk who went on to join the Archigram group.[21] Yet by this time the attraction of the LCC as a finishing school was on the wane, checked by the attractions of private practice (fig. 4.56).

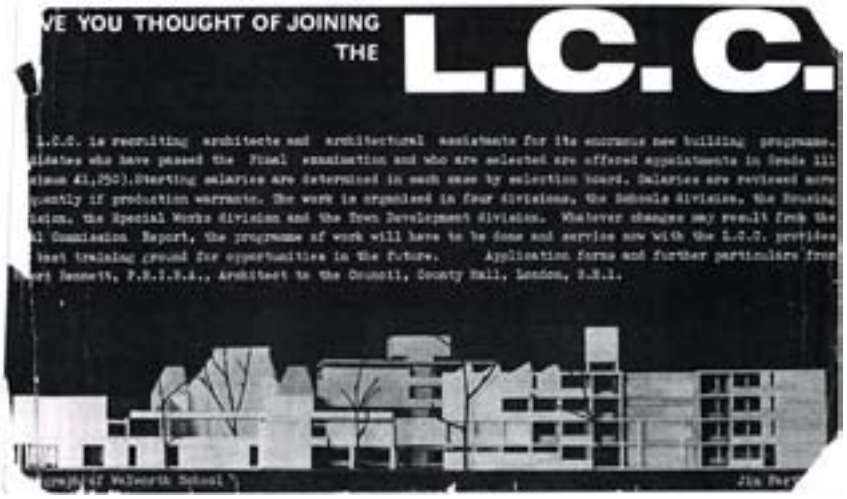

Figure 4.56: 'Have you thought of joining the LCC?' A recruiting ad in the second issue of Archigram *magazine, 1962, illustrated by a model of Walworth Secondary School. Archigram founders Ron Herron and Warren Chalk both worked in the LCC Schools Division in the 1950s. © Archigram Archives.*

The LCC/GLC as Patron

The LCC had employed private architects for a few 'one offs' before 1939, often to seek fresh answers to a particular challenge of design.[22] The design of much housing was contracted out in the late 1940s, and the policy became more widespread with the arrival of Deputy Architect Leslie Martin in 1949. Schools Division drew up a panel of approved private architects so that the proposed building expansion could be managed without fluctuations in the departmental staff or their workload.[23] Many of the approved architects were Michael Powell's contemporaries at the pre-war Architectural Association, now the elite of private practice, and that of his young brother Philip.[24]

Primary and special schools	*Borough*	*Date*	*Architects*
Greenside	H&F	1950-51	Ernö Goldfinger
Brandlehow	Wandsworth	1950-51	Ernö Goldfinger
Cherry Orchard	Greenwich	1950-51	Denis Clarke Hall
Susan Lawrence	Tower Ham.	1950-52	Yorke, Rosenberg & Mardall
Elizabeth Lansbury	Tower Ham.	1950-52	Yorke, Rosenberg & Mardall
Phoenix	Tower Ham.	1951-52	Farquharson & McMorran
Joseph Tritton †	Wandsworth	*c.*1953	Burnet Tait and Partners
Hallfield School	Westminster	1953-55	Drake & Lasdun
Bousfield	K&C	1954-56	Chamberlin, Powell & Bon
Fairlawn	Lewisham	1955-57	Peter Moro & Michael Mellish
Ashmount	Islington	1955-57	H T Cadbury-Brown
Holly Court †	Camden	*c.*1960	Stephen Gardiner
Brunswick Park (hall)	Southwark	1961-62	Stirling & Gowan
Friars Primary School	Southwark	*c.*1961-64	Eric Lyons & Partners
Albion	Southwark	*c.*1964	Eric Lyons & Partners
Johanna	Lambeth	*c.*1966	Renton Howard Wood Associates
Hugh Myddelton	Islington	1967-68	Julian Sofaer
Berger Primary †	Hackney	1965-69	Scherrer & Hicks
Elm Court (Deaf) †	Lambeth	1966-68	Fry, Drew and Partners
Horniman	Lewisham	*c.*1972	Michael Manser Associates
Ashburnham	K&C	*c.*1974	Eric Lyons & Partners
Aspen House (adns)	Lambeth	*c.*1978	Stillman & Eastwick-Field
Secondary Schools			
Kidbrooke	Greenwich	1951-54	Slater, Uren & Pike
Dick Sheppard †	Lambeth	1950-55	Yorke, Rosenberg & Mardall
Mayfield Girls'	Wandsworth	1952-56	Powell & Moya
Sydenham (adns)	Lewisham	1952-56	Basil Spence
Samuel Pepys (extns)	Lewisham	*c.*1956	Gollins, Melvin, Ward & Partners
Hurlingham Girls'	H&F	*c.*1956	Sheppard Robson & Partners
Warwick Park	Southwark	1956-8	Lyons, Israel & Ellis
Risinghill †	Islington	1957-60	Architects' Co-Partnership
Geoffrey Chaucer	Southwark	1958-60	Chamberlin, Powell & Bon
Malory †	Bromley[25]	*c.*1958	Bridgewater & Shepheard
Brooke House	Hackney	*c.*1960	Armstrong & MacManus
Lilian Baylis	Lambeth	1960-64	Architects' Co-Partnership
Rutherford	Westminster	1960-61	Leonard Manasseh & Partners
Islington Green †	Islington	*c.*1964	Scherrer & Hicks
Acland Burghley	Camden	1963-66	Howell, Killick, Partridge and Amis
Haggerston Girls'	Hackney	1964-67	Ernö Goldfinger
Henry Thornton	Lambeth	1964-69	Farmer & Dark
St Paul's Way	Tower Ham.	1964-66	C. H. Elsom
Rosa Bassett Girls' (extns)	Wandsworth	1965-67	Trevor Dannatt & Partners
Battersea Park	Wandsworth	1965-69	Shepheard & Epstein
Hampstead	Camden	*c.*1966	Stillman and Eastwick-Field
Plumstead Manor (adns)	Greenwich	1966-73	Powell & Moya
Norwood	Lambeth	1967-72	James Cubitt & Partners
Highbury Grove	Islington	*c.*1967	James Cubitt & Partners
Stoke Newington	Hackney	1967-70	Stillman & Eastwick-Field
Eltham Hill (adns) †	Greenwich	*c.*1969	Trevor Dannatt & Partners

Table 4.3: A selection of maintained London schools commissioned to private architectural practices. Bold type indicates an entry in the gazetteer below. Demolished schools, where known, are shown with a dagger symbol (†). Post-1965 boroughs are given for consistency. The word 'school' in names is omitted for brevity.

Figure 4.57: Stirling & Gowan's assembly hall at Brunswick Park School. Built in 1961-62; listed at grade II in 2011. © Elain Harwood.

Figure 4.58: North elevation of Pimlico School, City of Westminster; LCC/GLC Architect's Department, 1967-70.Photograph by James O. Davies – English Heritage; DP059395.

Former GLC architects recall a healthy climate of competition, a source of innovation and experiment, along with an envy of their greater budgets and comparative lack of bureaucracy.[26] But what private practices and GLC architects had in common was a preference for a tougher, place-making architecture that addressed its urban environment (fig. 4.57). As the birth rate fell, the practice of 'outsourcing' was scaled down under the GLC, who preferred to keep the flagship comprehensives in-house and derive new ideas from a series of experimental projects such as **Vittoria Primary School**, **Pimlico School** (fig. 4.58) and **Waterfield Secondary School** in Thamesmead. Here, it was reported in *Official Architecture and Planning*, 'all established premises and preconceptions are ignored and the design and philosophy are begun from scratch'.[27]

Primary and Special schools: Alternative Traditions

In the 1940s, in response to the desperate need for school places and a shortage of bricks, the LCC Architect's Department set in train two emergency programmes of primary schools, both based on a prefabricated steel frame. In April 1947 the Council approved a 'transitional' programme for rebuilding eleven war-damaged schools to a common system of construction and 'bay' plan. The group were erected by a single contractor but their hefty steel frame proved slow and costly to build. With the imposition of cost limits in 1949, the Department turned to the Hills 8'3" system,

as adapted by Llewelyn Davies and John Weeks, and further adapted it to go to two storeys.[28] Of the seventeen Hills schools built between 1950 and 1954 the most celebrated is perhaps the Susan Lawrence School, where designers Yorke, Rosenberg and Mardall clad the Hills frame with a mixture of concrete panels, brick and stone. Elsewhere, the staggered plan of the Heathmere School, Roehampton of 1950-53 owes much to the Hertfordshire primaries.[29]

Many subsequent London primaries were based on the 'hen and chicks' model, adopted at Hertfordshire around 1949, in which single or paired classrooms were grouped loosely around a central hall (pages 32-33). This plan formed the basis of innumerable architectural treatments.[30] But the more the classroom unit was isolated and detached, the more expensive it tended to be to build and the most children and teachers tended to remain in a single space. If 'hen and chicks' had an ancestor, it was the open-air schools, in which London was a pioneer.[31] Charlton Park Open-air School, LB Greenwich of 1929 was a representative albeit late example, planned in separate blocks with groups of square classroom pavilions leading from a rest and central dining shed. Its *c.*1966 replacement, a special school for the physically handicapped, tellingly replicated the layout with its clusters of four classrooms linked to a hall via covered walkways (fig. 4.59).[32]

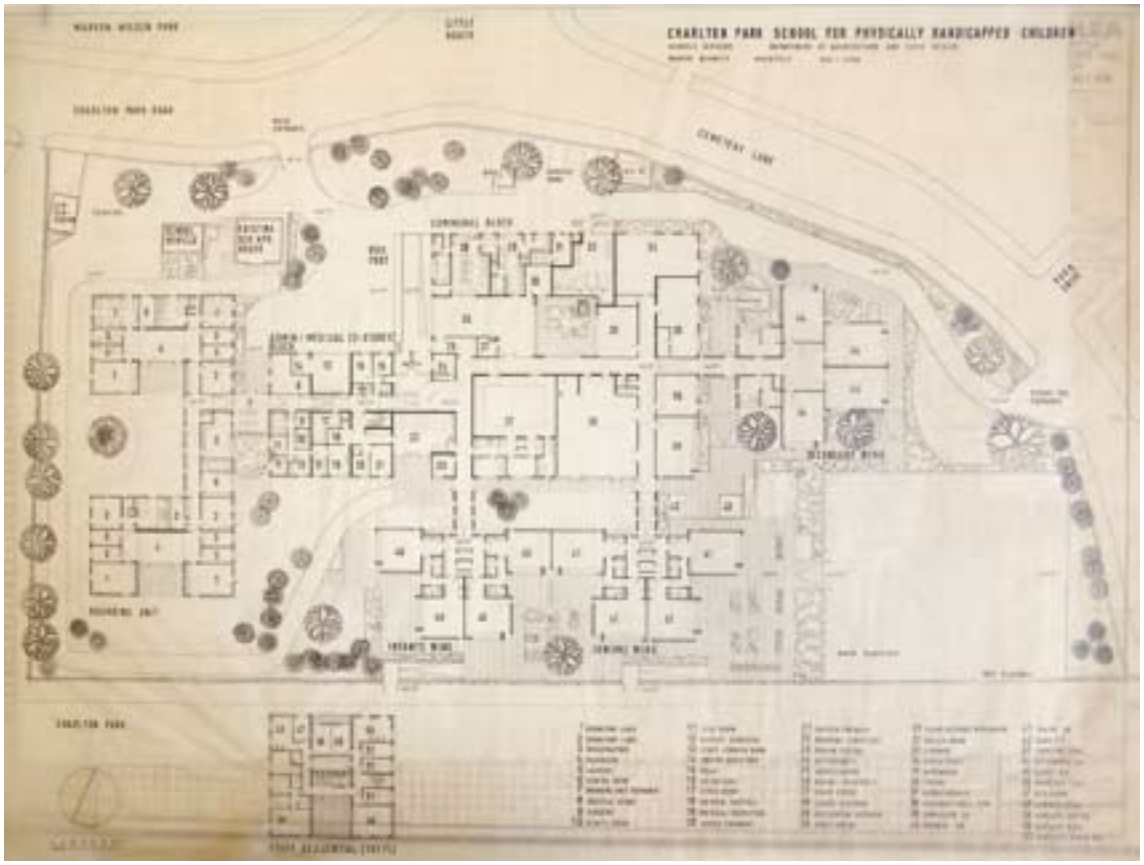

Figure 4.59: Laurie Pestell's design for the Charlton Park School for Physically Handicapped Children is based on the layout of the 1929 open-air school it replaced. City of London, London Metropolitan Archives; LMA:ILEA/DBPS/AR/01/153.

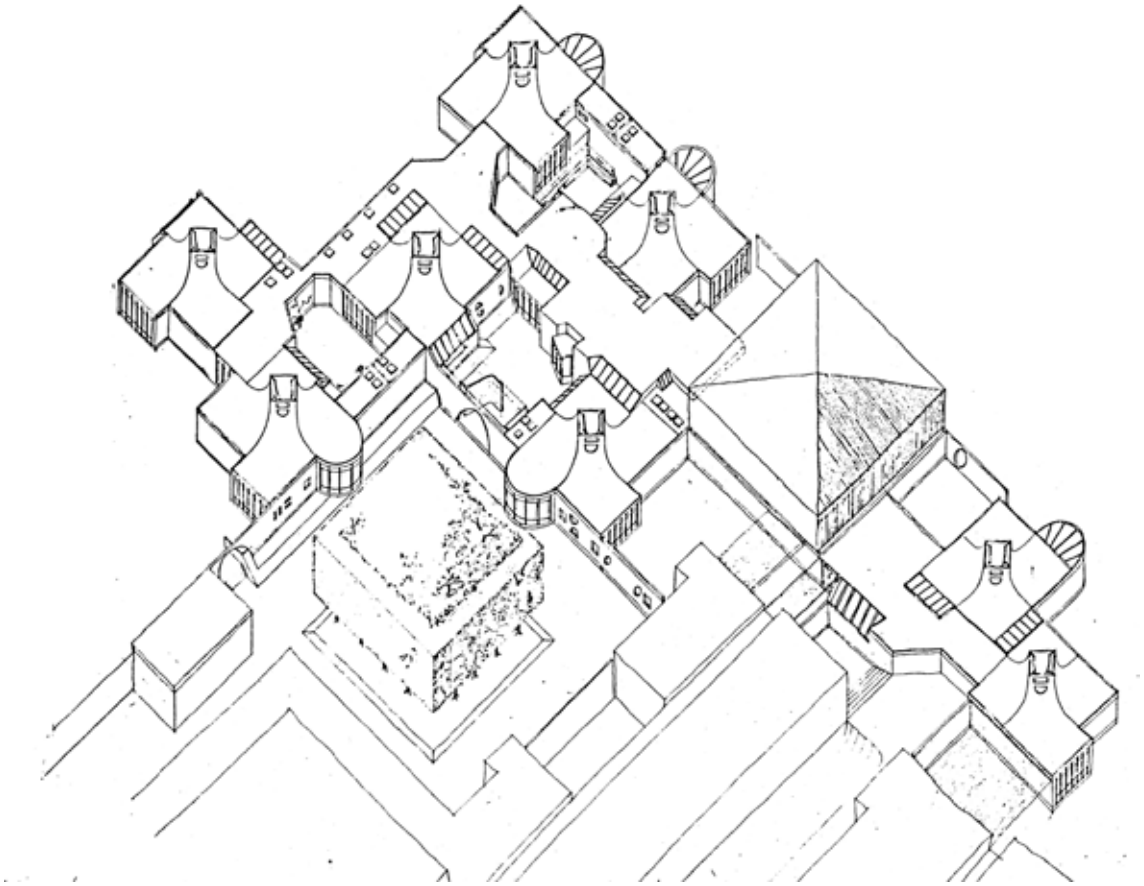

Figure 4.60: Bird's eye view of Benthal Primary School, LB Hackney; GLC Architect's Department, 1966-67. Drawing by Paul Maas, kindly supplied by Liz Robinson.

But in London elevations were at least as important as plans. As the 1960s wore on, alternatives were sought to the spindly, curtain-walled boxes of the previous decade. The Schools Division response to the perceived repetitiveness and homogeneity of much contemporary school building took the form of a small group of individual, humane and expressive primary and special schools (table 4.4). They parallel the contemporary

Figure 4.61: A 1969 photograph of Bromley Hall School: a pair of folding doors open up the library to its adjacent court. The GLC's in-house photographers routinely visited new schools in their first months of occupation. City of London, London Metropolitan Archives; SC/PHL/02/0438-61.

transition in London housing to the intricate, low-rise high-density mode pioneered at the Lillington Gardens estate in Vauxhall Road by Darboume and Darke (1961-71). Reacting to their often noisy and cramped urban sites by turning their back on them, they created their own sense of place through an internal and architectural logic. Load-bearing fair-faced blockwork or brickwork enclosed a series of child-sized spaces. Deep plans were cleverly broken up and toplit by clerestoreys or rooflights which formed an eventful roofline (figs 4.60 and 4.61). Domesticity and seclusion were thus provided without resort to the bland, vaguely Scandinavian appearance of most rationalised traditional construction. Alternative traditions were studied: the freer, organic and expressive work of Alvar Aalto, early Erich Mendelsohn, Hugo Häring, Hans Scharoun and Aldo van Eyck, as well as the English Arts and Crafts movement.[33]

	Borough	*Design*	*Completion*	*Job architect*
Bromley Hall PH	Tower Hamlets	1965	1968	Bob Giles
Berger Primary †	Hackney	1965	1969 (dem)[34]	Scherrer & Hicks
Benthal Primary	Hackney	1966	1967	Paul Maas
Downsview ESN	Hackney	1966	1969	—
Hungerford Primary †	Islington	1968	1971 (dem)	Barry Wilson
Palatine Road ESN	Hackney	1970	1974[35]	Louis Hellman
Frank Barnes Deaf †	Camden	1973	1978	Ivor Plummer
QE II Jubilee ESN	Westminster	1974	1977 (alt)	Brian Goldsmith

Table 4.4: a selection of GLC primary and special schools. Bold type indicates an entry in the gazetteer below, and demolished schools, where known, are shown with a dagger symbol (†). Benthal Primary School was designed in private practice.

Figure 4.62: Perspective of split-level teaching space at Vittoria Primary School. Institute of Education Archives: ABB/B/1/6/5.

But these schools represented more than an alternative brand of formalism. The advent of the new authority in 1965 offered the possibility of more meaningful dialogue with ILEA educationalists and some form of marriage between the London 'one-off' tradition and an informal, diffuse style of teaching. The ILEA committees tolerated variation and even a certain individuality in the schools they commissioned, which allowed curricular specialisms to be developed and the eccentricities of building sites to be exploited. On the basis of the experimental **Vittoria Primary School**, the standard primary brief was restructured around pairs of home bases with a shared quiet room (fig. 4.62).[36] Yet Hellman recalls that his own attempt to design child-scaled, informal spaces 'was strongly disapproved of and discouraged by the establishment'.[37] The essentially romantic architectural approach of this group was arguably more compatible with a child-centred pedagogy ultimately derived from Rousseau and Pestalozzi than the sober enlightenment rationalism of the Development Group.[38] The curved bays and soaring rooflights of **Benthal Primary School** in Hackney, inspired by children's love of tents and caves, anticipate Colin Ward's plea that 'children, most of whom are quite naturally enormously romantic, would like their daily environment to have some devious and unobvious characteristics'.[39]

RBS and MACE

The LCC's 'emergency' prefabricated programmes of the 1940s were prompted by urgent demand and a daunting building backlog. As Schools Division obtained a sounder footing and materials became more readily available, Hills was eased out of the picture in the mid-1950s.[40] The group structure of the Architect's Department lent itself to a diverse, architect-led sequence of 'one-off' jobs. Michael Powell was reluctant to prefabricate, asserting 'you will never beat loadbearing brickwork for cost in the case of single storey buildings in London; well, not in my lifetime'.[41] Housing Division architect Cleeve Barr had already reached similar conclusions independently.[42] Powell resisted pressure from central government to join the growing band of consortia until the last possible moment.[43]

Instead, a development group led by GLC architect Len White was set up in 1964 to devise a home-grown system; the logic, according to Peter Jones, was 'if we've got to do it, let's do our own'.[44] The Rationalised Building System (RBS) combined bespoke and off-the-shelf components.[45] Despite its name, RBS had little to do with rationalised traditional construction (page 71). It was a typical open system for single-storey buildings, comprising a steel grid with services housed in a plywood roof deck and heating in a plywood box beam under the windows. Over the next five years it was used for some 28 primaries and a few more special schools, a small proportion of the total ILEA programme. But the 12' (3.6m) RBS grid was too coarse to design small buildings. At the first to be completed, Prior Weston Primary School in the City of London of 1968, an elaborate semi-open layout was squeezed into a box (fig. 4.63). This was despite the ambition of the charismatic head teacher Henry Pluckrose (previously deputy at **Eveline Lowe Primary School**) and the fact that its catchment area constituted the architecturally-progressive and middle-class Barbican estate.

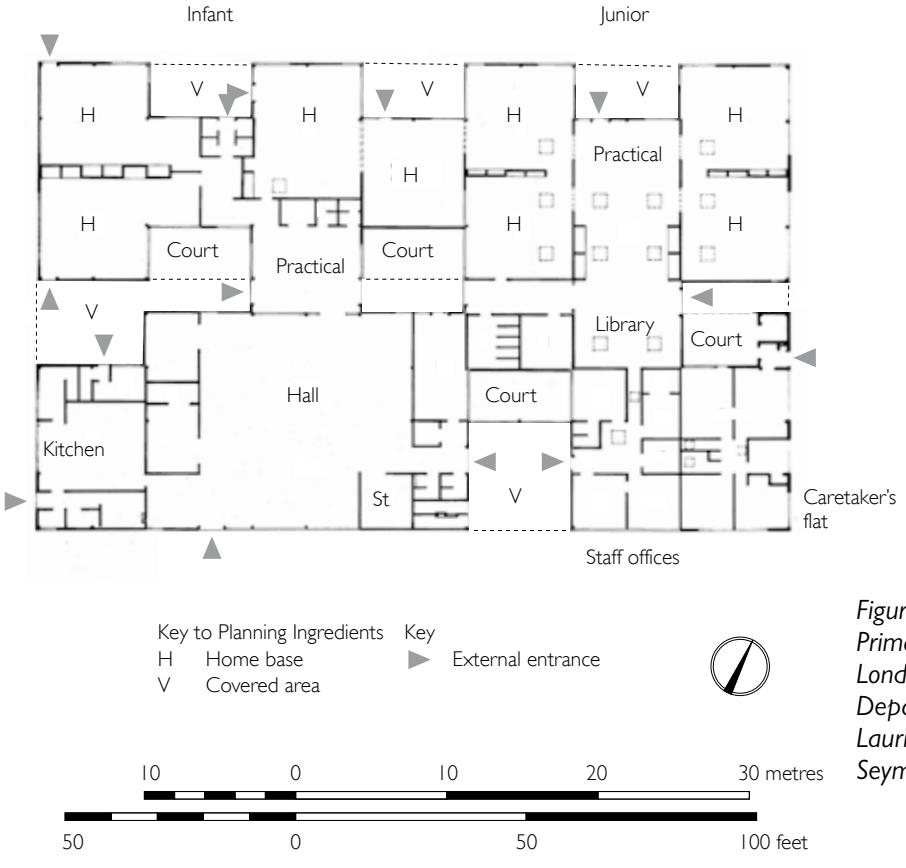

Figure 4.63: Prior Weston Primary School, City of London; LCC Architect's Department (job architects Laurie Pestell & Alan Seymour), 1968.

The clunky plans and detailing of the RBS schools compare poorly with contemporary and ostensibly-similar 'one-offs' achieved under the same cost limits, such as the intricate, highly-tuned Hugh Myddelton Primary School, LB Islington, designed to the Golden Section by Julian Sofaer. The range of RBS cladding materials included brick and concrete panels and was intended to offer designers choice and flexibility in the face of fluctuating prices.[46] But, as so often with systems, the external appearance was the first element to suffer 'cost erosion' and some schools, such as Holmleigh Primary School, LB Hackney of 1967 by Ivor Plummer, were finished in painted plywood panels. The deep plans, in combination with the reduction of ceiling heights to 8' (2.4m) in 1969, meant that the roof deck had to be expensively pierced with roof-lights to bring lighting levels up to the statutory 2% daylight factor.

RBS was the prelude to the formation of the Metropolitan Architectural Consortium for Education (MACE) in April 1966 with the DES, Surrey and East Sussex County Councils the principal partners.[47] The system was devised from 1966-70 by a development group led by John Killeen, an architect seconded from Schools Division.[48] Its conceptual basis was sophisticated and included a hierarchy of planning flexibility derived from the North American School Construction Systems Development (SCSD) programme (fig. 3.7). Its components were structural precast concrete panels which supported a deep, steel space-frame roof which housed the services. A triangular end profile was designed for better junctions and joints. Two pilot schemes were built in 1969-70 to the design of local authority architects: Poyle Infant School at Colnbrook, Surrey and St Nicolas Special School in Croydon.[49] High standards of sound insulation included in the technical brief, as Colnbrook was near Heathrow Airport.

The main charges against MACE were its persistent technical defects, principally relating to the roof deck and heating system, and a crude, non-divisible one-metre tartan grid, the latter strongly opposed by DES architects.[50] One GLC architect wrote that 'a ceiling tile one metre square and 2.4m above floor level assumes a crushing potential and lavatory planning is severely circumscribed'. But above all, the system was found to be extremely expensive, and only boxes could be produced within the cost limits.[51] The construction of the first MACE schools around 1970 coincided with the start of a prolonged period of high inflation, forcing architects to opt for the cheapest possible components. In London, 12 primary schools, a special school and a large secondary school were constructed in MACE from 1971-74.[52] A typical example is Ashmead Primary School, LB Lewisham of 1970, by job architect Anne Webb, a square envelope with a square hall enclosed on three sides by teaching space. The building was located on the only flat area of the site as MACE, like many prefabricated systems, did not cope well with changes in level. Webb's Paxton Primary School, LB Lambeth of 1971-72 was larger, permitting a central hall lit by double courtyards.

The abandonment of MACE by ILEA in 1974 was hastened by two well-publicised events. In March 1973, Louis Hellman resigned from the GLC after refusing to design Grafton Primary school, LB Islington in MACE. He ensured that the episode received much publicity in the *RIBA Journal* and the *Architects' Journal*, and the following year a caucus meeting of GLC architects voted overwhelmingly against MACE. At the opening of the Edith Neville School, LB Camden in August 1973, the headmistress criticised the design

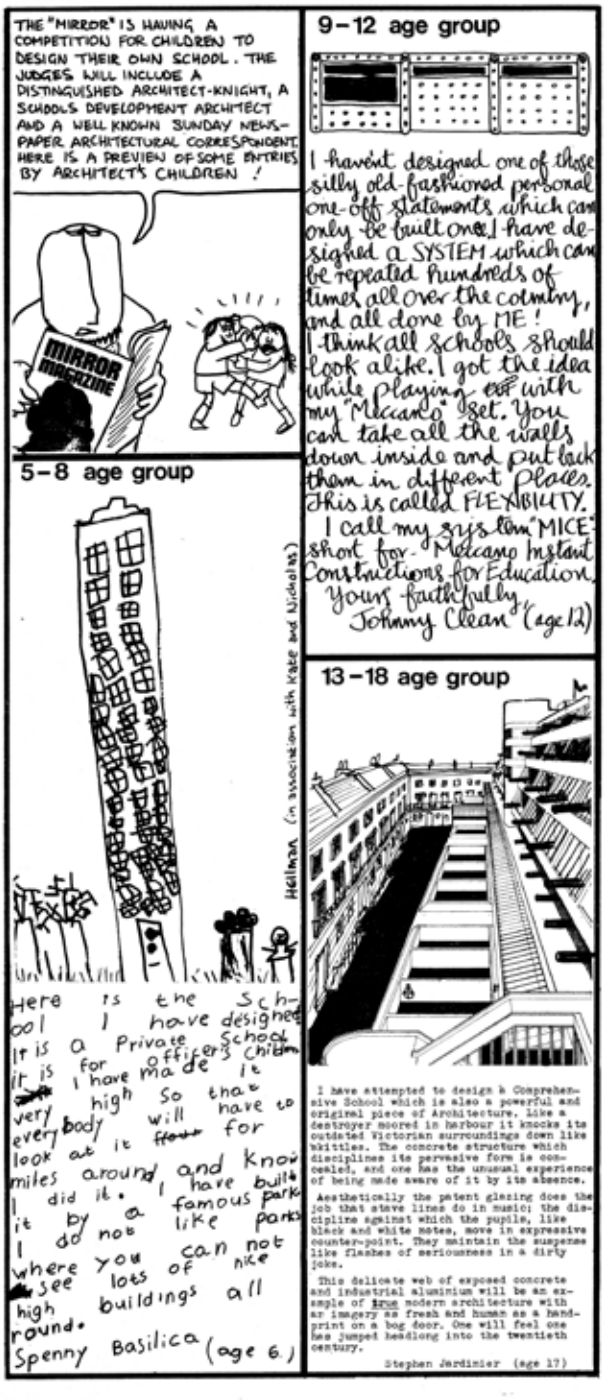

Figure 4.64: Cartoonist and GLC architect Louis Hellman on London schools. He contrasts the MACE system devised by John Killeen (who appears here as Johnny Clean) with the individualistic Pimlico School, then much praised by the architect and critic Stephen Gardiner. Also included is Basil Spence's Cavalry Barracks at Hyde Park, whose residential tower was a subject of controversy. Reproduced from the Architect's Journal, *vol.151, no.13, 1 April 1970, p.800, by the kind permission of the AJ and Louis Hellman.*

and layout of the school and Dick Collins, Mayor of Camden, refused to accept responsibility for the premises.[53] The MACE Development Group attributed the rebellion of the GLC job architects to 'an inability to work within the discipline of a standard idiom […] and a romantic desire for self-expression' (fig. 4.64).[54]

Retrenchment and Rehabilitation

By the time ILEA withdrew from MACE, the schools replacement programme had already dwindled, and with it, the system's purchasing power through economies of scale. Inner-London school rolls fell as a result of a low birth rate and migration to the outer boroughs and expanded towns: the population of inner London was 2.60 million in 1980, compared with 3.16 million in 1965. ILEA resources were diverted to an expansion in higher and further education, and the number of annual primary schools completed fell from 12 to two, with mid-project cancellations such as Elm Lane Primary School, LB Lewisham indicating how decisively change came.[55]

The most common fallback solution was rehabilitation of the solid, eminently adaptable stock of Board Schools. In 1974, the *Architects' Journal* reported 'ILEA officials say that an increasing number of heads tell them: "if Edith Neville is the sort of new building we're likely to get, please can we keep our Victorian 'slum' and have it done up!"'.[56] A 1972 report by Susan Beattie of the GLC Historic Buildings Division did much to bring about a critical re-evaluation of the architecture of the School Board for

London, but ILEA had long recognised how cheaply board schools could be converted to serve new teaching styles and for evening use by adult education institutes.[57] In 1968, ILEA held an open 'Plowden Competition' for re-planning Compton Primary School, LB Islington, a triple-decker board school of 1881.[58] The winning firm of Farrington, Dennys and Fisher inserted a new central staircase, removed non-structural walls to absorb former corridors into larger teaching spaces and replanned the service areas to provide a noise barrier to the busy Compton Street. Mezzanine areas and raised platforms and bays were slotted into the storey heights, creating changes of level and intimate enclosures such a snug, dark story-telling area in the centre of the ground floor. In 1973-77, the practice employed similar techniques on a second board school, Sebright Primary, LB Hackney. GLC architects employed similar techniques at the Montem Primary School, LB Islington of 1895, remodelled in 1971 by David Harvey.[59]

Fig 4.65: Shapla Primary School, LB Tower Hamlets; GLC Architect's Department, 1986-87. One of the last schools designed within the GLC before its abolition in April 1986. This presentation drawing was probably prepared for the ILEA education committee. Reproduced from GLC/ILEA Architecture 1976-1986, *published by Architectural Press.*

In the last quarter of the twentieth century, new primary schools were most common at newly repopulated inner-London boroughs such as the East End and new housing developments such as the Isle of Dogs Enterprise Zone and the new town of Thamesmead. They sought to address their urban surroundings through the traditional idiom of loadbearing stock brick. Deep plans were usually expressed by a big pitched roof of profiled aluminium or tile. With this came the possibility of lofty interiors with exposed laminated timber or light steel trusses, as at **Shapla Primary School** in Tower Hamlets (fig. 4.65) or Bellenden Primary School, in Southwark. Michael Faraday Primary School of 1974 by job architect Irma Stypułkowska; Linton Mead, completed in 1978 by Bob Gordon; Nightingale Primary School of 1978 by Alan Sivell, and Olga of 1979 by Anne Webb were conceived on a domestic scale, with home bays and quiet areas clustered around central practical spaces. By the mid-1980s, a regression from semi-open planning to the classroom and corridor can be seen at Shapla, Eric Classey's junior wing to the Eleanor Palmer Primary school, LB Camden, completed in 1985; and Ivor Plummer's Hermitage Primary School, LB Tower Hamlets of 1985-89.

Gazetteer

Pre-school education

¶ **Vanessa Nursery School**, Cathnor Road, LB Hammersmith & Fulham; Fitch & Co Ltd (job architects Colin Kelly, Peter Crutch and Stewart McColl), built 1972-73.

Vanessa is an unusual example of a purpose-built nursery, funded by a trust set up by the actress Vanessa Redgrave. The administration of the school was handed over to ILEA on completion. The brief, formulated with ILEA and the headmistress Margaret Walsh, stressed the need for a variety of activity spaces, outdoor play and aquatic development. These received exuberant expression in the semi-open plan with its curved bays for art, science and quiet; an outdoor play area accessed by sliding doors and served by a generous equipment store and a heated indoor swimming pool.

The visual vocabulary is directed at pre-school children: a boldly-styled statement of glossy glass-reinforced plastic (GRP) in bright red, yellow and cream. The primary colours and overscaled geometries were inspired by plastic toys such as the Danish Lego blocks, although curves and domes were structurally necessary to give rigidity to the GRP.[60] The half-domed bays rise up beyond the main play area, permitting clerestory lighting and ventilation. They are 'multivalent', to use Charles Jencks's contemporary term, variously recalling the domed towers of Le Corbusier's chapel at Ronchamp, observatories and ships' cowl vents.[61] In contrast, the delicate lattice beams of the interior are redolent of the early Hertfordshire schools. Architecturally, Vanessa is an example of the influence of product design and 'pop architecture': Fitch was one of the leading design firms which encompassed both.[62]

Figure 4.66: A boldly-styled 'pop architecture' was chosen for the Vanessa Nursery School in West London, designed by Fitch & Company. Reproduced with permission from Architectural Review, vol. 154, no. 919, September 1973, p. 179-84.

¶ Play group (now **Cressingham Gardens Tenants' Hall**), Hardel Walk, Tulse Hill, Lambeth; Dry Hastwell Butlin & Partners (job architects Roger Bicknall and Vincent Hastwell), completed *c.*1979.

This circular play group and tenants' hall serves the Cressingham Gardens estate. It is an example of the social and architectural integration of pre-school facilities into a residential scheme and remains in regular use. The scheme, although designed by private architects, is typical of the high-density, low-rise housing in Lambeth latterly favoured by borough architect Edward Hollamby. The whole estate, including the school, was built with direct labour, and was completed shortly before a government moratorium on council housing.

A central playroom gives access to a south-facing veranda, a quiet area and the ancillary accommodation wrapped around it. The playroom is generously lit from a conical rooflight and by south-facing windows sheltered from direct sun by the wide brim of the conical roof. Entrances sprout out from the perimeter and connect with the curved perimeter walls. The building nestles into a bank at the edge of Brockwell Park and traces of the sinuous hard landscaping remain. Centrally-plans schools were developed at Leicestershire in the 1960s, but this building with its conical form and chunky timber detailing anticipates a clutch of centrally-planned primary schools in Hampshire (page 272).

Primary Schools

¶ **Chesterton Primary School**, Dagnall Street, LB Wandsworth; LCC Architect's Department, 1963-64.

14 square classrooms with pyramidal roofs, arranged in a chequerboard formation. The central hall incorporates a hyperbolic paraboloid roof, designed with consulting engineers Hume Tottenham & Bennett.[63]

¶ **Vittoria Primary School**, Half Moon Crescent, LB Islington. LCC/GLC Architect's Department (job architect Ronald W. Robson-Smith), designed from 1963 onwards, built c.1965-67.

Vittoria Primary School has an origin in an unsuccessful collaboration between Architects and Building Branch and the LCC on an experimental primary school that would enable mixed-age groups and informal learning.[64] At an initial project meeting in September 1963 an outline scheme was presented by Ron Robson Smith of Schools Division.[65] When it became clear that differences of architectural approach were irreconcilable, Architects and Building Branch continued on the original Peckham site, resulting in the **Eveline Lowe** school (pages 210-11) and a second site was found for the LCC scheme which became Vittoria.[66] This, like Eveline Lowe, was 'a live exercise in close cooperation between the architect and the education officer'.[67] In particular, the project sought to address the transitions between nursery, infant and junior stages, and the acute need for additional language tuition needed by first-generation immigrant children, who represented 30% of the intake.[68]

Adjacent age groups were accommodated in pairs of classrooms, each provided with their own dining area. Three staggered pavilions, each containing two pairs of classes separated by a folding door, were arranged to form small courtyards, with a multipurpose hall at the centre. The transition from home to school was addressed through the inclusion of a play centre and a parents' room. The sloping site suggested a split section for three of the four pairs of classrooms. The upper part was reserved for quiet study, with toilets, cloakrooms and cupboards stowed away beneath. Practical activity and play was encouraged to spill out

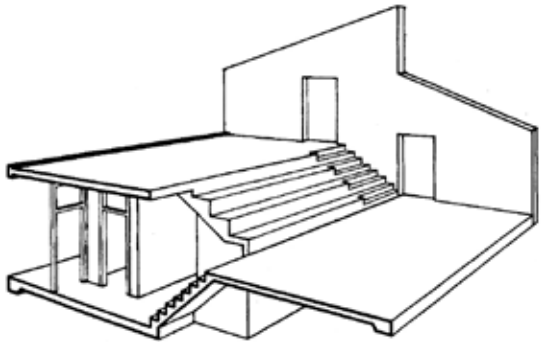

Figure 4.67: Sectional perspective of Vittoria Primary School. Reproduced with permission from Architectural Review*, vol.147, no.875, January 1970, p.24.*

from the lower level to adjoining verandas. The change in level was negotiated by child-size stairs alongside either sliding storage and a balcony, or bigger steps for group storey-telling or singing. The split-level design, although criticised by David Medd for its inflexibility and difficulty of access, was dual-aspect, cross-ventilated and high-ceilinged, all considered beneficial properties for children who lived in cramped conditions in surrounding LCC blacks.[69]

The school, opened by Lady Plowden in October 1968, was widely published and its 'architectural command' compared favourably with Eveline Lowe.[70] The classrooms pavilions are of brick cross-wall construction with wood and glass partitions and split-pitched roofs clad in profiled aluminium. The brickwork was originally painted white, topped with a timber fascia bright purple, 'as if the architects had reacted against the too-permanent finishes of the Victorian school that was demolished.'[71] Recent alterations include the addition of UPVC windows.

¶ **Benthal Primary School**, Benthal Road, LB Hackney; GLC Architect's Department (job architect Paul Maas), 1966-67.

When the Rendlesham Road Board schools of 1876 and 1887 were damaged by bombing in 1944, they were replaced by a steel-framed infant school opened in 1949, the first of eleven 'transitional' primary schools (page 186). By the 1960s Hackney was beginning to experience an influx of young residents. Additional land was acquired in 1965 and an additional 360 places provided by means of a large junior extension

to the north of the 1949 building.[72] The junior school, whose design was approved in January 1966, is a impressive foil to the linear plan of its predecessor.[73] It comprises eight pinwheeling home bays clustered around an L-shaped circulation route (fig. 4.60). The home bays were conceived as self-contained pavilions: and most are equipped with their own exit to the playground or a small court, WCs, washbasins and Belfast sinks for messy activities and a variety of differently-shaped bays for small groups. The central space is vaulted by four concave ribs which spring from the ground. This structure is lit by a patent-glazed top light, from which a tent-like convex roof is 'draped'. A variety of small windows at children's eye level are also provided. From the exterior, soaring roofs articulate the home bases of the deep plan as at **Bromley Hall School for the Physically Handicapped** and Berger Primary school.

Benthal, Maas's first school, was designed in six weeks before the budget year closed. The imminent deadline prohibited formal consultation:

> 'I asked my four children what they liked and disliked about the various schools which they were attending. I also tried to recall the kinds of structures that had excited me when I was a child. The result was a classroom designed on a pinwheel plan that related to the small group style of teaching, with a form that tried to symbolise the archetypical structures of a cave and a tent (standing under the arches it recalls a cave and outside of the arches it recalls a tent). [..] Each classroom had its own protected piece of nature (its courtyard) and each was scaled to the height of 5-7 year olds … I wanted Benthal to feel like a children's world in which adults were invited'.[74]

Construction is of load-bearing blockwork with a rendered outer leaf of hollow brick, and a felt roof. The domes to the home bays were of interlocking precast reinforced concrete ribs, with mortices for the adjoining joists. Windows were steel-framed with some patent glazing; some windows since have been replaced with doubled-glazing in steel-frames.

The landscaping is equally child orientated. A 10ft (3m) fall over the site, partly the result of the basements of demolished terraced houses, was exploited to give a series of terraces linked by ramps and steps and variously separated by battered concrete sections or snaking hollow brick walls. The junior's and infant's schools wrap around a square courtyard planted with trees and wild plants. Elsewhere the plan envelops mature trees, which seem to sprout through the roof. At the entrance, a perimeter wall is reverse-embossed with the school's name in an oversized slab-serif typeface.

Figure 4.68: Vaulted classroom at Benthal (P5925009).

Figure 4.69: Michael Manser's much-altered Horniman Primary School in Lewisham. Photograph by James O. Davies – English Heritage; DP059381.

¶ **John Evelyn Primary School** (now Clyde Early Childhood Centre), Alverton Street, Deptford, LB Lewisham; GLC Architect's Department (job architect Ron Ringshall), designed 1968, completed *c.*1972.

The history of the John Evelyn school nicely illustrates the dynamic relationship between primary schools and catchment areas undergoing demographic change. In 1967, with construction underway for the system-built GLC Evelyn Estate, ILEA anticipated an influx of young residents and a localised 'baby boom' in Deptford. In 1968, the GLC were asked to design a two storey infant school to the north of the three-storey John Evelyn board school of 1875 to provide a total of 560 places. The comprehensive redevelopment of the area allowed roads to be closed and a site extension. The intention to replace the board school with a new junior school did not materialise when numbers fell, and by 1980 the juniors had been decanted into the new building.[75] From 1986, the school became a day nursery; the board school survived as an adult education institute until its demolition in 1994.

Ringshall's pinwheeling design is composed of two two-storey teaching ranges, a canted assembly hall and a wing combining dining, kitchen, office and service functions which acts as a barrier against the noisy Evelyn Street. The linear teaching spaces are divided into a series of linked bays capable of separation by curtains, and both are provided with south-facing verandas. A square lobby at the centre of the plan can be used for practical or noisy activities. Construction is of in-situ reinforced concrete roof slabs and beams bearing onto load-bearing buff brickwork. The modulated elevations of the teaching ranges express both the 12 feet dimensional module and the home bays.[76] The school survives with window replacements and some partitioning of the home bays.

¶ **Horniman Primary School**, Horniman Drive, LB Lewisham; Michael Manser Associates (partner in charge Michael Manser, associates in charge Cedric Kitchin and Frank Dewar), designed by 1968, built 1970-71.

The school is terraced into a steep, north west-facing slope, although all the teaching accommodation occupies a single level, cantilevered over a covered play area on columns. Seven class areas—three for infants and four for juniors—are grouped around a double-height central hall with a sunken floor level. The administrative accommodation and schoolkeeper's flat are placed on an upper storey, providing an entrance from street level.

The architecture is characteristic of Manser's work. It is a crisply detailed iron-frame in the Hunstanton tradition, originally painted in

dark brown and clad in glass and ribbed plastic clapboard (the latter a cost-cutting measure imposed by the DES). The lightweight frame achieved sufficiently long spans to provide the most flexible plan and minimise the number of pile foundations. The school was remodelled in Summer 2010.[77]

¶ **St Paul with St Luke Primary School**, Leopold Street, Bow Common, LB Tower Hamlets; Maguire & Murray (job architect Rajindar Singh), 1970-71.

The trend towards deep and open planning found its ultimate expression at St Paul with St Luke Primary School, a companion for their celebrated church of 1956-60 and a replacement of two Victorian schools in an East End comprehensive redevelopment area. Faced with an inflationary squeeze in building costs, Maguire and Murray adapted a wide-span agricultural shed as they had earlier done at a low-cost stable in Oxford.[78] Their idea recalled the pronouncement of the National Society in 1816 that 'a Barn furnishes no bad model, and a good one may be easily converted into a School'.[79]

Figure 4.70: St Paul with St Luke Primary School (P5925010).

The exterior is dominated by a corrugated, shallow-pitched roof with gable on the long ends. Inside, under exposed steel portal frames, shiny insulating panels and bright yellow air-conditioning vents, was a largely full-height, open-plan teaching area, divided by low breeze-block walls into a series of home bays. The eaves extend over stanchions to form a veranda for outside play and learning. The educational aim of first headmaster T.E. Watt was that the school should become a 'children's and teacher's workshop'. Surprisingly, Maguire and Murray's design was supported by Lady Plowden herself: its built form demonstrated the diversity of architectural response to her 1967 report.[80] The load-bearing external envelope permitted a complete reconfiguration of the interior, with painted breeze blocks defining a series of classrooms. Their 'low-tech' pragmatism was influential at schools in London and beyond (page 81).[81]

¶ **Shapla Primary School**, Wellclose Square, LB Tower Hamlets; GLC Architect's Department (job architect Ann Webb), designed 1983-84, built 1986-87.

Shapla was the first primary school to be completed to a new ILEA brief requiring greater enclosure of teaching spaces. The school shows the influence of the Hampshire primary schools, visited and much admired by the GLC architects, as well as Aalto and Erskine.[82] The devise of a snaking corridor linking two courts relates to Webb's earlier John Roan lower school (qv). Pairs of classrooms are inter-connected with double doors or folding screens. The exterior is dominated by a big, barnlike roof with exposed timber trusses but the deeper space is largely artificially lit. Verandas are set under the deep eaves of the profiled aluminium roof. The elevations are of stock brick and timber panels painted yellow with timber sash windows, now replaced with UPVC.

Secondary schools

¶ **Haggerston Girls' School**, Weymouth Terrace, LB Hackney; Ernö Goldfinger, designed 1962, built 1964-67, listed at grade II in 2004.

Haggerston Girls' School, although designed in private practice, continues the LCC habit of

Figure 4.71: Assembly hall at Acland Burghley School. Photograph by James O. Davies – English Heritage; DP059323.

packing most of the teaching space into a long classroom block with glazed links to separate blocks for the hall, gym, staff and specialist teaching rooms. This mode of planning was more successful for smaller schools such as Haggerston, a seven-form intake for 950 girls, than the 2,000-place comprehensives, where scale justified a sixth form and more specialist accommodation.

Like many of the in-house LCC secondary schools (qv **Pimlico School**), Haggerston is distinguished more by its architectural treatment than any educational impetus. The glass entrance block is the most impressive space. A double-height foyer, overlooked by a mezzanine range of offices, leads to the hall and music rooms. Interior and exterior are unified by the consistent use of full-height mullions, dark brick and the coffered ceiling to the concrete roof slab. The four-storey teaching block, essentially a grid of classrooms, is expressed as such through a bush-hammered reinforced frame which follows golden section proportions. The ordering of floor slab, pilaster and mullion into a visual hierarchy recalls the classicism of Auguste Perret, Goldfinger's mentor. The cantilevered library and art room, rooftop classrooms, and a cubic water tower provide carefully-composed foils to the block. Haggerston is Goldfinger's only secondary school, and the only school that demonstrates his mature style.[83]

¶ **Acland Burghley School**, Burghley Road, Tufnell Park, LB Camden; Howell, Killick, Partridge & Amis (partner in charge Stanley Amis), 1963-67.[84]

Architects HKPA were first briefed on this eight-form entry comprehensive for 1,300 pupils in 1960. Acland Burghley was one of the first London comprehensive schools to be divided into year groups rather than houses. At the eastern end of the site, separate blocks for the junior, middle and upper schools radiate from a central circulation wedge, and on the ground floor of each block is arranged a pair of year rooms, used for teaching, assemblies and dining. Above them are three storeys of squarish classrooms for humanities and commerce. Fan-shaped, top-lit arts and crafts rooms are grouped over the circulation core. A railway cutting runs under the constricted site, necessitating a concrete deck on which was placed the gymnasia, games hall, playground and car park.

The teaching blocks are united by a consistent architectural treatment of bands of boxed-out, double-sliding acoustic windows and canted flint aggregate panels over octagonal columns. The result is comparable with Ernö Goldfinger's mature work such as Alexander Fleming House.[85] Infill and internal partitions are a mixture of grey brick and fair-faced in-situ concrete. The ingenious hexagonal assembly hall is double-ended for different functions, with great attention to acoustics and lighting. It sits amid hard landscaping, including an external

Figure 4.72: Acland Burghley School, Tufnell Park, LB Camden; Howell, Killick, Partridge & Amis, 1963-67. Photograph by James O. Davies – English Heritage; DP059335.

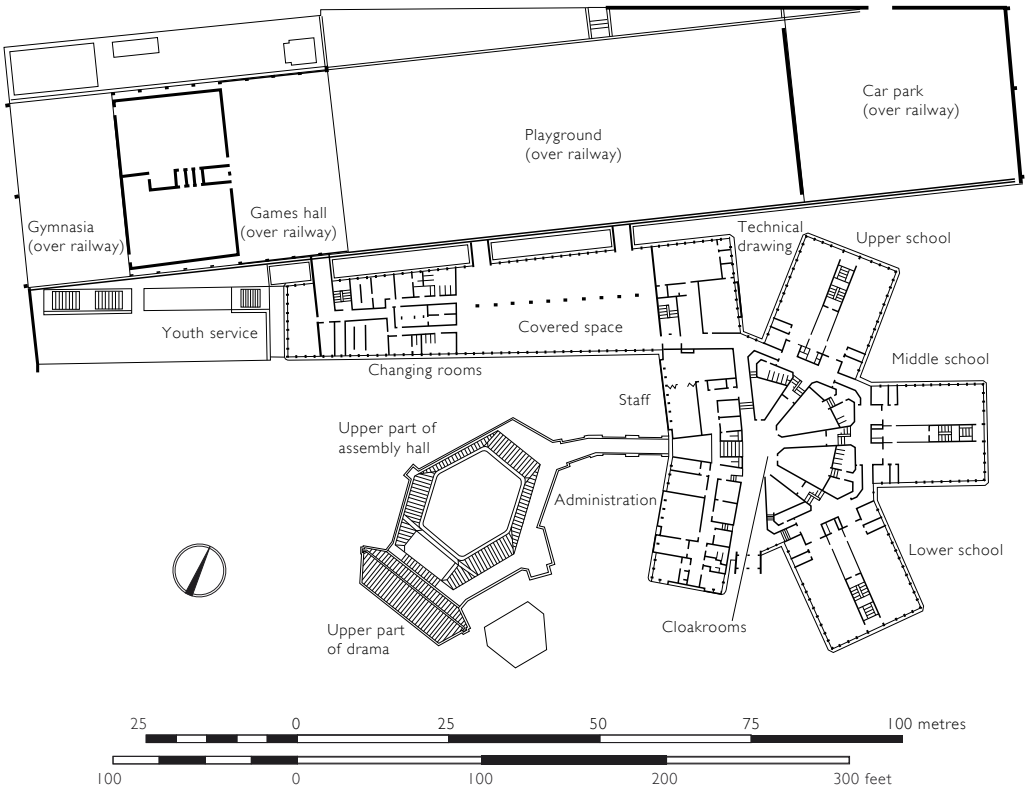

Figure 4.73: Acland Burghley School, LB Camden; Howell, Killick, Partridge & Amis, 1963-67.

amphitheatre and fragments retrieved from the previous Acland Burghley school. The gymnasia and games hall—now rebuilt—were accommodated within a lightweight, large span structure with a folded plate roof.

This is the only school designed by this significant British practice and presents an expressive and assertive face to its dense and run-down urban surroundings. The assembly hall and the finishes (a combination of precast and in-situ concrete and boxed-out windows) recall the firm's contemporary commissions for Oxford and Cambridge universities. A new two-storey music and dance centre designed by Gollifer Langston Architects was added in 2007 and the hall was refurbished.

¶ **Pimlico School**, Lupus Street, Pimlico, City of Westminster; LCC/GLC Architect's Department (job architect John Bancroft), designed 1964-65, built 1967-70; demolished 2008/11.

Although one of London's flagship comprehensives, Pimlico was developed from a standard brief of 1964 which reflected the then-conventional thinking of fixed classrooms, set apart from specialised craft, science and sports facilities.[86] The 4½ acre site—exceptionally tight for a ten-form entry school of 1,725 pupils—was bounded by relatively tall buildings. Bancroft's response to these conditions was a long, low school, tightly packed into a continuous, deep range. Lifts were avoided by restricting heights to four storeys, one of which was sunk beneath street level, exploiting basements formerly occupying the site. The organising principle was the long linear spine which on the second floor takes the form of an internal street or concourse, as seen in sources as diverse as Le Corbusier's Marseilles Unité d'Habitation and shopping malls. Below this were laboratories and housecraft rooms and sports facilities (gyms and a swimming pool) separated by a youth centre and evening institute. Above the street were the classrooms, a library and a square hall. Bancroft housed the engineering and craft workshops in a separate, top-lit, single-storeyed block to the north, emphasising their industrial character.

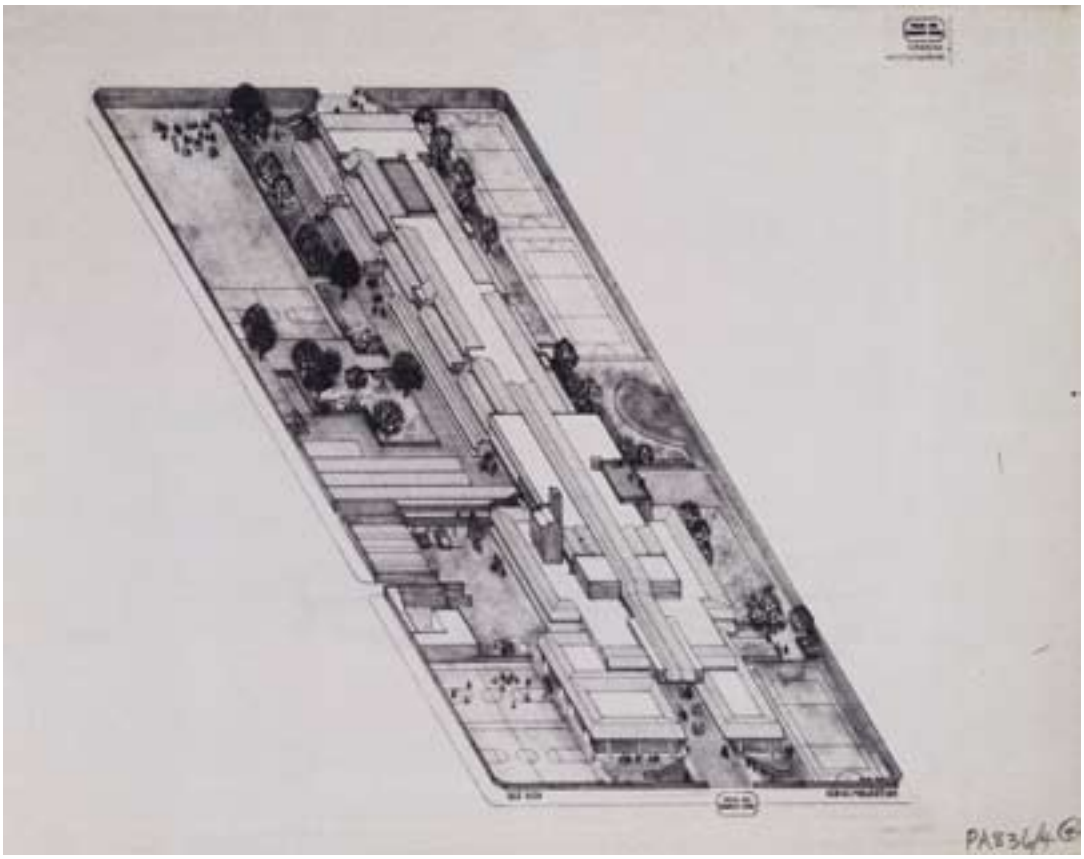

Figure 4.74: A 1965 aerial axonometric projection of Pimlico school, signed by Colin Bex. RIBA *Library Photographs Collection, RIBA32286.*

Figure 7.75: Internal street at Pimlico School in 1970. Institute of Education Archives; ABB/B/1/13/4.

Figure 4.76: A view of Pimlico School from St George's Square. The main entrance is to the right. © Elain Harwood.

The requirement to let natural light penetrate the deep and low interior led to the complex stepped section or *terrassenhaus* and the device of angling each projecting wall and roof upwards and outwards. The dynamic, highly-modelled elevations incorporated much patent glazing, and problems of glare and solar heat gain soon became apparent (an air cooling system was vandalised soon after occupation). The concrete cross walls required to support the cantilevered floor slabs meant that the layout was largely incapable of alteration. By the time of the school's competition, secondary teaching practice had overtaken the assumptions of the brief. David Medd compared the school to the equally tough, compact and image-making Hunstanton School of 1952-54 by Alison & Peter Smithson: both were simultaneously demonised by educationalists and celebrated by architects (Pimlico won the 1972 RIBA award).[87] A certificate for immunity from listing was granted in 2003 and the school was demolished in stages from 2008 to 2011.

¶ Addition to **Hampstead Comprehensive School** (now Hampstead School), Westbere Road, West Hampstead, LB Camden; Stillman and Eastwick-Field, *c.*1965.

The site was formerly occupied by the Haberdashers' Aske's School for Boys and was acquired by the LCC in 1961 when the school moved to Elstree. The ILEA addition of 1966 relates to the newly-formed comprehensive. It occupies the centre of the site, set back from the Westbere Road frontage which is occupied with school buildings of 1902-3, 1910 and 1930. The accommodation is tightly packed into a two-storeyed courtyard arrangement. A change in level allowed the entrance, hall and a covered playground to be accommodated with an additional lower ground floor.

The massive yet refined exteriors are composed of large, pre-cast panels of sparkling white calcined flint aggregate, emphasised by black mastic joints. The cladding panels and Crittal-style glazing wrap around the reinforced-concrete frame to give deep reveals. The indeterminate elevational rhythm of solids and

Figure 4.77: Addition to Hampstead Comprehensive School, LB Camden; Stillman and Eastwick-Field, c.1965 (P5925011).

voids expresses the disposition of teaching accommodation within. The exaggerated articulation of the clip-on panels recalls the Cambridge University Centre of 1964-67 by Howell, Killick, Partridge & Amis. The block survives with few alterations other than the addition of a lift.

¶ Additions to **Plumstead Manor School**, Old Mill Lane, LB Greenwich; Powell & Moya (job architects Eric Lloyd and Peter Cusa), designed from 1966; built 1970-73.

The scheme required an eight-from entry comprehensive school for about 1400 girls with a large sixth form. As at Powell and Moya's Mayfield School, Putney of 1952-56, the brief called for the addition of classroom blocks to earlier buildings, in this case the former Kings Warren Grammar School and an LCC gym. The architects created a series of intimate courtyards, intended as 'incidents' along the route between the entrance on Old Mill Road and the King's Warren School. The colonnaded circulation route combines open covered ways at ground floor and glazed links at first floor; an enclosed footbridge crosses Heavitree Road. The inward-looking layout and lack of external presence was partly determined by the site, shielded from Plumstead Common by the King's Warren buildings and overlooked by surrounding housing. Powell and Moya had considerable experience of courtyard planning from a series of commissions at Oxford and Cambridge universities. At Plumstead, the idea of pavilions linked by a route reflects Jane Jacobs's idea of 'social capital': the social importance of shared spaces and the chance informal encounters that result.[88] The youth club block was afforded a separate entrance and distinctive architectural treatment characterised by boxed-out windows (it is now remodelled as a nursery).

The two and three storey blocks are crisply detailed with white precast concrete cladding and black anodised aluminium window spandrels and frames. This gives a lightness and horizontal emphasis which was the firm's trademark. Panel walls of London stock brick are substituted at ground floor level, circulation areas, for the end walls and gymnasium. Split-pitched roofs with parallel rooflights harmonise with the Wrenaissance Kings Warren school and enliven the roofscape, visible from its taller neighbours. This form was previously employed by Powell and Moya at Slough District General hospital, Wexham Park. A BSF refurbishment from summer 2010 to 2011 involved the demolition of the central games hall and the addition of new blocks to the site.

Figure 4.78 (top): Gymnasium at Plumstead Manor School (P5925012).

Figure 4.79 (bottom): Classroom block at Plumstead Manor School (P5925013).

¶ Gymnasium and science building for **Rosa Bassett School for Girls** (after 1977 expanded as Furzedown Secondary School, today part of Graveney school), Welham Road, Streatham, LB Wandsworth; Trevor Dannatt & Partners, 1962-65.

Figure 4.80: Trevor Dannatt's 1962-65 science building for the Rosa Bassett School for Girls, Streatham, LB Wandsworth (P5925014).

Figure 4.81: Additions to Eltham Hill School, LB Greenwich; Trevor Dannatt & Partners, 1969 (P5925015).

¶ Additions to **Eltham Hill School**, Eltham Hill, LB Greenwich; Trevor Dannatt & Partners, 1969.

Dannatt conceived these south London additions as small pavilions enjoying a figure-ground relationship with older buildings.[89] A shared characteristic is the topographical relationship with sloping sites. The Eltham Hill extension takes the form of a cube with a two-storey link to the 1927 LCC grammar school. Classroom windows are recessed behind horizontal bands of brickwork into which are set services and gutters. The horizontal layering of solid and void, which recalls the mature work of Denys Lasdun, is tempered by slender set-back piers and a taller service core of load-bearing brick with a copper 'hat'. Dannatt's addition was demolished in 2011 as part of the school's BSF programme.

At Rosa Bassett, two extensions are grouped along the embanked terrace at the back of the 1917 Furzedown Secondary School. A strong rhythm of double-height pilasters and bay-width windows is established for the science building, a principle applied, in modified form, to the gymnasium. Their red brick is in deference to the older building, but within heavy timber detailing dominates.

¶ **The American School in London**, Loudoun Road, St Johns Wood, LB Camden; Shaver & Co with Fitzroy Robinson & Partners (job architects L.J. Brockway, K.G.R. Blythe), 1969-71.

The American School is a co-educational, independent day school planned for 1,500 pupils. It is run in accordance with the American educational system and thus divided in elementary, middle and upper schools. The design for the school, by John A. Shaver and Company of Salina, Kansas, was modified by British executive architects Fitzroy Robinson and Partners to satisfy UK regulations.. At the time of its opening in 1971 by Secretary of State for Education Margaret Thatcher, the American School was perhaps the most authentic English example of the American concept of the 'school without walls' (page 50).

A deep-plan, three-storey building was developed on a sunken site due to planning requirements. It was dependent on a high level of air conditioning and artificial lighting and many spaces are without windows. The

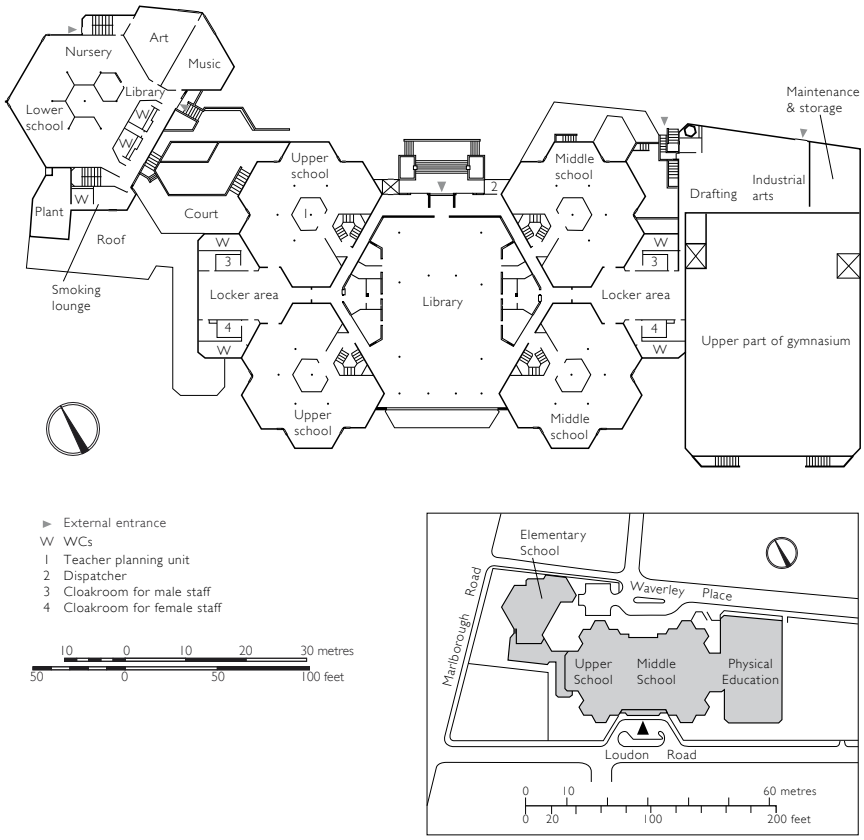

Figure 4.82: The American School in London, St Johns Wood, LB Camden; Shaver & Co with Fitzroy Robinson & Partners, 1969-71.

middle and upper schools alike were based on a honeycomb of five hexagonal classrooms, clustered around a central lesson-planning area for a team of eight teachers. Each floor had four such 'teaching pods', grouped around a central feature: a basement theatre, an open-plan ground-floor library and top-lit arts, crafts and science workshops on the first floor. The plan may have an origin in Shaver's McPherson Senior High School, Kansas, which opened in 1963.[90] The teaching pods were initially subdivided with demountable partitions to accommodate different arrangements of teaching groups. Reversion to more formal teaching methods soon led to permanent divisions between classrooms.

Ironically, the exterior expression of a 'school without walls' was to be large expanses of grey brickwork, capped with a copper roof and broken up with vertical groups of bronze-anodised aluminium windows. Recent alterations 1997-2001 by Claridge Architects are well-designed. They include general refurbishment, a new entrance and a high school wing cantilevered over the gymnasium. The theatre was remodelled in 2006-08 by Tim Foster.

¶ **Waterfield Secondary School** (now the Woolwich Polytechnic School for Boys), Hutchins Road, Thamesmead, LB Greenwich; GLC Architect's Department (job architects Bob Byron, Pat Baker, Linda Suggate), designed from 1969, completed 1976 (phase one); phase two commenced 1985.

In 1969, whilst **Pimlico School** (qv) was still in construction, ILEA updated their standard secondary brief to reflect the new educational priorities of team teaching, individual study, curricular reform, separate upper and lower schools and shared community facilities.[91] The first application of the new brief was a 1450-place secondary school for the GLC's new town of Thamesmead. The architects carried out much

Figure 4.83: A 1977 view of Waterfield Secondary School. Institute of Education Archives: ABB/B/1/3/7

Figure 4.85: Industrial finishes at Waterfield Secondary School. Institute of Education Archives: ABB/B/1/3/7

preliminary research, visiting Countesthorpe Community College in Leicestershire, Newport High School in Gwent (1969-72), touring Nottinghamshire schools with county architect Henry Swain and making contact with the DES architects designing Maiden Erlegh school in Berkshire (pages 116-17).

Assuming that change would be constant, the architects opted for a highly-serviced, flexible building with a deep interior. The plan was a double square pierced by eight light wells. Facilities shared with the wider community were accessible from Thamesmead Central Area but separated from the school by an internal street or 'mall' (influenced by Pimlico School).[92] This 'impermeable membrane' allowed communal facilities such as sports, dining areas and drama and music studios to be segregated from areas exclusively for pupils.

The largely open-plan interior was artificially lit and divided by demountable partitions influenced by the Californian SCSD schools (page 50). Separate floor and ceiling servicing grids allowed mobile equipment to be powered by booms and bollards. The exterior 'Late Modern' skin of exposed steel and glass is comparable with the contemporary work of Foster Associates and the Milton Keynes Development Corporation.[93]

Figure 4.84: Presentation drawing for Waterfield Secondary School, captioned 'view from Year 3 multi-purpose area towards library resource area'. City of London, London Metropolitan Archives; LMA: ILEA/DBPS/AR/1/161/17.

The fair-faced blockwork which prominently features in the interiors reflects the architects' knowledge of Team 4's Creekvean house of 1967 and Evans & Shalev's Newport High School. The exposure and colour-coding of 'off-the-peg' structural and servicing elements reflects the influence of Maguire & Murray's contemporary **St Paul with St Luke Primary School**.[94] A second phase of *c*.1985 substituted block walls for light demountable partitions, reflecting a popular reaction against open planning. A remodelling of 1994 by BHP architects, in advance of the transfer of the site to Woolwich Polytechnic, added a two –storey extension, freestanding *brise soleil* and further enclosed the plan. Two of the lightwells have been enclosed to provide additional teaching spaces.

¶ **George Green's School**, Manchester Road, Isle of Dogs, LB Tower Hamlets; GLC Architect's Department (job architect Bob Dark), designed *c*.1972, completed 1977.

The George Green Community Centre formed part of the GLC's initial strategy for the redevelopment of the docklands. George Green's School shared its site with a day centre for the elderly, youth club, the Lansbury Adult Education Institute, day nursery and social services suite, intended to provide social stability and cohesion for a relatively isolated community in an area undergoing comprehensive redevelopment. The community provision was jointly funded by the London Borough of Tower Hamlets and surpassed that of its contemporaries Scott Lidgett and **Waterfield**.

The school sits to the east of its wide frontage of Manchester Road, taking its cues from the locality—the curve of the road and the neighbouring church—rather than the commanding central axis of the Greenwich Royal Hospital and Queen's House across the Thames. Like **Pimlico School**, George Green school is arranged as a spine block of complex section (in this case split level). This 'terrace' is divided into three wide bays housing science, craft and art, separated by staircases to give a continuous frontage to Manchester Road. The influence of Eldred Evans and David Shalev's Newport Comprehensive School is clear. A projecting wing to the east contains the community facilities, gymnasium, sports hall, small activities hall and theatre in the round. School and community facilities are separated by a communal entrance and foyer (with ticket office). The south side, facing the Thames and Island Gardens, is stepped down into an informal 'crumble' of terraces. Detailing is in an austere but structurally expressive idiom of concrete blockwork and steel windows (qv Riverside School in Thamesmead and the Thomas Tallis School in Greenwich of 1970-73). The Manchester Road frontage has since been heightened with an additional storey of classrooms.

Figure 4.86: Perspective of George Green's School from Manchester Road. Reproduced from a booklet which accompanied a GLC exhibition of school design at the Royal Festival Hall in 1983.

Figure 4.87: Central resource centre at Roan Charlton Comprehensive School (P5925016).

¶ **Roan Charlton Comprehensive School** (now John Roan School), Westcombe Park, Blackheath, LB Greenwich; GLC Architect's Department (job architects Geof Denison and Ann Webb), designed 1977, built 1978-81.

When the voluntary John Roan school was reorganised on comprehensive lines, the Neo-Georgian school on Maze Hill was converted to an upper school and a lower school built on nearby Westcombe Park road. The school incorporated an adult education institute with its own entrance and grouped with communal facilities such as gym and music/drama studios. The brief requested the flexibility to permit both inter-disciplinary and single subject teaching.[95] Craft workshops and carpeted social areas are interspersed with staggered classrooms, the whole linked by a snaking central corridor. The architects visited Oadby Lower School in Leicestershire (page 225) and Maiden Erlegh in Berkshire (page 116-17), and the central, fan-shaped library reflects the influence of the Leicestershire schools.

The deep plan is lit by clerestorey windows set within a northlight roof of complex section.[96] The result is a compact, spreading school of domestic scale and warm materials (purple brick, tile). Much attention was paid to retaining mature trees and deferring to surrounding Victorian villas of the Westcombe Park Conservation Area. The Roan Charlton Comprehensive School was probably the last new ILEA secondary school. The school submitted planning applications for the redevelopment of its Westcombe Park site in August 2011.[97]

Special Schools

¶ **Bromley Hall School for the Physically Handicapped**, Bromley Hall Road, Poplar, LB Tower Hamlets; GLC Architect's Department (job architect Bob Giles), designed c.1965, built 1967-68, listed at Grade II in 2012.

Bromley Hall was a 120-place school for 5-16 year olds with a wide range of disabilities ranging from slight to severe. The 1964 brief reflects the views of LCC educationalists that physically-disabled children were easily distracted and needed a greater degree of seclusion and privacy than able-bodied pupils.[98] The site was an unattractive one, then surrounded by slums, bombsites and light industry, with the thundering Blackwall Tunnel Northern Approach Road in construction only 24m (80ft) away. Giles's response was a sheltering, inward-looking plan, with visual stimulation offered by architectural form. The single-storey building occupies the full width of the narrow 1.25 acre site with a forecourt off Bromley Hall Road for the school buses and a hard play area at the opposite end. Due to the wide age range, primary and secondary classrooms are ranged along opposite sides of the site, served by separate corridors.[99] A central core of communal facilities (hall, dining area, library, medical suite) receive light from inner courts which double as the infants' play area. Each classroom has folding French doors opening onto a paved courtyard (fig. 4.61),

Figure 4.88: Bromley Hall School for the Physically Handicapped, Poplar, LB Tower Hamlets; GLC Architect's Department, 1967-68 (P5925017).

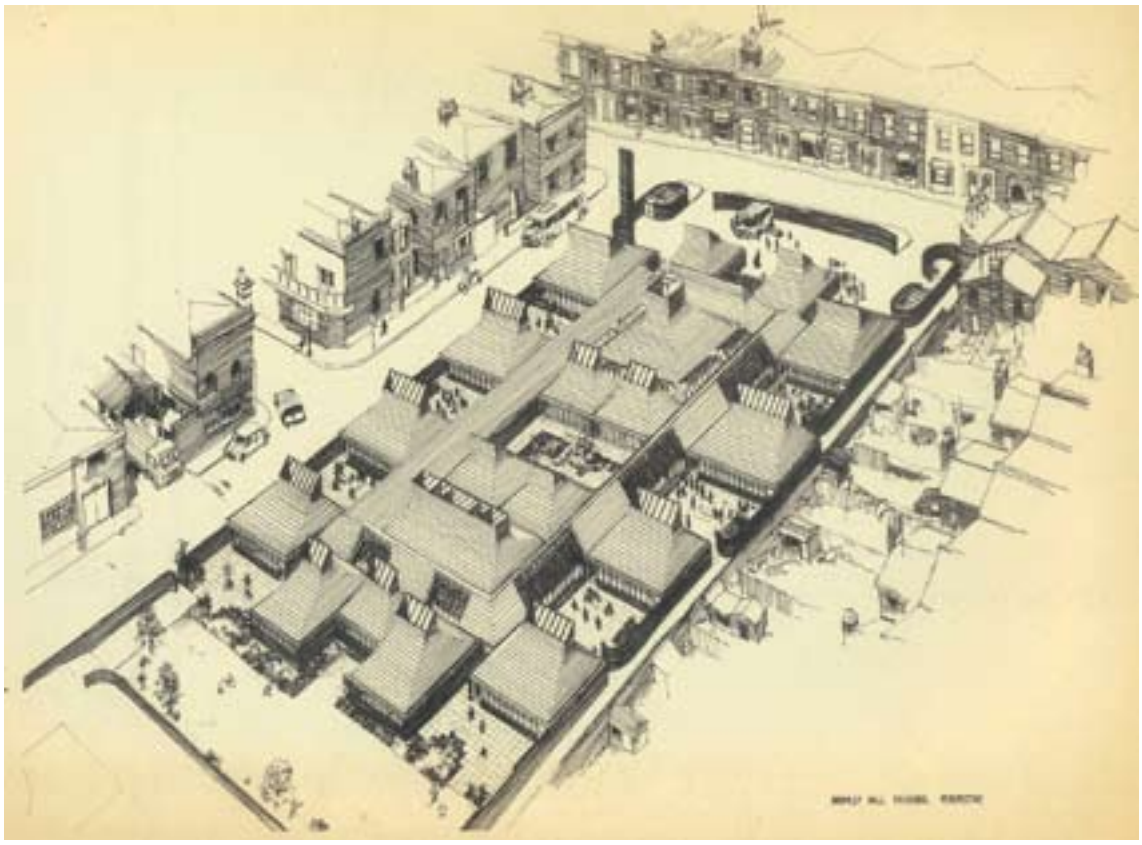

Figure 4.89: Bob Giles's aerial perspective of Bromley Hall School. The terraced housing surrounding the site has long been cleared. Drawing kindly supplied by Bob Giles.

which was provided with planting and external views from narrow slits in the brick perimeter wall. The corridors widen into lobbies outside the classrooms; between these are glazed links providing views across the courts. The alternation of classroom pavilions and courtyards is derived from Arne Jacobsen's Munkegård School of 1948-57 in Dyssegård, Copenhagen and Aldo van Eyck's orphanage at Amsterdam of 1960-61.

The low eaves of the classrooms and the limited amount of side-lighting they receive are mitigated by the reflected top light from monitors in the tall, pyramidal roofs. These soaring forms, entirely clad in artificial slate, provide much of the architectural interest of the school. The distinctive profile of the roof, designed as a 'fifth elevation', anticipates overlooking from neighbouring residential buildings. Whilst comparisons have been made with Kentish oasthouses, the silhouette echoes the industrial heritage of Bromley-by-Bow, and particularly the nearby Clock Mill of 1817, with its three drying kilns with conical slated roofs.[100] The roofs also recall Erich Mendelsohn's Herrmann hat factory, Luckenwalde, Germany of 1919-1920 and a secondary school in Locarno, Switzerland by Dolf Schnebli, published in 1965.[101] The assembly hall is articulated with a different type of rooflight and the modelled boiler chimney provides additional vertical emphasis.

The school was not part of the standard building programme, the estimated cost of £148,200 being met out of a budget for repairing war-damaged schools.[102] A nursery unit and hydrotherapy pool was added in 1978-79. The school was later used as a pupil referral central and has been vacant since its closure in 2002. The school was internationally published where it stood in stark contrast with the system-built schools that had come to characterise mainstream education.[103] LB Tower Hamlets plan the comprehensive development of the surrounding area, which would entail the demolition of the school.[104]

Figure 4.90: A 2010 view of Frank Barnes School for Deaf Children (P5925018).

¶ **Frank Barnes School for Deaf Children**, Adelaide Road, Swiss Cottage; GLC Architect's Department (job architect Ivor Plummer), designed *c*.1973, completed 1978, demolished 2010.

This primary school for 80 profoundly deaf children between the ages of 2 and 12 shared facilities with two neighbouring special schools, the Franklin D. Roosevelt School for physically handicapped and the John Keats School for delicate children. A provisional brief of 1972 was discussed between the architect, ILEA education

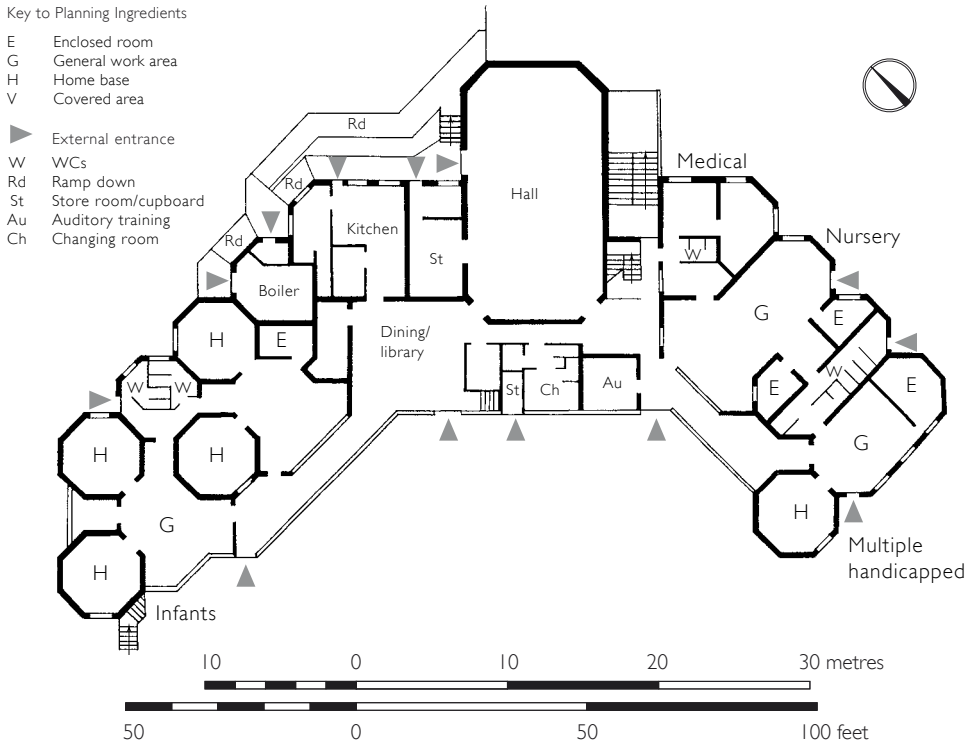

Figure 4.91: Frank Barnes School for Deaf Children.

officers and inspectors and teachers at London deaf schools.[105] From this emerged a dozen home bases grouped around 'break-out' spaces for practical and quiet activities. Their octagonal shape derives from the standard horseshoe layout for teaching using audio induction loops.[106] The overall plan is horseshoe-shaped also, with nursery and multiple handicapped groups placed to one side of the gymnasium/hall and two storeys of infants and juniors on the other.

The cramped site was at a busy crossroads at Swiss Cottage. Noise was mitigated by the heavy construction of cavity-wall blockwork and concrete floor and roof slabs, and the largely blind street elevations. Ground level was sunk 2m below pavement level and this, together with the brick boundary wall, created an 'acoustic barrier' which reduced distracting traffic noise and vibration. Leakage of amplified sound from one class to another was reduced by staggering the home bases and enclosing them by solid walls rather than lightweight partitions. Their polygonal shape produced a more diffuse acoustic, aided by absorbent surfaces such as pinboards, curtains and carpets.

The result was a fortress-like, sheltering building. The expanses of white Forticrete blocks were relieved by black patent glazing and the sculptural cooling tower to the plant room. By contrast the southern elevation was highly fully-glazed. The deep plan of Frank Barnes demanded air conditioning and supplementary artificial lighting, and windows were provided for views only. The building closed in July 2010 with the move of the Frank Barnes School to a new site at the Jubilee Waterside Centre in Camley Street. Planning permission for the redevelopment of the present site was granted on 5 August 2010 and the school demolished shortly after.[107]

ENDNOTES

1. Jackson 1965, 237.
2. Herbert 1960.
3. Radford 2009, 63.
4. Hansard, House of Commons debate, 20 February 1962, vol. 654, cc.224-338.
5. *Building Design*, no. 154, 8 June 1973, p. 6.
6. The Education Act of 1902, which charged the boroughs and county boroughs with responsibility for education, was found necessary after a House of Lords ruling of the previous year, in which it was found that the School Board for London had illegally encroached into the provision of higher education (Harwood 2010, 49). There were also motives of national politics for the formation and abolition of ILEA (Maclure 1990).
7. Eg., Elliott School; Strand School, Tulse Hill and Sarah Siddons School.
8. Saint 1987, 186; Harwood and Saint 1991, 167.
9. The Ministry of Education/Department of Education and Science was based in Curzon Street in London until *c.*1972.
10. Classey 1998, 15.
11. Andrew Saint, obituary of H.J. Whitfield Lewis in *the Guardian*, 27 April 2010.
12. Minutes of the ILEA Education Committee, 15 March 1965, p.58.
13. Harwood forthcoming.
14. Eric Classey (pers.comm. 23 July 2010) and Peter Jones (pers.comm. 25 August 2010) both recall that the group structure were in place when they joined Schools Division in 1954.
15. Minutes of the ILEA Education Committee 15 March 1965, p.58.
16. Andrew Saint, obituary of Sir Hubert Bennett in *The Guardian*, 23 December 2000.
17. Classey 1998, 17.
18. Linda Suggate, pers.comm., 8 July 2010.
19. Peter Jones, pers.comm. 25 August 2010.
20. Bancroft 1973, 192.
21. Starcross School, Camden of 1954-57 (main job architect Ron Herron, demolished in 2008-09) and Islington Green School (1964-65, demolished) combined a pristine white image derived from Corbusier's purist period with the raised external walkways and bridges that would emerge in the LCC's South Bank complex. The board-marked reinforced concrete of Walworth School (opened 1965) by job architect Jim Farthing showed the influences of late Corbusier and the New Brutalism. A fine sequence of further educational buildings, such as the Chelsea College of Art (1958, Warren Chalk, demolished), extension to Woolwich Polytechnic (designed by Ron Herron in 1958-59, built in 1962-64) and London College of Fashion (1962-63, Douglas Stark) belongs to the same architectural lineage, although it lies outside the scope of this report.
22. The best-known project, albeit unbuilt, is the experimental junior mixed school for 900 pupils was commissioned from Oliver Hill in 1935, on the recommendation of Frank Pick's Council for Art and Industry (Holland 2011).
23. Unpublished report of January 2000 by Elain Harwood for the English Heritage Historic Buildings and Areas Advisory Committee, deposited in deposited in the Historians' Files, English Heritage London Region, file reference LAM180.
24. Eric Classey pers.comm. 23 July 2010.
25. For the LCC Downham out-county housing estate.
26. Classey 1998 (Eric Classey was a Schools Division architect 1954-62 and 1964-86); Hellman 2012 (Louis Hellman worked for Schools Division from 1967-73).
27. Honikman 1966, 1311.
28. Harwood forthcoming; Brockley Road Primary School, LB Lewisham, report of November 2009 by Elain Harwood; deposited in the Historians' Files, English Heritage London Region, file reference LEW108.
29. Particularly Templewood School, Welwyn Garden City of 1949-50 and Oakland Infant School, East Barnet of 1950-51.
30. One example is St Francis Drake School, Deptford, Lewisham, opened in 1963. Its plan published in MoE 1964 (Building Bulletin 23), 58-61.
31. Franklin 2009, 27, 70.
32. Brian Goldsmith, pers.comm., 15 November 2010. Goldsmith took over the design, completing the interior detailing in 1965 when Pestell started designing Prior Weston School.
33. Such figures were claimed as part an 'alterative tradition' of modernism, traced by Colin St John Wilson in a 1961 article, and elaborated by Schools Division architect Louis Hellman in a series of articles, but not applied to public architecture, let alone school design, until late in the following decade (Colin St John Wilson 1961 and 1995; Weston 1991). Hellman was in Schools Division in 1967-73 and his articles in *Building Design* include studies of William Morris (no.162, 3 August 1973, pp.12-13), C.F.A. Voysey (no.169, 28 September 1973, pp.18-21), C.R. Mackintosh (no.174, 9 November 1974, pp.28-31), twentieth century Dutch architecture (no.197, 16 April 1974, pp.18-21),

and Alvar Aalto (no.238, 21 February 1975, pp.14-15 *et seq*).
34. Source: http://www.berger.hackney.sch.uk/new_build/, accessed 15 August 2012.
35. 1970 photograph of model at London Metropolitan Archives:SC/PHL/02/0453-53.
36. Eric Classey pers.comm. 23 July 2010; Ann Webb pers.comm., 23 August 2010.
37. Hellman 2012.
38. Hellman 1975.
39. Ward 1975, 20; information on Benthal Primary School *ex* Tim Hunter-Whitehouse (present head), 20 July 2010.
40. Report, 13 July 1949, in London Metropolitan Archives:LCC/EO/GEN/1/138. The Hills 8'3" frame was deployed in London until the mid-1950s; according to Landau (1968, 44) it was in use from 1946-52.
A later example is Ashmount School, LB Islington, built on a Hills frame in 1954-57 to the designs of H.T. Cadbury Brown for the LCC. Alison Smithson worked on Hills schools during her brief time as an Assistant at Schools Division in 1949-50, and the experience gave the Smithsons 'the ability to detail Hunstanton in a very slim way'. Hunstanton was also used standard sections welded on site, as did the LCC schools (Smithson 1997, 36). The LCC had long purchased complete prefabricated buildings for temporary educational use, as opposed to building systems.
41. Quoted in Honikman 1966, 1311. Powell (1916-71) was the brother of Phillip Powell of Powell and Moya.
42. Russell 1981, 367.
43. Peter Jones, pers.comm. 25 August 2010.
44. Peter Jones, pers.comm. 25 August 2010.
45. Ivor Plummer pers.comm., 19 August 2010.
46. The first RBS school to use brick panels was Lauriston School, LB Hackney, which opened in 1971 to the designs of job architect Brian Goldsmith (pers.comm., 23 November 2010).
47. The consortium was approved by the ILEA Education Committee on 15 December 1965 (minutes of 15 December 1965, p.351.
48. Killeen 1968.
49. Killeen 1968, 1304.
50. Russell 1981, 566.
51. Hellman 2012; Eric Classey pers.comm. 23 July 2010.
52. Ringshall 1983, 80.
53. *Architects' Journal*, vol. 160, no. 30, 24 July 1974, p. 203.
54. *Architects' Journal*, vol. 159, no.15, 10 April 1974, p.774.
55. Ringshall 1983, 157.
56. *Architects' Journal*, vol.159, no.3, 16 January 1974, pp.125-27.
57. Beattie 1972. Mina Road (later Walworth) School in Southwark was remodelled by Michael Morris of Schools Division as early as 1957 (Michael Morris, pers.comm., 1 September 2011).
58. Kay 1968; Temple 2008, 324-25.
59. *Architects' Journal*, vol. 158, no. 47, 21 November 1973, p.1236.
60. Stewart McColl pers.comm., 6 June 2010.
61. Jencks 1987, 14.
62. *Architectural Review*, vol. 154, no. 919, September 1973, pp. 179-84.
63. *Wood*, vol. 30, no.2, February 1965, pp.29-31.
64. Minutes of the London County Council, 2 June 1964, p.598.
65. Institute of Education Archives: ME/C/1/6, Notebook 72, p.49.
66. David Medd, pers.comm. to Elain Harwood, 17 October 2004. The two site solution was an idea of Derek Morrell's (Institute of Education Archives: ME/T/7: David Medds' lecture notes for Architects and Buildings Branch meeting on 30 August 1987).
67. Minutes of the ILEA Education Committee, 15 March 1965, p.58.
68. Minutes of the London County Council, 2 June 1964, p.599; *Architects' Journal*, vol.147, no.10, 6 March 1968, pp.524-25.
69. Minutes of the London County Council 2 June 1964, p.599.
70. *Architects' Journal*, vol.147, no.10, 6 March 1968, p.524.
71. *Architects' Journal*, vol.147, no.10, 6 March 1968, p.525.
72. Minutes of the ILEA Education Committee, 26 May 1965, p.152.
73. Minutes of the ILEA Education Committee 26 January 1966, p.391.
74. Robinson 1999, 71, 72.
75. http://edspace.co.uk/evelyn/msgbuilding.php, accessed 15 August 2012.
76. Ringshall 1983, 73-74.
77. *Architects' Journal* vol. 156, no. 45, 8 November 1972, pp.1067-70.
78. *Design*, no.280, 1972, pp.48 – 54 (p.48).
79. National Society 1816, 188.
80. Ward 1976, xi.
81. Ringshall 1983, 139. Bow Common was visited by the architects of Waterfield Secondary School (qv). A proprietary portal frame with plastic-coated, rolled steel sheet cladding was also used at an extension to the Langdon Park Secondary School of 1977-79 by job architects John Weller, Neville Morgan, Keith Leicester and Brian Alexander. The industrial aesthetic was celebrated

with a bold primary colour scheme and parts such as staircases, air-inlets and boiler flue. At Bellenden Primary School of 1980-82, a tiny site suggested a deep plan spanned by a series of industrial portal frames to job architect Linda Suggate. The insulated and cheerfully-painted steel roof incorporates an internal courtyard and its deep overhang shelters external work spaces.

82. Linda Suggate, pers.comm., 8 July 2010; Ivor Plummer pers.comm., 19 August 2010; Ann Webb pers.comm., 23 August 2010.

83. Goldfinger's first involvement with school design was in 1937 when, assisted by Mary Crowley née Medd, he designed a prefabricated timber nursery for the manufacturers Boulton and Paul, which was never went into production (Franklin 2009, 53). In 1950-51 he built two small primary schools in Hammersmith and Wandsworth, both listed.

84. The school was opened in September 1966 and the assembly hall was completed by the end of 1967 (*Architect and Building News*, vol.233, no.5, 5 June 1968, pp.848-56 (p.848).

85. Undated English Heritage report by Elain Harwood; deposited in the Historians' Files, English Heritage London Region, file reference CAM529.

86. Ringshall 1983 113-116; *Pimlico School, Lupus Street, Westminster, London SW1*, report of March 1996 by Elain Harwood entitled; deposited in the Historians' Files, English Heritage London Region, file reference WM918.

87. Medd, cited in Classey 1998, 32.

88. Jacobs 1961.

89. Dannatt 2008 128.

90. EFL 1967b. Granada Elementary School, California by Callister and Rosse, opened 1964, and Harris Hill Elementary School by Parks, Morin, Hall, Brennan & Sattelberg, Rochester of 1970 are also based on fused hexagons (EFL 1965, 22).

91. GLC architects Linda Suggate and Vic Hindley consulted ILEA educationists on the spatial implications (Linda Suggate, pers.comm., 9 July 2010).

92. Linda Suggate, pers.comm., 9 July 2010.

93. Members of the design team were taught by Richard Rogers and Norman Foster at Regent Street Polytechnic and visited buildings designed by their joint practice Team 4 (Linda Suggate, pers. comm., 9 July 2010).

94. The team visited St Paul with St Luke Primary School, Bow Common and Pollards Hill Middle School, an open-plan school in LB Merton (Linda Suggate, pers.comm., 9 July 2010).

95. *Architect's Journal*, vol. 175, no. 4, 27 January 1982, pp.31-48 (p.42).

96. Anne Webb went on employ a similar section at Olga Primary School (Ringshall 1983, 162-163).

97. http://www.greenwich.co.uk/news/05785-plans-for-redeveloped-john-roan-school-revealed/, accessed 15 August 2012.

98. *Architects' Journal*, vol.150, no.35, 27 August 1969, pp.505-522 (p.512).

99. The plan resembles the Volksschule Celle, by O Haesler (Meyer-Bohe 1974, 30).

100. *Architects' Journal*, vol.150, no.35, 27 August 1969, p.510.

101. *Architecture d'Aujourd'hui*, vol.121, June/July 1965, pp. 65-67. The school was also published in Roth 1966.

102. Minutes of the ILEA Education Committee 18 May 1965, p.486.

103. Meyer-Bohe 1974, 167-70; *Interbuild*, vol.13, June 1966, pp.12-15; *L'Architecture Française,* no. 351/352, November/December 1971, pp.22-23; *Deutsche Bauzeitung*, vol. 107, no. 4, April 1973, pp.374-75; *Cuadernos de Arquitetura*, no.89, May/June 1972, p.56; *Architektur Wettbewerbe*, no. 105, 1981, p. 11-12.

104. Ailsa Street Development Brief, prepared by LB Tower Hamlets in 2003. Source: http://www.towerhamlets.gov.uk/idoc.ashx?docid=df513a9d-f5cd-47a0-9d05-0c1bc2cc500f&version=-1, accessed 15 August 2012.

105. Plummer benefitted from the advice of his Group Leader Brian Goldsmith, a specialist in design for the disabled (Brian Goldsmith pers. comm., 23 November 2010).

106. Plummer also employed octagonal geometry at the Hermitage Primary School, Wapping, LB Tower Hamlets of 1985-89.

107. Source: http://www.camden.gov.uk/ccm/navigation/education/education-initiatives-and-consultations/building-schools-for-the-future/, accessed 15 August 2012.

LEICESTERSHIRE

Figure 4.92: Leicestershire: location of gazetteer entries.

Leicestershire

Leicestershire is a modest-sized county of no great extremes save in the unexpectedly rugged intrusion of ancient granite that gave birth to Charnwood Forest, and much of it remains predominantly agricultural. The west side of the county, however, experienced the growth of mining at the end of the nineteenth century and of light engineering trades early in the twentieth, and like the similar areas of western Nottinghamshire `and eastern Derbyshire immediately to its north there developed a skilled working class with strong ambitions for its children to better themselves through education. The school population continued to expand rapidly in the post-war period, rising from 43,900 in 1948 to 72,800 by 1968, despite losses when Leicester expanded its boundaries in 1966. The city of Leicester remained a separate education authority until 1974, when the county subsumed both it and the adjoining county of Rutland. Most schools were new buildings to meet the expanding population, but those at Quorndon and Coalville were rebuildings of old grammar schools, the latter on a new site.

Leicestershire's generally rural makeup was reflected in the county's politics. It had a non-party leadership through most of the twentieth century, dominated by the local gentry, which provided an extraordinarily old-fashioned and stable administration. There were just two chairmen of the county council between 1947 and 1971, spanning the career of its mighty Director of Education, Stewart Carlton Mason (1906-83). Mason had become a teacher despite family opposition, but after ten years working at Berkhamsted and Harrow schools he joined the Ministry of Education as its inspector for Cambridgeshire, where he came under the influence of its charismatic Chief Education Officer, Henry Morris, known for his promotion of village colleges to enable school facilities in rural areas to be used by adults, particularly out of school hours, and of architecture and art. In 1944, after working for the Admiralty, Mason became the Ministry's inspector for Leicestershire, whence his family originated and where the Chief Education Officer, Sir William Brockington, had held the post since 1903 and was now over 75.[1] Seizing his opportunity, there being no Deputy Director, Mason compiled the county's development plan for implementing the 1944 Education Act virtually single-handed and duly succeeded Brockington in 1947.

Mason inherited a backlog of building work, for Brockington had been parsimonious in this regard, and there had been no county architect before the war. His reign as Education Officer can be divided into two halves. In the years until 1957, supported by the paternal Sir Robert Martin, chairman of both the county council and its education committee, he brought in his own educational advisers and developed a programme of village colleges attached to secondary schools, and village centres in the smaller communities based around primary schools. The first college, part of Ivanhoe Secondary Modern School at Ashby de la Zouche, was built in 1953-54 by the County Architect, Thomas A. Collins, a bland design of brick with large areas of glass but which was opened by Henry Morris himself. This unremarkable style was also adopted for the new secondary schools built under Collins's command, beginning with the Sarson Secondary School for Girls in Melton Mowbray of 1948 (demolished), and Mason later lamented their large corridors and inflexibility.

The schools of the 1950s were most striking for the works of art commissioned as part of their design, again reflecting Morris's influence. They included a number of large-scale figures by Peter Peri, including reliefs on the wall at the Humphrey Perkins School at Barrow-upon-Soar (1955). fig.s by him elsewhere appeared to be falling or jumping from the side of the building, notably *Atom Boy* (properly *Man's mastery of the Atom = Self Mastery*) at Longslade Community College, Birstall (1960), and which now all seem to have been removed into storage for safety. Mason believed that 'schools which placed value on the arts and encouraged individual creativity in them were almost invariably schools where you would find interesting and original work going on in … academic subjects'.[2] Such ideas reflected those of Herbert Read, whose *Education through Art* was published in 1943, and Mason was also inspired by Nan Youngman, Morris's art adviser at Cambridgeshire, who instigated a scheme for the purchase of works by living artists which could be loaned out to schools. Mason also supported his music adviser, Eric Pinkett, in the creation of the Leicestershire Schools Symphony Orchestra, which gained international renown.

Primary Schools

Mason was nevertheless personally very interested in architecture, and was described by the Deputy Architect, Jim Smith, as 'the exact opposite of the indifferent client' and adept in reading plans.[3] A good friend from the war was the architectural historian Alec Clifton-Taylor. Mason's interest first appeared in around 1960 in the building of primary schools, which are far less well known than the secondary schools that followed. Leicestershire joined SCOLA after building a number of schools using the Intergrid system, such as the Brockington College at Enderby, opened in 1957, but committed itself to a minimum of commissions, not all of them schools. None are significant.

Leicestershire adopted the 'hen and chicks' approach in 1960-63 at **Rolleston Infant School**, Glen Parva, where three clusters each of three classrooms with their own lavatories and a small work space were set around a six-sided central hall with a concrete shell roof. This was the first Leicestershire primary school with a dedicated library area as part of the design, and was testament to the slow and steady evolution of educational and architectural ideas in the county. For Mason it expressed the new ideas of learning through discovery instead of by rote, and to explore the possibilities of grouping classrooms vertically rather than placing similar age groups together.[4] A timber hyperbolic paraboloid was used at Wigstone Fields Infant School, by the County Architect's Department, in 1960, to create a rectangular hall, with the hypar nowhere rising more than five feet.[5] Still more novel techniques were employed for hexagonal halls in subsequent schools, with the Timber Development Association designing that at Thorpe Acre Infant School, Loughborough, in 1963 with J. N. Pitts the project architect.[6] Timber was also used for **Glenmere School, Wigston**, originally for juniors, by John Barton of Farmer and Dark in 1964, with a circular plan centred on the hall, while the secondary school at Braunstone, on the edge of Leicester, was formed in 1961 of six concrete shells.[7] Glenmere was the start of a very fruitful collaboration for Farmer and Dark with Leicestershire County Council that included six schools, all designed in around 1964.

Figure 4.93: Birstall Primary School; Peter Moro and Partners, 1963-64. Photograph © Elain Harwood.

Some of the later schools remained generally informal in plan, such as Sherard Primary School, Melton Mowbray, where two groups of classrooms were set around activity areas off the central library space, but more noteworthy are the schools made up of formal hexagons or which adopt a circular plan. Examples of the former include **Birstall** of 1963-64 by Peter Moro and Partners, hexagonal classrooms set in two groups still with a large hexagonal hall at its centre (fig. 4.93), and **Holywell, Loughborough**, opened in 1968 but which was largely rebuilt after a fire in 1988.[8] A polygonal plan survives well at **Oadby Launde** (1964), designed as a tessellation of hexagons by the County Architect's Department on a timber frame, forming a compact infant school at the entrance to a campus that includes an older and larger junior school.[9] The use of polygonal spaces, begun by Moro, grew out of the need to reduce circulation spaces and was a natural consequence of the 'hen and chicks' mode, but reflected their development in the United States in the late 1950s.

Mason became increasingly interested in encouraging self-discovery and informal group working rather than whole class teaching, ideas that became increasingly important everywhere in the 1960s. Slowly the library, used as a quiet area as well as for storing books, superseded the hall as the centre of the school, in primaries ahead of secondaries, and by 1970 was being called a 'resource area'. The simplest and most dramatic example of a mature Leicestershire primary school is **Middlefield** (now Richmond), in Hinckley, completed in 1970 by Tom Collins's successor, Thomas Locke (fig. 4.94). The classrooms are set in a circle around a central library with a small meeting room on top (now mainly used for storage), each opening on to a large verandah and with a large hall set apart on one side.[10] The use of a very deep, top-lit plan instead of

Figure 4.94: Middlefield School, Hinckley. Photograph © Elain Harwood.

having large areas of glazing from the sides is a significant development in Leicestershire school planning; easy to take for granted after looking at Hampshire schools, it was radical in the late 1960s. The building was refurbished in 2010-11 with new windows and doors, and the impact of this is unknown.

The sidelining of the hall is a striking feature of Leicestershire planning, seen too in the more complex **Eastfield Primary School at Thurmaston**, the only school in England by Ahrends, Burton and Koralek and built in 1966-68, where the plan revolves around different levels, thanks to the steep site (fig. 4.95). Here there is a central courtyard, with an ambulatory around it that is separated by activity areas from the main classroom spaces, which are grouped in pairs. The library is by the higher and most important of the two entrances and the hall is again on one side, physically separated only by a flight of steps and with the stepped roof incorporating rooflights that features in much of their work from this time, particularly in designs by Paul Koralek such as this, the library at Portsmouth University and the John Lewis store at Kingston.[II]

Figure 4.95: Eastfield Primary School. © Elain Harwood.

Glenfield Frith School, in 1966, was one of the first in the county planned for team teaching, with semi-open plan classrooms grouped in fours. A more fluid plan was offered by the square form of the little infants' block at **Fairfield Primary School, Wigston**, built c.1969 with three classrooms and an activity area around a amoebic-shaped library. It has since been much extended. Mason stressed the advantages of carpeted floors, acoustic treatments and team teaching, but while Asfordby and Market Harborough North, both from c.1971, comprised a single great room set around a central resource centre and quiet areas, most spaces elsewhere remained defined, with classroom, activity and quiet areas, rather than the single space or 'big room' popular in the United States.[12] Two schools by the County Architect's Department under Thomas Locke within Leicester (joined to the County for educational purposes in 1974), Rowlatts Hill (1976-78) and Merrydale (1978-81) had large shared classroom areas for team teaching but have since been heavily sub-divided.

Secondary Schools

William Brockington introduced higher and junior elementary schools when one of his head teachers was called up in the First World War, and he began to stream children into junior and senior elementary levels by means of a general selection examination as early as 1920. He thus introduced senior elementary or secondary schools ahead of the Hadow Report in 1926, to centralise secondary education and to save money.[13] By 1939 75% of children over the age of eleven were accommodated in secondary modern schools. Secondary schools were divided into grammar schools and secondary moderns. Leicester city was one of the few authorities with a strong technical grammar stream, dating back to 1928, but this was not developed in the county despite its engineering industries and Brockington role as an adviser to the Spens Report.[14]

Mason's first secondary modern schools were built of brick and conventional in design, though with an emphasis on art, music and science. The most interesting new secondary school of the 1950s architecturally was arguably the rebuilding of Coalville's **King Edward VII Grammar School** (now King Edward VII Community College) by Denis Clarke Hall in 1958-62, for 570 boys and girls including 120 in the sixth form. Set on a sloping site, its chief features are the shell roofs to the assembly hall and gymnasium, and a central split-level courtyard with a bridge that features a screen by Anthony Hollaway, then working as a consultant for the London County Council.[15]

Brockington's examination and a system of interviews, much updated, remained the basis of selection. But when Mason's second son failed the 'Eleven Plus' he came to share the concerns of the country's aspirational skilled working class that bright children were missing out and that some considered themselves 'failures' at age eleven.[16] He noted that late developers flourished at Leicestershire's one bilateral school, a consequence of boundary problems on the edge of the county at Barrow-on-Soar, opened in 1954 with a two-form entry for local secondary modern children and two grammar school streams serving a wider area. Mason found that there was an increasing demand for qualifications from local employers, particularly in technology, and also that music and arts flourished less well in selective schools.

'One morning', Mason later recalled, 'I was shaving and I thought, "My God, what would happen if instead of having grammar schools and secondary modern schools parallel with each other we put them end on to each other with the break at fourteen?"'[17] Already the theorist Robin Pedley, teaching in Leicester, had suggested building a lower school for children aged 11-14 with its own head and social organisation, followed by an upper school to which all children would move - if only for a year, while Sheldon Heath School, Birmingham, had opened in 1955 with junior, middle and upper schools side by side. Mason's idea thus had parallels elsewhere.[18] What made it special was the speed of its adoption and subsequent rapid extension across the county. The Ministry accepted the proposal as it needed no new buildings. The secondary moderns, with their smaller science provision, became a form of middle school; renamed 'high schools', they took all children from eleven to fourteen, from which those who undertook to stay on until sixteen then moved to a grammar school. Mason made a presentation to the Education Committee in March 1957, and the experiment began that September in two urban areas where grammar schools could be adapted, at Hinckley and in the suburban area south of Leicester at Oadby and Wigston. The experiment was extended from 1959, until in 1969 Leicestershire became the first English county to be entirely comprehensive. After 1970 all pupils transferred to the upper school at fourteen.

Most of the new schools in the 1950s were designed by the County Architect's Department under Tom Collins, but there was a hiatus in building after 1957, partly due to the reorganisation. Donald Jones recorded that 'Mason was convinced that Leicestershire was deliberately starved of funds by civil servants at the ministry who were not sympathetic to his secondary school reorganisation.'[19] There was then a surge of building in the mid- and late-1960s, when much of the work was given to private architects. Chief of these were John Barton of Farmer and Dark and Robert Headley of Gollins, Melvin, Ward and Partners, who had previously worked for local authorities and British Railways (Midland Region). Farmer and Dark produced mainly primary schools, but also the flagship upper school, **Countesthorpe College**. Gollins, Melvin, Ward worked on Loughborough College of Education, **Quorn Rawlins Upper School**, Lutterworth Grammar School, and **Bosworth and Wreake Valley colleges**. Like Collins's team, these private practices became adept in using space and materials as economically as possible, notably by reducing circulation space and combining functions such as dining areas within assembly halls. Very deep single-storey plans around a central resource centre became the defining features of the two new high schools and three upper schools that were built at the end of the decade, in which open planning played an important part.

Mason wrote in 1969 that:

> a middle school, if we could have built one from scratch, would have been almost identical to a secondary modern except that it would have had more specialist laboratories to cater for the "academic" pupils. An upper school would have been very similar to a selective grammar school except that we would have wished to add a few more practical rooms. Our growing experience over the last ten years has shown us that the middle school is not just the lower half of the secondary school, as we used to understand it, but is developing a character and ethos of its own.

Oadby Manor School, opened in 1968, now runs as a middle school for 10-14 year olds, and was followed in 1973-74 by Countesthorpe, now Leysland High School, by Farmer and Dark serving 11-14 year olds. Both were designed with groups of classrooms round an activity area, with a very large library and resource area at the centre of the deep plan. Equally large, deep-plan blocks house a lecture theatre, science laboratory and handicraft rooms, with some more conventional classrooms for the older children. Oadby Manor, now much extended, was described by the *Buildings of England* as having 'an unprepossessing brick exterior', but the two have some interest as developing the plans for middle schools defined by Mary and David Medd at Delf Hill, Bradford (page 39).

A study of Leicestershire schools by Ken and Kate Baynes for the magazine *Design* suggested that it was at the junction where arts and crafts subjects met that the most creative work was being realised.[20] **Rawlins College** at Quorn in 1967 was the first to open a new building that threw together the art, handicraft and housecraft departments under a single head, at Mason's behest, and this became a key tenet in the design of new upper schools. Rawlins College was an upper school evolved out of an older charity school turned girls' grammar school, and its additions by Gollins, Melvin, Ward and Partners, while architecturally unassuming, exemplify Mason's abiding interests in resource centres and the arts.[21]

The Leicestershire building programme was dominated by three wholly new upper schools or college, built in 1967-71. The basic themes of a central resource centre, spaces

Figure 4.96: Bosworth College, Desford; Bernard Schottlander's 3B Series No.2 *of 1968 is the focal point. Photograph of 1997 by Mike Williams – English Heritage; FF003527.*

for art, drama and sports that could be shared with the community, and a separately defined sixth-form centre recurred through each complex, although superficially the three looked very different. **Bosworth College, Desford**, built in 1967-70 to the designs of Gollins, Melvin, Ward and Partners comprises low ranges on a steeply sloping site grouped around courtyards, with large sports facilities to one side. An original proposal to clad the school in fibre glass was rejected by the councillors, who favoured using local brick – an important industry in the county. The change of materials led Mason and his contemporaries to criticise Bosworth College, but the hard red bricks have proved more durable in the long term than has GRP elsewhere.[22] The most novel feature are the deep plans to the arts and science blocks, which are single-storied and top-lit; their stylistic form seems very strongly influenced by the single most important modern building in the county: Leicester University's Engineering Building – red brick, canted plinths and patent glazing (fig. 4.96). The college also has a large and rewarding art collection, including sculptures by Bernard Schottlander, Bryan Kneale and Barbara Hepworth.

Countesthorpe College, designed by John Barton of Farmer and Dark in 1964 and built in 1967-70, is the quintessential Leicestershire school taken to a massive scale, like all the three new upper schools intended for 1,440 pupils aged between fourteen and eighteen. There is a circular plan around a resource area, with large single-storey, open-plan areas for science, art and design, the plan reflected in a sculpture at its heart (fig. 4.97). It is exactly contemporary with Pimlico School, and its understatement and flexibility made a striking contrast at the time. Countesthorpe achieved early controversy for the methods of the first headmaster, Tim McMullen, who formed a schools council with staff and student representatives, and delegated all decisions on the running of the school to the staff. Inspectors in October 1973 considered that the school was 'excessively dirty and damaged', a far cry from the gleaming original image which has now been restored.[23]

Figure 4.97: Philip King's Dunstable Reel *in the circular courtyard of Countesthorpe College. Photograph by James O. Davies – English Heritage; DP138304.*

Figure 4.98: Wreake Valley College, Syston; Gollins Melvin Ward and Partners,1969-71. © Elain Harwood.

The most architecturally striking of the new colleges was **Wreake Valley** at Syston, built in 1967-71 by Gollins Melvin Ward and Partners, a battered cream-tiled battleship of three monumental storeys with a zoomorphic boiler-house funnel (fig. 4.98). A double-height resources centre is set over a fully-raked auditorium, and ringed by classrooms. Around it are spread a single-storey science area, a great open-plan design centre, and a sixth-form block with its own social centre that expresses its separate status by being clad in brick. Unusually, there is little art; the building itself is the sculpture.[24]

What makes these three schools so striking is that they redefined the character of post-war secondary schools were about, into something less formal and more akin to an adult college of further education or sixth-form college. Their flexibility was held against the rigid contemporary Pimlico School, also opened in 1970.[25] The three buildings are all different in style, but share common ingredients in their plan, all with a central resource centre, open-plan design and science area and distinct areas for use by the sixth form and adult evening classes; all have very generous facilities for drama and physical education.

Art in Schools

Leicestershire Education Committee is as important for its programme of art in schools as for its buildings. The programme initiated in its schools by Mason reflected the shift in modern sculpture towards abstraction. Like Henry Morris, Mason was convinced that art in schools encouraged creativity among the pupils. He began incorporating art into new schools in the 1950s, working with Alec Clifton-Taylor and later Bryan Robertson of the Whitechapel Gallery as County Art Advisers. Mason himself became Art Adviser

after retiring as Director in 1971, and the programme lasted until 1984 under his successor Graham Fairbairn. Like John Newsom, Director of Education at Hertfordshire, Mason dedicated a percentage of his building budget to art, here about a quarter of one per cent, supplementing it with a 'director's grant' at his disposal.[26] He also used the profits from publishing two religious service books, and solicited money from the Arts Council, Contemporary Arts Society and private donors. While some of the sculptures were chosen or commissioned for a specific location, others were intended to circulate around the schools.

The early choices were often dramatically representational, like the series of 1950s commissions to Peter Peri, whose work Mason had seen in the Festival of Britain and a sculpture exhibition in the Architectural Association.[27] Subsequently Mason encouraged a younger generation of abstractionists, including Philip King and Bryan Kneale, who in the early 1960s began divesting sculpture from its plinth. This shift was symbolised by the simplistic concrete sculpture, *Declaration*, from 1961 and purchased in 1966 (now at Beaumanor Hall, Woodhouse), but which is evident in more powerful works such as King's *Dunstable Reel* at Countesthorpe and Kneale's *Avila* at Desford.[28]

Was Mason buying pictures for the children, the artists, himself or to satisfy a grander cultural ambition? The answer seems to have been all of these, made possible by his position as sole final arbiter. The local councillors were appeased when they learned how the collection had appreciated in value.[29] Mason became one of the selectors of sculptors for the Peter Stuyvesant Foundation City Sculpture project, which commissioned new works in six provincial cities and solicited commercial sponsorship for public sculpture in the early 1970s. Much of the sculpture survives, not always in good condition, but many of the collection's paintings and prints were sold in March 2011.

The new schools were accompanied by a rapid expansion in higher education, some of it by the County Council. A university college was founded in Leicester in 1926 and was awarded full university status in 1957, while Loughborough Technical College was founded in 1909 to promote engineering. In the 1950s it was expanded by the County Council, becoming England's pre-eminent College of Advanced Technology before being made a full university in 1966. The County Architect's Department designed many buildings there and in the adjoining College of Education, while the County Education Officer brought in sculpture, so that it shares affinities with the schools programme. The Loughborough College of Art and Design and Leicester School of Art also had a hand in the provision of art in schools. All the Loughborough institutions are now part of the university.

Gazetteer

Primary Schools

¶ **Rolleston Infant School,** Hillsborough Road, Glen Parva, Leicester; Leicestershire County Council Architect's Department, (job architect G. C. Thompson), 1960-62.

Now part of a larger primary school and within the city boundaries in 1966. This was the start of the development of informal plans for Leicestershire, with three groups of classrooms set in 'L'-shaped wings around a central hall, and with each group having a small workspace or library area. The playground features a play sculpture by Austin Wright, *Crocodile*, commissioned in 1961.[30]

¶ **Glenmere County Primary School**, Estoril Avenue, Wigston; Farmer and Dark (job architects John Baron and Alistair Tait), 1963-64.

This was one of six schools designed by Farmer and Dark for Leicestershire. John Barton had worked in 1955-57 on the development of the A75 system with the firm A. H. Anderson Ltd, but though of timber, Glenmere did not use that system, which was based on a grid. Glenmere is circular, and has a steel central drum, ring beam and ties to the hall. The plan comprises a pinwheel centred on a twelve-sided hall, with a ring of classrooms set in pairs behind a practical area and separated by an internal corridor overlooking a courtyard and two glazed links from the hall, and a staffroom and offices at one end. There are timber columns and folded plate roofs, reflected in the building's zig-zag profile with steel trusses to the hall and brick end walls. The school is popular and in excellent condition, with its original glazing and most of its original fittings, including sinks and coathooks in the corridors. *Official Architecture and Planning* described it as having 'the look of a much refined stable companion' to the County Architect's own Oadby Launde school nearby.[31]

Figure 4.99: Classroom at Birstall.
© Elain Harwood.

¶.**Birstall Primary School**, Greengate Lane, Birstall; Peter Moro and Partners (partner in charge Michael Mellish, assisted by Colin Hodson), designed 1962, built 1963-64.

This school is made up of octagons, the largest for the hall, the next largest for the kitchen, and with seven small octagons in two groups gathered round as classrooms. Square linking areas house quiet rooms, lavatories and a cloakroom. The hall has a steel frame, and the roof is lined internally; the other elements are all of brick, with large areas of steel-framed glazing and timber roofs lined with painted wood wool panels. Unfortunately, however, the painted screen in the entrance hall has gone, and there is not quite the elegance of the same architects' Fairlawn School, Lewisham.[32]

¶ **Oadby Launde Infant School**, New Street, Oadby; Leicestershire County Council Architect's Department, 1963-64.

This also has a central hall, this time hexagonal, with three pairs of classrooms set off it. Kitchens, the entrance and offices, and a terrace separate the pairs. Again the construction is timber, with portal half-frames that rise over a clerestorey for the hall and pyramidal roofs for each classroom. Here, however, the classrooms are expressed as a series of pods clad in cheap brick, and there has been some window replacement. It is a less appealing design than Glenmere nearby.[33]

¶ **Eastfield Primary School**, Highway Road, Thurmaston; Ahrends, Burton and Koralek (partner in charge Paul Koralek), 1966-68.

This was ABK's only school in the United Kingdom. It was intended as a junior school, but was changed to a primary for 5-11 year olds during construction. The building is set on a slope, with the entrance at the top of the site with a library next to it, and classrooms set in four pairs round a central courtyard, with the two next to the library added slightly after the rest of the school opened in 1968. A further addition has been made since 2002. Each pair of classrooms shares a work area next to the corridor, in a semi-open layout, and an enclosed quiet area behind the lavatories. To the right steps lead down to an assembly hall-cum-dining area adjoining the kitchen and staff room. By being set into the slope the bulk of the building (not large in any case) is reduced, and being set away from the road it can only really be appreciated from the grounds. It is clad in brick with high sloping windows, stepping down over the entrance, a feature that was to be repeated in later buildings by ABK, notably Koralek's library for Portsmouth Polytechnic, now University. The *Architects' Journal* commented that 'the building is exciting and stimulating to look at. In an almost Victorian way, it is full of odd corners, and surprises, changes of level and view that are calculated to stimulate the imagination of the young.' It is also exquisitely detailed. The impact of the recent addition is unclear, and a play sculpture by Norman Dilworth in the courtyard may not survive.[34]

Figure 4.100: Entrance to Eastfield Primary School, Thurmaston. © Elain Harwood.

¶ **Fairfield Primary School**, Cheshire Drive, Wigston; Leicestershire County Council Architect's Department, c.1968.

This was originally a square box with outdoor areas in three of the corners and a central reading area, but has been much extended.

¶ **Holywell School**, Berkeley Road, Loughborough; Leicestershire County Council Architect's Department with F. K. Hicklin of T. H. Thorpe and Partners, 1967-68.

A large school for over 500 pupils originally arranged as a tessellation of hexagons, with a central library between the junior and infant sections, it was mostly rebuilt after a fire in 1988.[35] Hicklin was previously the county architect at Cornwall.

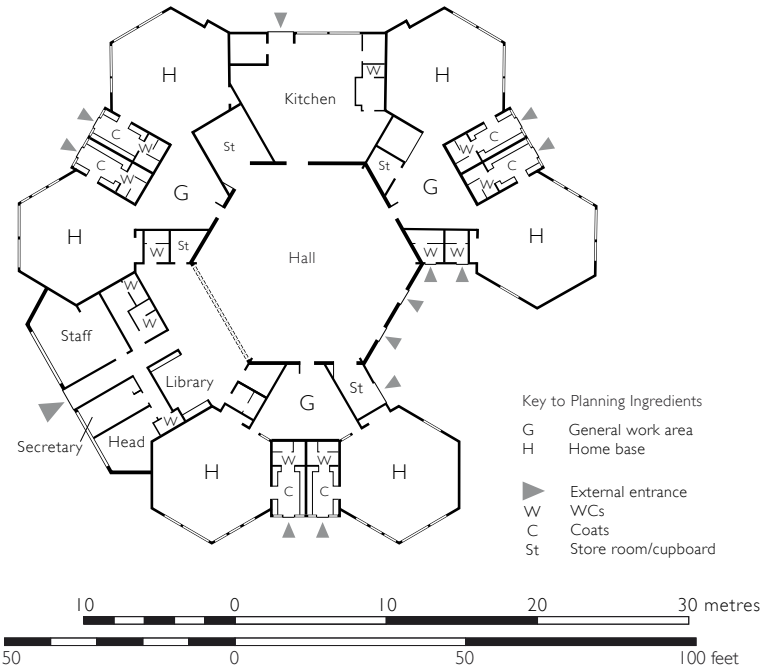

Figure 4.101: Oadby Launde Infant School

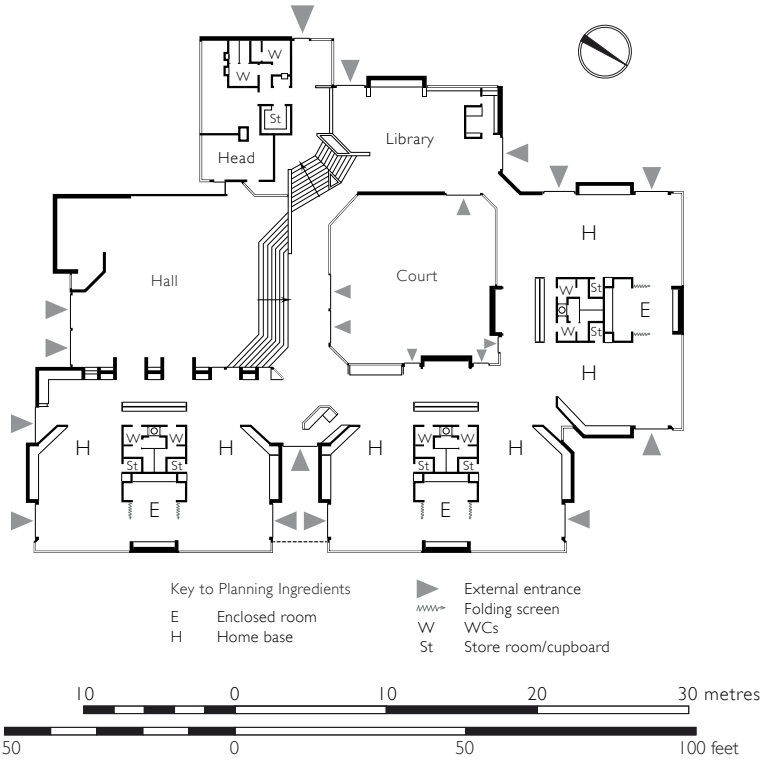

Figure 4.102: Eastfield Primary School, Thurmaston

¶ **Middlefield School** (now Richmond School), Stoke Lane, Hinckley; Leicestershire County Council Architect's Department (job architects E. D. Smith and J.N. Pitts), 1968-70.

This school was designed for juniors between the ages of 8 and 11 on a two-form entry plan. The circular plan form adopted gives a high ratio of internal floor space to external walls and , with the teaching area consisting of eight bases radiating from a central core, the noisy and messy area is concentrated on the perimeter of the building, with verandahs for outdoor work beyond. The quieter zones, the library and studio over, are a focal point in the middle of the school. Sliding, folding partitions between each pair of teaching bases can be drawn back to produce a more open plan when required for group teaching. The building is of steel frame construction with flat roofs of timber joists, wood wool slabs and roofing felt. Fixed walls are of grey sand-lime brick internally, local red bricks without, with timber windows, and carpet for the library, studio and stairs. Some alteration has accompanied the rebuilding of the adjoining infants.[36]

¶ **Rowlatts Hill Primary School**, Balderstone Road, Leicester; Leicestershire County Council Architect's Department, 1976-78.

The open plan is now sub-divided.

¶ **Merrydale Infant School**, Claydon Road, Leicester; Leicestershire County Council Architect's Department, 1978-80.

The open plan is now even more subdivided and extended.

Figure 4.103: Merrydale Infant School, Leicester; Photograph © Elain Harwood.

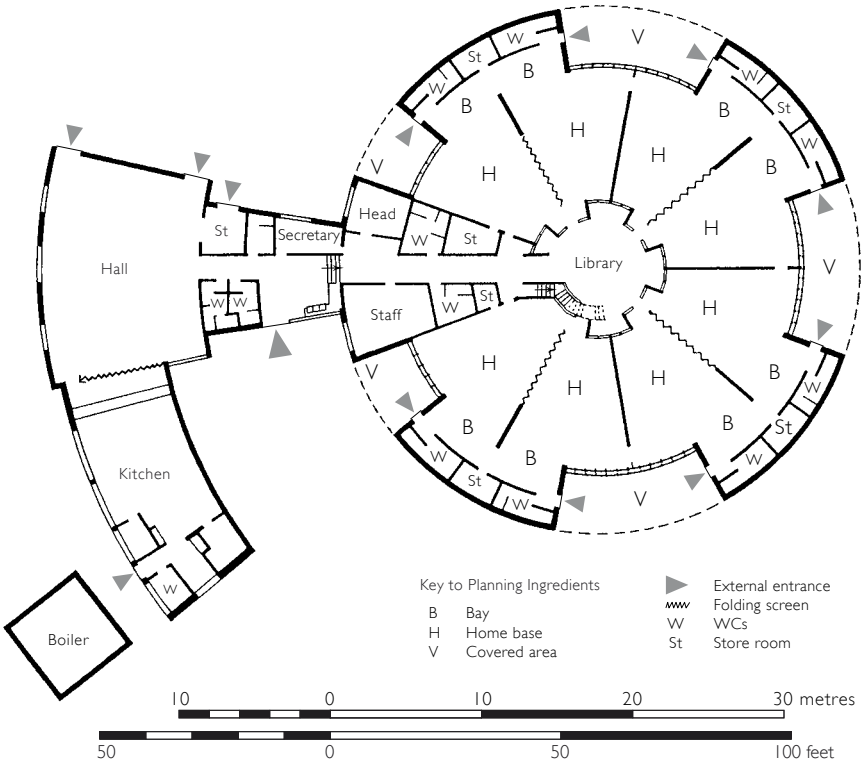

Figure 4.104: Middlefield School, Hinckley.

Upper Schools

¶ **King Edward VII Grammar School** (now King Edward VII College), Warren Hills Road, Coalville; Denis Clarke Hall (assisted by A. Hynes), 1958-62.

This replaced an older building from which a war memorial was retained; it was originally planned as a conventional grammar school for 570 boys and girls. The buildings are set around a split-level courtyard, with an assembly hall and gymnasium on one end. The engineer was the specialist designer of concrete shells, Dr K. Hajnal-Kónyi, an émigré who had worked on the Frankfurt Grossmarkthalle, and the assembly hall has a segmental vault roof, with curtain walling to the classrooms – now renewed to a much heavier section. Extensions and alterations have made the original buildings hard to appreciate; a mural by Anthony Hollaway, commissioned by Mason in 1961, still forms a wall to the walkway across the courtyard, but a stained glass window by Margaret Trehearne in the religious studies room (above the main entrance) has been boarded over and is now only visible from the roof opposite.[37]

¶ Additions to **Rawlins College** (now Rawlins Community College), Loughborough Road, Quorn; Gollins Melvin Ward and Partners, 1967.

This was an adaption of a former girls' school on an ancient foundation. The modest new buildings of concrete block included an open-plan design centre, science area, library and hall.[38]

¶ **Bosworth College,** Leicester Lane, Desford; Gollins Melvin Ward and Partners, 1967-69.

Dixie Grammar School, Market Bosworth, an establishment of medieval origins, was in 1969 the last grammar school in Leicestershire to go comprehensive, when a high school and upper school were built on separate sites, and the old building of 1828 put to new uses. The plan of the upper school, for up to 1,400 pupils aged 14 to 18, was determined by the curriculum, which concentrated on general humanities and scientific courses, requiring large teaching areas, and an exceptionally wide range of design and crafts courses - ranging from metalwork to photography to town planning – occupied one of the first open-plan design centres in the country; drama as well as physical education also formed part of the curriculum. Near the entrance and the humanities block, i.e. at the heart of the plan, is the resources centre, called that rather than a library from the first.

At the centre of the college is a large sculpture by Bernard Schottlander, *3B Series No.2*, of 1968 (purchased in 1969), whose black frame contrasts boldly with the red brickwork of the building. Its sister piece, *3B Series No.1*, painted red, sits in a similar position in the middle of Warwick University. By the entrance, embedded in the asphalt, is Bryan Kneale's *Avila*, created in 1975 and purchased in 1976. There is also a small piece next to reception by Barbara Hepworth, *Coré*, from 1955-56, which was originally loaned by her to Dixie Grammar School, but which was then bought by Leicestershire County Council. Inside, *Four Rings* by Austin Wright of 1966 is set on a pedestal.[39]

Figure 4.105: 1967 library at Rawlins College, Quorn, one of several additions by Gollins Melvin Ward and Partners. Photograph © Elain Harwood.

Figure 4.106: Bosworth College, Desford. Photograph by Mike Williams – English Heritage; FF003532.

¶ **Countesthorpe College**, Winchester Road, Countesthorpe; Farmer and Dark (partner in charge John Barton and assistant architect Donald MacEwan), 1967-70.

Countesthorpe brought the wheel-like plan of some of the primaries to a secondary scale, still at one storey, with a resources centre and courtyard at the centre. One segment of the circle was dedicated to adults, the sixth form and youth work, set next to the large arts and crafts area lit by north-facing rooflights. Maths and science have a deeper section but not as broad a one. There is no assembly hall as such, but halls for drama, music and physical education are grouped close to the entrance so they can be easily reached by the public. The school was built to accompany a high school on an adjoining site with which it shares sports facilities. The building is extremely modest in its construction and elevations, being single-storey, clad in brick and with rooflights providing the only drama. The interest is the plan, which is the ultimate example of Leicestershire's programme.

The circular courtyard at the centre of the complex is paved in a circular pattern, and right in the middle is Dunstable Reel by Philip King, recently repainted in yellow and pink rather than yellow and purple. The sculpture was purchased in 1970. King described its siting as 'one of the most successful settings of any of my works'. It is one of an edition of three, the others being held by the Tate Gallery, London, and National Gallery of Australia in Canberra. William Pye's *Broken Curve* from 1966 is a small sculpture in the entrance hall, also acquired by Mason in 1970.

The first head, Tim McMullen, ex-director of the Nuffield Resources for Learning project, introduced a radical policy for Countesthorpe on its opening, whereby students were encouraged to learn self discipline and were permitted to call teacher by their Christian names and had a say in the running of the school and its curriculum.[40]

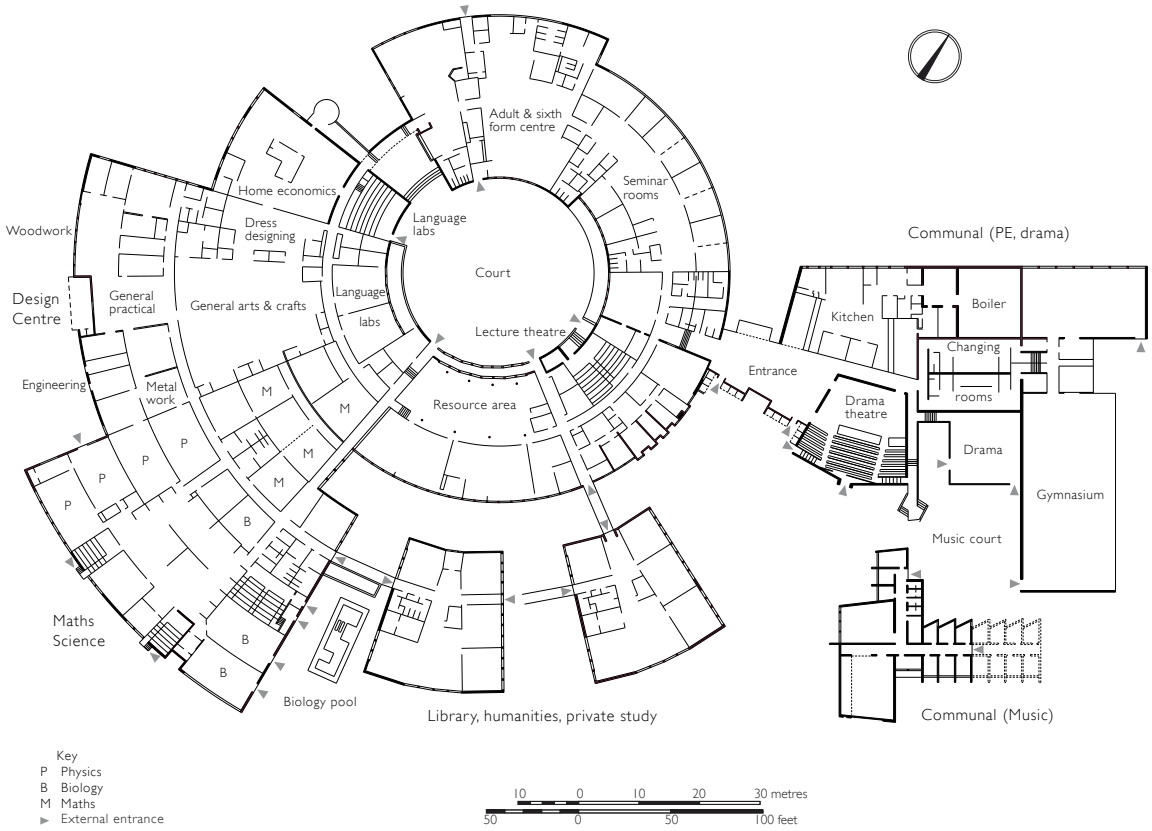

Figure 4.107: Countesthorpe College; Farmer and Dark, 1967-70.

Figure 4.108: Countesthorpe College. OPhotograph by Mike Williams – English Heritage; FF003548.

Figure 4.109: A 1997 view of the Resource Area at Countesthorpe, overlooking the circular courtyard to the right. Photograph by Mike Williams – English Heritage; FF003549.

¶ **Wreake Valley College**, Parkstone Road, Syston; Gollins Melvin Ward and Partners (partners in charge W. R. Headley and R. J. Mayes, assisted by A. E. Trickey, P. E. Hilton and T. G. Brown), designed 1966-67, built 1969-71.

For 1440 children. This is a rather different design from the other two wholly new colleges, in that it is stacked on several layers, with the auditorium at the centre and two-storey library and resource centre on top, surrounded by classrooms, and single-storey areas for science, arts and crafts and the sixth form around it. There is a drama studio next to the larger auditorium. The compact plan is a response to the poor ground conditions, whether through coal or gravel extraction is unclear, and the building was over-engineered in anticipation of being a storey higher. The open-plan single-storey science and crafts area are comparable with those in the other colleges, lit from above and from a central sculpture court.

The appearance is still more striking, unlike the other colleges, a steel-framed structure of elephantine appearance with canted walls clad in white tiles, concrete panels and few windows to the outside, and contrasting grey brick cladding and patent glazing to the sixth-form area. Richard Padovan, writing in the *Architectural Review*, described its appearance in its typical East Midlands suburbia as 'a monumental building amid so much democratic drabness, it gives an immediate feeling of uplift and anticipation: a sense that life is an adventure', and later in the same article as a 'major public building, open to all and owned by all – the socialist cathedral'. The contrast between the dark auditorium, and the bright resource areas is only outclassed in drama by the pyramidal, dark boiler flue that rears behind the main block. Again, in contrast to the other major colleges, there is no major work of sculpture here.[41]

Figure 4.110: The library at Wreake Valley College. Photograph © Elain Harwood.

¶ **Hind Leys College**, Forest Street, Shepshed; Leicestershire County Council Architect's Department, 1974-76.

The adjoining secondary modern school built in 1957 using the Intergrid system became a high school, and this became the upper school. It is a sleek glass box with a copper roof, to a deep plan with clerestories; brick construction is used for the adult's wing and sports centre.[42]

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11. *Architecture d'Aujourd'hui*, no.154, February-March 1971, pp.46-7.
12. *Cuadernos de Arquitectura y Urbanismo*, no.89, May/June 1972, pp.50-5; Mason, 1970, 10-12.
13. Seaborne 1968, 209; Jones 1988, 35.
14. Rimmington 1984, 4.
15. *Builder*, vol.204, no.6244, 18 January 1963, pp.113-16.
16. Mason 1964.
17. Cited in Jones 1988, 56.
18. Pedley 1955,23-4, 8.
19. Jones 1988, 137, reporting an interview with Mason.
20. 'Classroom Consumers: the moulding of a design public', *Design*, no.217, pp.12-23.
21. Wix and Keil 1992.
22. Jones, *op.cit*., pp.142-4.
23. Watts 1977, 17, 38.
24. Aldous 1974, 114-19.
25. Pearson 1971,
26. Cavanagh and Yarrington 2000, 189.
27. Cavanagh and Yarrington 2000, 191
28. Cork, R. in Rosenberg 1992, 24; Cavanagh and Yarrington 2000, 35-6.
29. Jones 1988, 80-93.
30. *Architects' Journal*, 2 May 1962, pp.961-68; Mason 1970,.4-6; Cavanagh and Yarrington 2000, 53-4.
31. *Builder*, vol.209, no.6387, 15 October 1965, pp.815-16; *Official Architecture and Planning*, vol.28, no.9, September 1965, pp.521-3; *Wood*, vol.33, no.5, May 1968, pp.21-4.
32. *Architect and Building News*, vol.226, no.51, 16 December 1964, pp.1163-8.
33. *Official Architecture and Planning*, vol.28, no.4, April 1965, pp.521-3.
34. *Architects' Journal*, vol.150, no.44, 29 October 1969, pp.1081-92; Ahrends Burton and Koralek 1991, 52-3; Powell 2012, 39-40.
35. *Architecture East Midlands*, no.23, March-April 1969, pp.36-8.
36. *Building*, vol.219, no.6635, 17 July 1970, pp.66-8.
37. *Builder*, vol.145, no.6023, 5 September 1958, pp.390-1; *Builder*, vol.214, no.6244, 18 January 1963, pp.113-15; *Architects' Journal*, vol.137, no.4, 23 January 1963, p.173; Cavanagh and Yarrington, 2000, 32-4.
38. Wix & Keil 1992.
39. *Building Design*, no.94, 24 March 1972, pp.12-13; *Architecture East Midlands*, no.43, July-August 1972, pp.25-7; Rogers 1980, 65-84; Rosenberg 1992, 42-3; Aldous 1974, 102-3; Cavanagh and Yarrington 2000, 37-40.
40. *Building Design*, no.31, 16 October 1970, p.4; *Architecture East Midlands*, no.34, January/ February 1971, pp.35-7; *Architects' Journal*, vol.154, no.35, 1 September 1971, pp.462-4; Cavanagh and Yarrington 2000, 34-6.
41. 'Syston Pyramid', *Architectural Review*, vol.152, no.905, July 1972, pp.5-15; *Architecture East Midlands*, no.43, July-August 1972, pp.43-5; *Architecture d'Aujourd'hui*, vol.45, no.166, March-April 1973, pp.61-2; *Interior Design*, June 1973, pp.398-9; *Architects' Journal*, vol.161, no.9, 26 February 1975, p.439; *Architect* (London), vol.121, no.4, June 1975, pp.19-27; *Glass Age*, vol.18, no.3, August 1975, pp.26-8.
42. Pevsner & Williamson 1984, 377.

BUCKINGHAMSHIRE

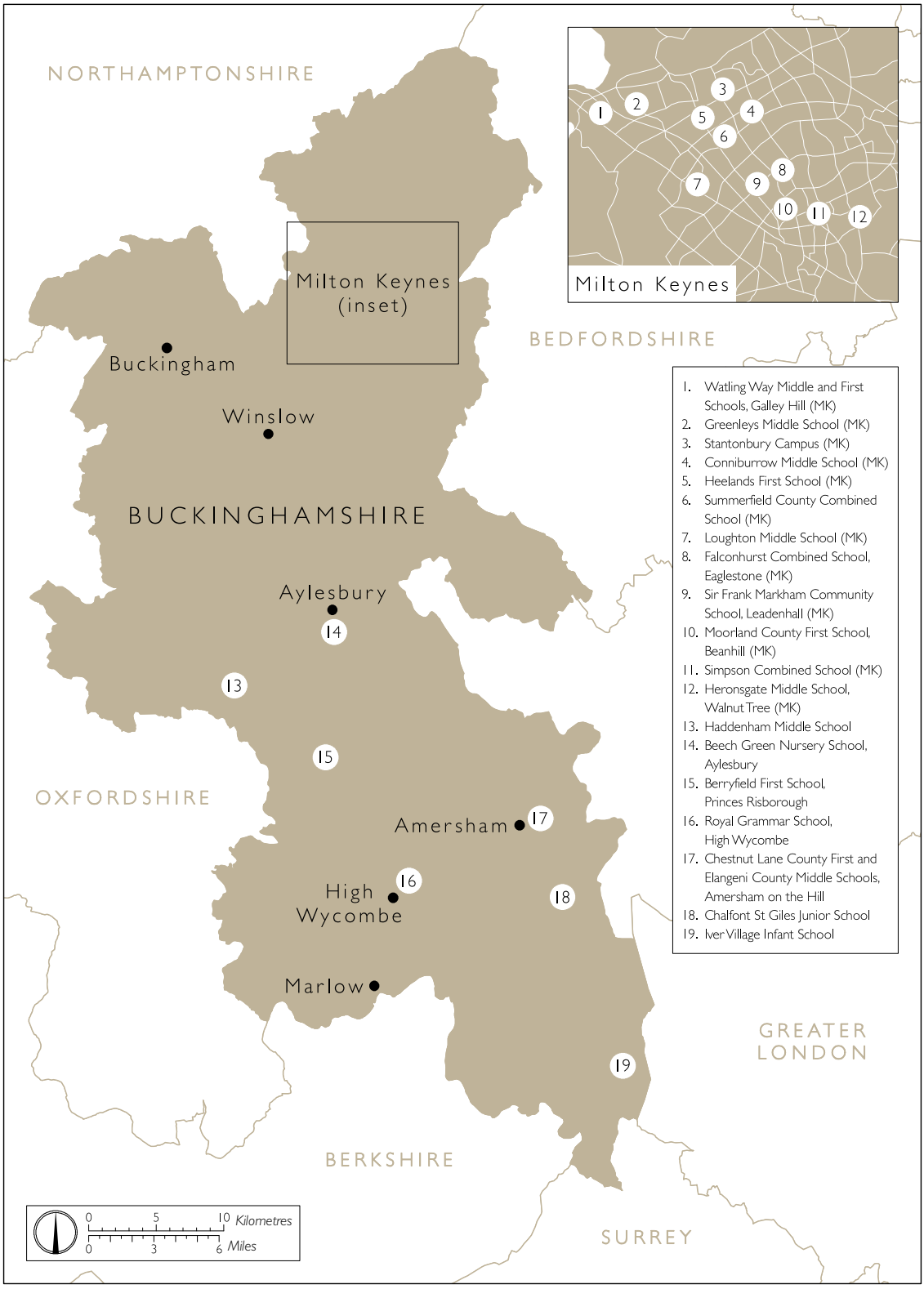

Figure 4.111: Buckinghamshire: location of gazetteer entries.

Buckinghamshire

The figure of Fred Pooley, Buckinghamshire County Architect from 1954 to 1974, looms large as the biggest single influence on the post-war schools of that county. Pooley came from Coventry where, as Donald Gibson's deputy from 1951-54 he gained knowledge of industrialised building techniques and the machinations of local government. Guy Oddie, who worked under Pooley at Coventry averred that he, like Gibson with whom he shared an office, was 'not an architect but a conspirator'.[1] But any hint of calculation was hid beneath an exterior as genial and tactful as the buildings designed under him: Terry Bendixson recalls 'a purring, tweedy, aitch-dropping teddy-bear of a man' (fig. 4.112).[2]

In Bucks, Pooley found a county with, as Andrew Saint put it, 'population growth second only to Herts, an ingrained conservative educational tradition, and thriving brick-making industries. He wanted to see if his school-building programme could reconcile these factors'.[3] Above all else, Pooley is remembered for 'rationalised traditional' construction: in short, calculated load-bearing brick walls with pitched tile roofs, arranged so as to facilitate—not hinder—new ways of learning.[4] Yet Pooley, always the pragmatist, neither introduced loadbearing brick to the schools of Buckinghamshire nor pursued them to the exclusion of frame construction, as a glance at the secondary school and technical colleges of the 1950s and '60s shows.

Pooley restructured the large architect's department into two studios each run by Assistant County Architects and comprising several small practice groups.[5] Group leaders and sometimes job architects were often credited for their schemes.[6] At its peak, the Department was 300 strong and occupied three floors of the monumental County Hall in Aylesbury, nicknamed 'Fred's fort' (fig. 4.114).[7] It is telling that his successor Paul Markcrow (County Architect 1974-90) retained both the administrative structure and friendly yet assured architecture that had become Pooley's trademark. From the late 1970s the Bucks team gradually thinned out, as most public offices did, until in 1998, County Architect John Stewart moved to consultants Babtie with a fixed-term contract and a 50-strong team of designers.[8]

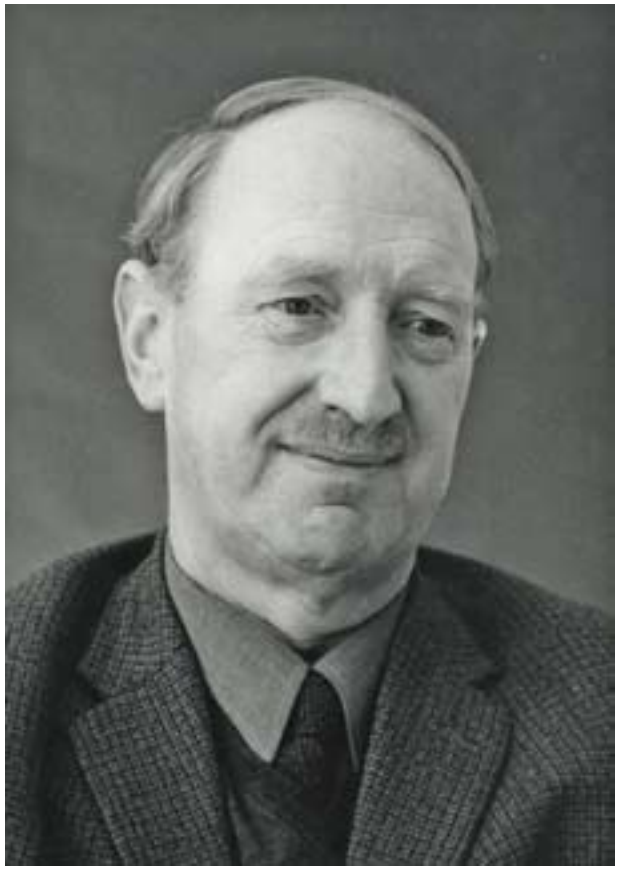

Fig 4.112: A portrait photograph of Fred Pooley (1916-98), kindly supplied by Bill Berrett.

The Department was sustained throughout the lean years of the mid-1970s to the mid-1990s by a project unique in scale and ambition, and exceptional also in the fact that in built form it had little to do with Pooley: Milton Keynes.[9]

Primary Schools

As in many other authorities, the influence of the post-war Hertfordshire primary schools can be divined. Naphill Primary School of 1961, for example, is clearly based on Morgans Walk School, Hertford and Roebuck Primary School, Stevenage, both written up in early Building Bulletins.[10] Edmund Charles Tory had worked first at Hertfordshire then at Coventry, where he was one of the job architects for Limbrick Wood.[11] Pooley, then deputy architect at Coventry, may have had knowledge of this project; in any case he brought Tory with him when he moved to Buckinghamshire. John Barker, who as leader of Coventry's School's Group was instrumental in the formation of CLASP (page

Fig 4.113 (left): (from left) Bill Berrett, Tse-Chiu Ng and Paul Markcrow poring over a plan of North Buckinghamshire New City in the basement of the old County Hall in Aylesbury in 1963. The plan, developed under Pooley, was subsequently abandoned, and the present Milton Keynes masterplan drawn up by planning consultants Llewelyn-Davies, Weeks, Forestier-Walker and Bor. Markcrow became Pooley's successor and Chui Ng led the studio responsible for many of Milton Keynes's key civic buildings. Photograph kindly supplied by Bill Berrett.

Figure 4.114 (right) : County Hall, Aylesbury, built in 1963-66 to the designs of Malcolm Dean with Malcolm Last and Martin Jones. A suprisingly assertive design in the genteel surroundings of Aylesbury, and one which contrasts with the homely, vernacular idiom often associated with the Department (P5925019).

125), served as Pooley's Deputy from 1957 to 1960.[12] His successor Dick Paul was another Herts man.[13] Such links may go some way to explaining how school design was shaken up in Buckinghamshire.

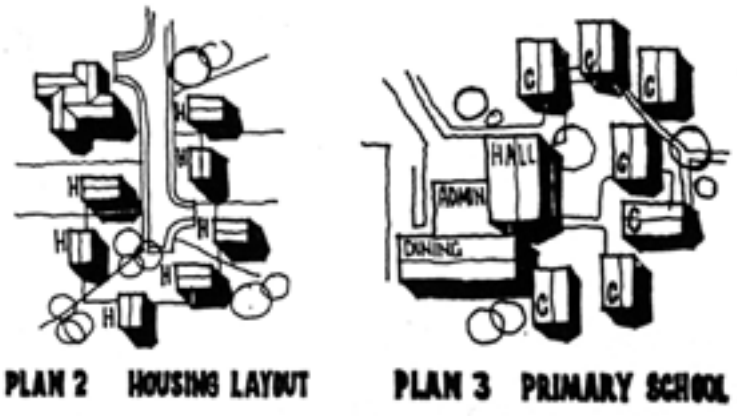

Figure 4.115: The influence of housing plans on schools. An early 1960s illustration prepared as part of the North Bucks New Town *study, kindly supplied by Bill Berrett.*

Bucks went one step further and virtually eliminated internal circulation at Gravel Hill Primary School, Chalfont St Peter of 1962-63 and **Chalfont St Giles Junior School** of 1964-66.[14] Here a series of square pavilion classrooms with pyramidal roofs recall the open-air schools.[15] Pooley compared the cost of such a layout to a small housing estate of bungalows: 'I never understood why we paid so much more for our school buildings than for housing' (fig. 4.115).[16] He observed of its outdoor circulation 'we tend to molly-coddle our children and the open-air does them no harm'.[17] 'Bungalow planning' was next applied to the High Wycombe Secondary Modern School of 1963-64.[18] Later, the pavilions were linked by covered ways and flat-roofed corridors: a legible example is the Lakes First and Middle Schools, Water Eaton, designed in 1967 for a GLC overspill estate.[19] Even when layouts were further compressed under inflationary pressure, teaching spaces were still separately roofed (qv **Conniburrow Middle School** in Milton Keynes). The plan was thus articulated, in contrast to the continuous flat or pitched roofs widely adopted elsewhere to keep costs down.

But it was another MoE development project—Woodside School, Amersham of 1956-57—which shook up primary school design in Bucks (page 71). Andrew Saint suggests that the collaboration was initiated by Pooley, who knew Stirrat Johnson-Marshall, the Ministry's chief architect.[20] So impressed was Buckinghamshire with the Amersham school that they built at least two copies, and elements of the design were plundered for many years to come, much to the bemusement of its architects.[21] More significantly, it was the stimulus for Buckinghamshire to rethink primary school planning as a sequence of specialised spaces, varying according to group age, size and activity. Areas were set aside for messy practical work, crafts, art and basic science. Pooley's team boiled down these ideas to a basic planning unit of paired classrooms sharing small practical and quiet areas with attached cloakrooms and WCs. Buildings could be planned from different configurations of these elements, speeding up the process of design without resort to predetermined models. Early iterations are **Berryfield First School** in Princes Risborough and **Chestnut Lane County First** and **Elangeni County Middle Schools** in Amersham, but the pairing of classrooms survived into the 1980s (qv **Heronsgate Middle School** in Milton Keynes).

In 1973, in line with the recommendations of the Plowden report, Buckinghamshire implemented a reorganisation plan based on first schools for the 5-8 age range and middle schools for pupils aged 8-12.[22] The middle schools resembled junior schools with the addition of specialist teaching areas such as science, music, craft and food technology.[23] Often first and middle schools would share the same site, so that transfer would be less disruptive and facilities could be shared. Combined schools for ages 5-12 were found useful in areas of low population density and later when the effects of a low birth rate were felt. The flexibility was found useful at Milton Keynes, where a building designed as a middle school would spend its first few years as a combined school. As catchment areas were built up, one or two feeder first schools could be built, allowing the designation of the middle school.[24]

The Bucks architects provided a variety of spaces to suit different teaching styles.[25] The most frequent compromise took the form of small classrooms clustered around shared group areas. In the 1970s plans became deeper and the shared practical areas increased in size and were eventually linked up. Progressive planning was encouraged above all at the new Milton Keynes schools which, as the Senior Education Officer recognised, attracted a crop of young, dynamic teachers 'more than willing to cooperate with each other.[…] There was certainly this ethos in education during the 1970s and '80s - a tremendous feeling of collaboration between the schools.'[26] Some of this new breed of child-centred teachers had been educated at Newland Park Training College in the south of the county. Primary heads were usually appointed a term or two before the new school opened (and secondary heads a year in advance), and could be consulted on last-minute details and teething troubles.[27]

The architects settled on a spine plan based on a wide, top-lit internal street, often facetted or angled to break up lines of sight and to disperse noise. The curved forms could enclose grassy play areas. The first attempt seems to **Falconhurst Combined School** in Milton Keynes, designed *c.*1975, and followed by **Iver Village Infant School**, **Summerfield County Combined School**, **Loughton Middle School** and **Heronsgate Middle School**, the latter three in Milton Keynes. The shared area could be given over to cooperative teaching or practical work with small groups. A split-pitched section was often contrived to provide top lighting and cross ventilation. The street worked in combination with a row of small, enclosed home bases, much valued by traditionally-minded teachers. Enclosed and sound-proof rooms were provided for noisy and messy activities.

Infant school and areas were provided with smaller home bases and larger shared areas to permit more flexible combinations of pupil groups.[28] The architectural possibilities were exploited above all by John Stewart, who commented on his Glastonbury Thorn First School, Milton Keynes of 1992-93 (fig. 4.116):

> 'The home bases are deliberately undersized so that they cannot be used as conventional classrooms. In that sense it is quite deterministic. The idea was that the children would have a secure space to arrive at in the morning, make their first contact with the teacher, and from there, venture out into the open area, where most of their time would be spent'.[29]

Figure 4.116: Glastonbury Thorn First School, Milton Keynes; Buckinghamshire County Council Architect's Department, 1992-93. Photograph kindly supplied by John Stewart.

Such a move bucked national trends such as the more formal, subject-based emphasis codified by the National Curriculum. Yet James Parke, then Senior Education Officer, confirms that these aspects of the school-building programme were never challenged by councillors.[30]

Secondary Schools

The reform of secondary education was never going to be straightforward in Buckinghamshire, a conservative county with a tradition of grammar school education. In response to Circular 10/65 (pages 44-45), the Council submitted a half-hearted reorganisation plan that pledged to built comprehensive schools provided that they 'not prejudice the continuance of any existing selective secondary school'.[31] In essence, a two-tier system comprising grammar and secondary modern schools (the latter termed upper schools as secondary modern was felt to be pejorative) was retained.[32] Buckinghamshire County Council defied the government by voting against comprehensives in 1975. By then political favour was already swinging back in their favour. The exception was the Milton Keynes educational division, where a comprehensive education system was implemented alongside the two-tier structure operating in the rest of the county.[33]

The secondary schools built in the late 1950s and early 1960s were influenced by the loose, low planning pioneered by the MoE development projects and at Coventry's comprehensives, which Pooley would have been aware of. Leon Secondary School, Bletchley, designed in 1967, sprawls in a similar way. Extensive additions were made to existing grammar schools at **Royal Grammar School**, High Wycombe in 1959-63, the Radcliffe School, Wolverton in 1960 and the Royal Latin School in 1963. From the early 1960s, secondary schools were planned as a campus of freestanding buildings, an open-ended approach which anticipated later additions and reorganisations (fig. 4.117). This can be seen at Cressex School (*c.*1965), Amersham School, **Stantonbury Campus** in Milton Keynes (first phase 1973-75), St Paul's Catholic School (part of the Woughton Campus

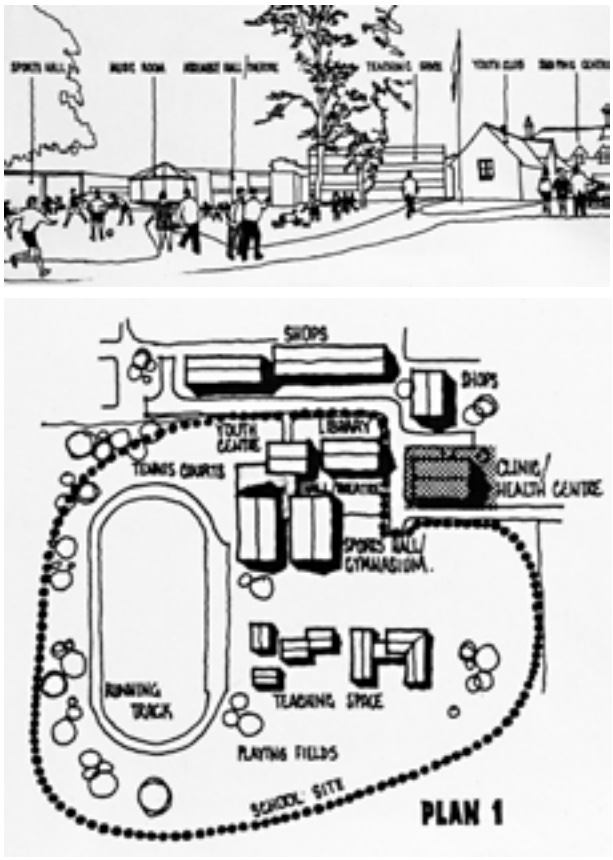

Figure 4.117: Another early 1960s presentation drawing for the North Bucks New Town *study, showing a secondary school with shared community facilities, located near shops and clinics. This influenced the Milton Keynes educational campuses of the following decades. Image kindly supplied by Bill Berrett.*

at Milton Keynes) and Derek Walker's *c.*1985 masterplan for the Gyosei International School at Willan Park.

Under Chief Education Officer Roy Harding, Buckinghamshire cooperated with the urban districts and local boroughs to enhance school provision for wider use, providing community annexes or youth clubs at rural primary and secondary schools from the late 1950s.[34] An unusual arrangement was developed at **Iver Village Infant School**, where councillors had the idea of combining the school, a village hall, public library and Baptist chapel within a single range.[35] Milton Keynes Development Corporation (MKDC) sometimes provided supplementary funding for community facilities, from stores for evening classes using primary schools to the joint provision of recreational centres at the Stantonbury and Woughton educational campuses, which supplemented the community facilities provided by the local centres.[36]

Schools in Milton Keynes

Falling rolls and the loss of Slough to Berkshire with local government reorganisation in 1974 necessitated a programme of rationalisation, and by the end of the decade a rolling programme of closures and amalgamations operated in the south of the county, as it did at most other Authorities.[37] This trend was countered by a significant capital building programme in Milton Keynes which gathered pace from the mid-1970s. Around 40 primary schools, five secondary schools and five special schools had been completed by 1995, which almost exactly matched the number of closures during the same period.[38]

The Milton Keynes Development Corporation was charged with implementing the 1970 masterplan, housing, local centres, industrial units and office accommodation. But the bulk of the public building programme, including schools, remained in the hands of Buckinghamshire and a constant dialogue was necessary between the Senior Education Officers and MKDC as 'developers' to allocate sufficient school places for the forthcoming housing developments. Their demographic forecasts were complicated

by the diverse backgrounds of incoming children and considerable 'intra' movement of upwardly mobile families within a buoyant local economy.[39]

The size of the schools and the location of their sites was determined in consultation with the Development Corporation. [40] With the release of each grid square typically came a brief for a first school (for ages 5-8) and a middle school (8-12), preferably on a single site, and sometimes serving two adjacent grid squares. At Neath Hill and Gifford Park the schools were conceived as an integral part of the village-like 'local centre' of community facilities provided for each grid square. The urban conception, advanced in the 1969 masterplan, of outward-facing centres forming a frontage to the grid squares was essentially overturned by fundamental revisions to the road system and principally the decision to increase the speed limit from 20 to 70mph. The planning implications of this were drastic and pushed the local centres into the middle of the development parcels, a location which incidentally suited the low key, vernacular idiom of the Bucks schools.[41] Secondary schools, of course, served a much larger catchment area. Pooley's 1962-64 plan for North Buckinghamshire New City envisaged two or three educational campuses, each combining as many secondary schools with community facilities. The strategy was realised at the Stantonbury and Woughton Campuses, but as birth rates fell the campus approach was substituted by smaller, isolated secondaries of 1,000-1,200 places.[42]

Construction and 'Rat. Trad.'

The use of load-bearing brick had been pursued by Pooley's predecessor F.A.C. Maunder (Architect to the Council 1946-53) at a number of mildly Scandinavian primary schools reminiscent of C.G. Stillman's work at West Sussex and Middlesex.[43] Although Pooley's name is now synonymous with traditional construction in local brick, his initial years at Buckinghamshire were spent 'dabbling with proprietary systems', as one of his architects later put it.[44] The pre-stressed concrete Inter-grid system designed by the Ministry of Education Development Group was employed at a number of secondary schools, the first of them Langley Grammar School, Slough, completed 1956.[45]

The need to build quickly led to a degree of structural experiment and eclecticism, usually in the form of a 'mix and match' approach, with steel or timber curtain walling, load-bearing brick and reinforced concrete construction combined in a series of secondary schools of the late 1950s. These adopted a vaguely Miesian mixture of flat roofs, brick end walls and spandrel panels below glazing. An early example is Misbourne County Secondary, Great Missenden, built in only six months in 1955, using load-bearing brick with a steel-framed assembly hall. Pooley also farmed out Wycombe High School for Girls to Denis Clarke Hall, built in 1955-56 on a steel frame with coloured spandrel panels. Job architect Malcolm Dean chose an exposed reinforced concrete frame system for **Royal Grammar School**, High Wycombe of 1961-63, and David Aylett's Leon Secondary School, Bletchley of 1967 sported pre-cast concrete panels.[46]

Pooley came to regret the blandness and poor weathering qualities of light and dry construction (or 'slick-click', as he liked to call it) and felt his way towards a hard-wearing, brick-based approach.[47] Pooley realised that he could build durably and economically by

exploiting Buckinghamshire's traditional crafts and industries: the brick works, tileries, joiners and small but skilled firms of builders. It was claimed that using handmade bricks added a mere one percent to the cost of a building, whilst adding a richness and durability to exteriors.[48] The MoE's Woodside School in Amersham (page 71) provided a local example of the technique. Planning modules were based on brick dimensions.[49] His department developed considerable expertise in building with bricks and relationships built up with regional and national suppliers. Some companies would fire special batches; others would prepare sample panels with different colours, pointing, joint widths and so on. The foreman would be instructed to mix up bricks from different pallets to the minimise variations in colour caused by kiln firing. Dozens of square metres of brickwork that did not meet their high standards were pulled down.[50]

By widening the field of contractors to include small local builders and suppliers, Pooley benefited from competitive prices, especially welcome in periods of high inflation. And 'costs-in-use'—the running and maintenance costs often overlooked in cost planning—were far lower than the light and dry schools, a fact appreciated by Bucks caretakers to this day. By refining the process as well as the product, Pooley won the confidence of the Buckinghamshire Education Department, and schemes would be signed off by the education officer rather than being put before the education committee.[51] By keeping well within the cost limits and being able to point to the Ministry's own examples, Pooley could boast with some pride that he had escaped being rounded up into a system-building consortium.[52] Bucks was not the only white space in the consortia map, as it was sometimes claimed, but it became the infamous one.

Styles and Influences

Bucks 'rat trad' was well placed to respond to the realignment of architectural values towards contextual and latterly populist approaches that took place from the mid-1960s.[53] Pooley called for more attention to be paid to exterior design: 'the outsides of our buildings are less liable to change than the insides […] so to my mind it is important to get them right'.[54] The watchword was low-key, traditional buildings within a rural setting: Pooley presciently observed 'brick walls and pitched roofs produce an indigenous architecture in Britain which most people will appreciate'.[55] **Chestnut Lane First School** and **Elangeni Middle School** show a sensitively to the woody suburbia of Amersham. The idiom suited additions to historical sites, such as Brian Andrew's Wendover House School of 1967 which adjoined a manor house of the 1870s. All this anticipated the vernacular revival of the 1970s but without resorting to mannered or arbitrary historicism.

The 'unwritten rule' of brick and tile, at least for primary schools, proved a surprisingly flexible framework within which a wide range of idioms could be freely expressed.[56] The departmental house style of the 1950s usually involved low-pitched or flat roofs with generous eaves and white fascia boards.[57] In the early 1960s, Dick Paul, Pooley's Deputy and a Hertfordshire schools veteran, introduced a more homely look for primary schools, subsequently developed by Ron Walker, Paul Markcrow, Brian Andrew and John Sexton.[58] It was based on steeper-pitched roofs, clipped eaves, stained softwood frames (first black, later red and green) and shiplap weatherboarding, often over brick plinths

(fig. 4.118). Many of these motifs were derived from Bucks vernacular buildings, as was a project in itself influential: David Dry and Katharina Halasz's farm buildings of *c*.1962 at Fulmer in the south of the county.[59] Inside were internal fair-faced bricks (sometimes

Figure 4.118: Additions of 1967 to the Wendover House Special School. Job architect Brian Andrew. © Mehdi Ali Abidi.

Fig.4.119: Priory Common First School, Bradwell, Milton Keynes; Buckinghamshire County Council Architect's Department, 1983. © Mehdi Ali Abidi.

painted), exposed trussed rafters or a boarded ceiling, and carpets, elements later seen at Hampshire under Colin Stansfield Smith (pages 280-81).

The Bucks vernacular freely mingled with the influence of Scandinavian humanism, particularly long-lived and pervasive in Bucks. Aalto, Jacobsen and the intimate, enclosed brick housing of Utzon were most admired.[60] A coach-load of Buckinghamshire architects even made a pilgrimage to Denmark in the 1970s; the timber cladding, quarry tiles and slender vertical glazing of Jørgen Bo and Wilhelm Wohlert's Louisiana Museum of Modern Art at Humlebaek had long provided a rich sourcebook of details. Later Scandinavian design came in modified form to Milton Keynes, thanks to the free hand enjoyed by MKDC in commissioning private architects such as Ralph Erskine to design the Eaglestone grid, built in 1972-75, and Henning-Larsen's housing of 1976-81 at Heelands.

The best examples of this Bucks style were those one-off jobs which enjoyed both a rural setting and a generous budget, such as Ron Walker's Green Park Training Centre, Aston Clinton of 1962-64, John Sexton's Newland Park College of Further Education, Chalfont St Giles, of 1967-73, and a series of branch libraries designed by Ron Walker with Derek Turner.[61] These projects themselves became sources of influence on the work of the Department in the 1970s, as was the architecture of Aldington Craig & Collinge, based at nearby Haddenham where many members of the Department lived. The output of this practice, along with Robert Maguire, Edward Cullinan and Richard MacCormac, was labelled by the *Architectural Review* in 1983 as 'romantic pragmatism', a tag that could equally apply to the Buckinghamshire approach.[62] To some degree this was anticipated by Pooley himself, who in 1968 speculated, 'I sometimes think that we have taken functionalism too far and that we might in the future see a mild romantic revival.'[63]

The division of labour between the architects of Buckinghamshire and MKDC initially resulted in an uneasy mix of aesthetics and ideologies. The early housing commissioned by MKDC chief architect Derek Walker comprised rows of system-built, flat-roofed terraces whose formal severity was in stark contrast with their informally-composed brick and tile schools, designed by the Buckinghamshire Architect's Department. But as the pace of building slowed in the second half of the 1970s, the offices converged into a more relaxed, pluralist approach. Under Wayland Tunley and Trevor Denton the MKDC evolved richer, more picturesque and diverse idioms, often realised in warm facing brick: Housing at Neath Hill of 1974 is perhaps the earliest example. And the studio responsible for the MK schools, led by Tse-Chiu Ng, developed greater formal ambition, including a penchant for axial planning, perhaps in response to MK's grid plan. There was both compromise and cooperation with MKDC planners over matters of detailing and colour, and by the mid-1980s the design of schools such as Giffard Park and Willan was closely co-ordinated with the housing and local centres.[64]

The biggest influence on the character of the MK schools of the 1980s was John Stewart, a young architect in Chiu Ng's team. Stewart set about exploring the architectural potential of a linear, open-plan teaching area, whilst injecting colour, boldness and a degree of knowing playfulness into the brick and tile formula. His **Summerfield School**, to take a single example, is aligned with one of the field boundaries that were obliterated by the MK grid, referencing the history of the site in a manner more redolent of Kenneth

Fig.4.120: John Stewart's layout for Summerfield County Combined School. The secondary axis is based on a retained hedgerow. Photograph kindly supplied by John Stewart.

Frampton's 'critical regionalism' than its more superficial contemporary, the postmodern movement.[65] Although Stewart's play with axes may reflect the neo-classicism of James Stirling's later work, the MKDC encouraged the retention of hedges and trees and in early MK housing schemes such as Coffee Hall and Netherfield; these relicts of a rural landscape are juxtaposed against an orthogonal layout (fig. 4.120).[66]

The Milton Keynes schools bear comparison with the contemporary work of another 'design-led' authority: Hampshire. John Collins, a member of Chiu Ng's studio, recalls that a 'serious rivalry' developed with the Hampshire architects, leading to reciprocal school visits and two-way influence.[67] A more monumental architecture, rarely seen in post-war schools, was occasionally thought appropriate for the more venerable grammar schools, such as Malcolm Dean's early 1960s additions to **Royal Grammar School** and John Stewart's rationalist Computer Centre of 1985 at Aylesbury Grammar School.

Gazetteer

Pre-school Education

¶ **Beech Green Nursery School**, Southcourt, Aylesbury; Buckinghamshire County Council Architect's Department (job architect D.H. Hooper); designed 1967, built 1968-69.

This nursery for 50 children including a ten-place unit for physically disabled children, replaced a hutted wartime nursery established by the Save the Children Fund in 1942.[68] The H plan comprises two playrooms of 20 places each with adjoining kitchen and special unit. Storey-height bay windows and a raised 'play deck' lend themselves to exploration and imaginative play. The special unit has its own playroom, WCs and medical inspection room, although it can be integrated with the adjoining playroom with the use of a sliding partition. The wings are separated by the staff rooms and a generous entrance lobby with coat hooks and display area. A generous covered play area with toy store, grassed mound with slide and sand pit, invites outdoor activity. An H plan was also adopted for Chalvey Nursery School in Slough of 1970-71.[69]

Figure 4.121: A 1974 photograph of Beech Green Nursery School, Aylesbury; Buckinghamshire County Council Architect's Department, 1968-69. Institute of Education Archives: ME/Z/5/1/8.

Figure 4.122: Chalfont St Giles Junior School; Buckinghamshire County Council Architect's Department, 1964-66 (P5925020).

Primary and Middle Schools

¶ **Chalfont St Giles Junior School**, Parsonage Road, Chalfont St. Giles; Buckinghamshire County Council Architect's Department (job architect Brian H. Andrews), designed 1964, built 1964-66.

Eight square pavilion classrooms scattered across a gently sloping Chilterns site, or as Pooley called it, 'an exercise in providing more space for less money'.[70] The classrooms pavilions have pyramidal slate roofs with clipped eaves, and planes of load-bearing sand-lime brickwork are punctuated by storey-height glazed frames. Each classroom has a vestibule with cloakrooms and WCs, a quarry tiled-practical area with hand basins and worktop and its own corner veranda. The administration block contains an assembly hall, dining hall, kitchen and staff rooms. The architects found that the expense of such high amounts of external walling and the separate dining and assembly halls was offset by the fact that load-bearing construction 'opens the field of contractor wide enough to give very competitive tendering'.[71] When, in 1972, Chalfont St Giles was converted to a middle school three of the classrooms were infilled to provided a library and additional practical space.

¶ **Berryfield First School**, Berryfield Road, Princes Risborough; Buckinghamshire County Council Architect's Department, designed 1967, completed 1969, demolished *c.*2005.

This 240-place infant school served the young families of a nearby 1960s estate. The plan was

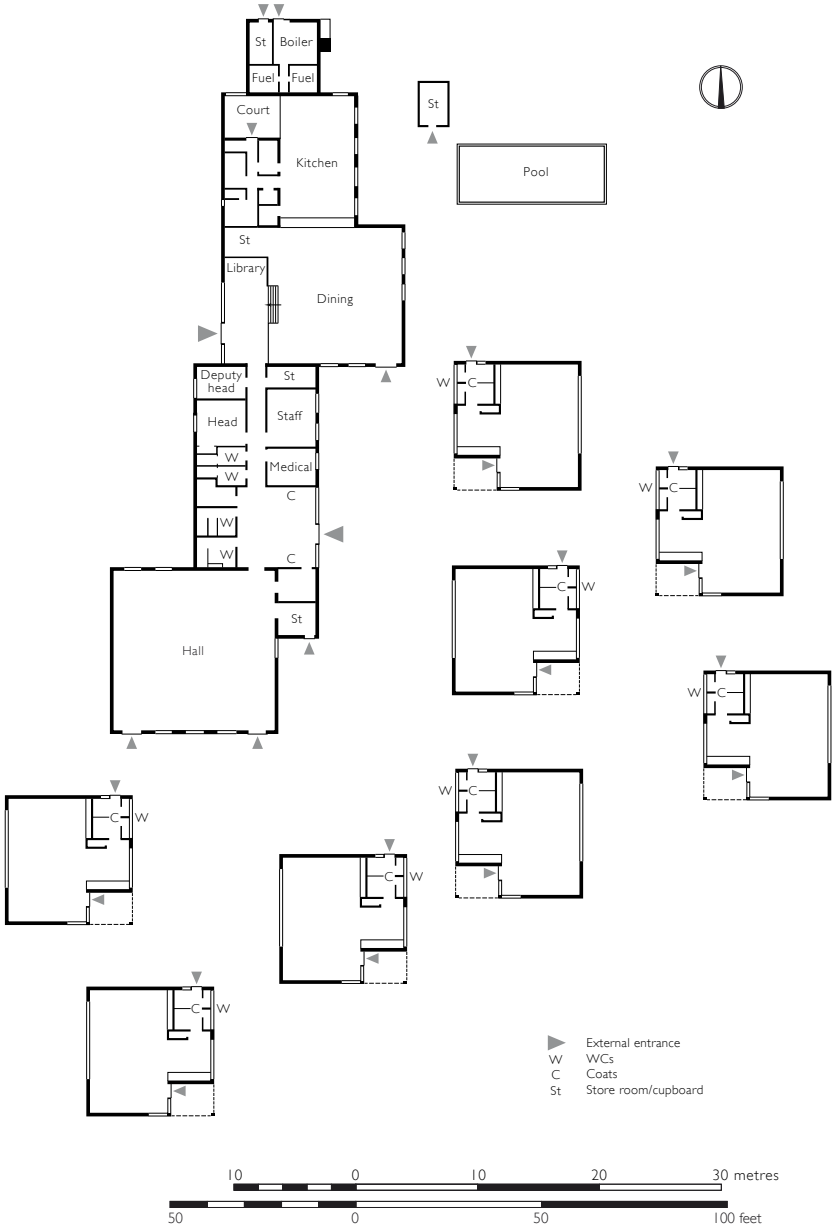

Figure 4.123: Chalfont St Giles Junior School; Buckinghamshire County Council Architect's Department, 1964-66.

built up from paired square classrooms which shared a practical area and adjacent cloakrooms/wcs. This planning unit was mirrored at Berryfield to give two H-plan blocks, their cross wings at right angles to the street. The courtyards were further enclosed by screen walls. Administrative and dining/assembly hall blocks lay to the west, linked by an entrance hall.

Reclaimed London stock bricks were alternated with storey-height, double-hung aluminium windows. Over this was set stained weather boarding and low pitched roofs. The sash window proportions and domestic appearance of the classrooms contrasted with the squarish picture windows and flat roofs of the linking sections. Two years after completion two of the eight classrooms were converted to workshops.[72] Berryfield Infant and Icknield Junior Schools were combined into a single primary school in 2001 in response to falling rolls and the site has since been redeveloped for a care home.

¶ **Chestnut Lane County First** and **Elangeni County Middle Schools**, Chestnut Lane, Amersham on the Hill; Buckinghamshire County Council Architect's Department (job architect Tony Kirby), Chestnut Lane designed 1966-67, completed 1969; Elangeni designed 1970, completed 1973.

This informal but distinctive pair of schools sit in the wooded grounds of a former Victorian villa to serve the expanding suburb of Amersham on the Hill.[73] Chestnut Lane comprises three wings of classrooms and a hall, library and administration block planned around a courtyard. Each classroom is square and has an adjoining practical area and individual entrance via an outshot lobby containing cloakroom and WCs. The classrooms are identified by peaked rooflights of patent glazing (similar examples can be seen in the work of Peter Aldington and Jack Digby's Hartest Primary School), matched in distinctiveness by the opposed monopitches of the dining and assembly halls.[74]

Elangeni is a further development of the paired classrooms seen at Berryfield and Chestnut Lane (qv) with the addition of a shared quiet room. Three teaching wings are wrapped around grassed playgrounds and connecting with a central library, hall and dining area (the halls again opposed monopitches). Craft and science/maths/music areas occupying the awkwardly shaped leftover spaces. The result is a complex plan with much external walling at unusual angles. A pupil referral centre was later added in the same idiom. Schools of similar appearance can be found at Highworth Combined School, High Wycombe and Ashmead County Combined School, Aylesbury. The schools have been little altered.

Figure 4.124: Elangeni County Middle School, Amersham on the Hill; Buckinghamshire County Council Architect's Department, 1972-73 (P5925043).

¶ **Haddenham Middle School** (now Haddenham Community Junior School), Woodways, Haddenham; Buckinghamshire County Council Architect's Department (job architect Roger Heyne), designed 1972, completed *c*.1974.

This large junior school was built in phases and exhibits a tendency towards deep, axial and courtyard plans (qv Pepper Hill First School, MK, of 1970-73, **Watling Way First School**, MK of 1974-76).[75] The long, low building has a cruciform plan around a central courtyard. In place of transepts are monopitched classrooms ranged around two central practical areas for crafts, home economics, science and maths. A strip of patent-glazed rooflights runs around the hipped tiled. Along the main axis is a pyramidal-roofed youth club to the east, and dining hall and administration buildings grouped around a second courtyard to the west.

The school, along with the contemporary library, health centre and fire station, was part of the expansion of the historic village of Haddenham, notable for its wychert walls of earth and straw. The community buildings were completed in accordance with a design code which specified white-rendered walls and a plain tiled roof similar in pitch and colour to those in the village.[76] The unbroken, symmetrical ranges of the school contrast with the picturesque massing of the contemporary Library and Health Centre.[77]

¶ **Watling Way Middle** and **First Schools** (now Queen Eleanor Combined School), Galley Hill, Milton Keynes; Buckinghamshire County Council Architect's Department (job architect Brian H. Andrews), Middle School 1970-73, First School 1974-76.

Watling Way Middle School, the first school to be completed at Milton Keynes. forms part of Galley Hill, the first major housing scheme and an extension to the existing town of Stony Stratford. Working closely with the MKDC planners, Andrews attempted to develop an urban, 'back of pavement' architecture. The L plan of the Middle School hugs the perimeter

of the site, fronting a footway to the nearby Activity Centre.[78] The 480-place Middle School was divided into junior and senior sections. The design combines two large, open-planned areas with a practical bay and three home bases of varying size; pairs of square workrooms with shared cloakrooms and quiet areas; and conventional classrooms for science and crafts with a wide circulation space serving as a library. The exterior is of warm red brick with dark-stained softwood joinery and tiled roofs. There are some pleasingly tactile details, such as the zig-zag sill to the dining-room windows, the storey-height horizontal glazing to the library and ceramic tile mural (*Climbing frame* of 1978 by John Watson). The H plan of the later first school sits in the middle of the site.[79] Four learning areas, each adjoined by three semi-open home bases, are laid out about a central hall. Beyond are two administrative wings.

Figure 4.125: Elangeni County Middle School, Amersham on the Hill; Buckinghamshire County Council Architect's Department, 1972-73.

¶ **Conniburrow Middle School** (now Southwood Middle School), Bryony Place, Conniburrow, Milton Keynes; Buckinghamshire County Council architect's Department (job architect Barry Green); designed 1974, opened *c.*1978.

A fairly deep L plan, with home bases clustered around a central shared area and a hall at the angle. An ingenious arrangement of opposed monopitched roofs bring light to deeper teaching spaces. The picturesque roofscape is balanced by storey-height glazing to the triangular sides of the monopitched blocks, recalling the work of Aldington, Craig and Collinge, with whom Green worked as a year out student.[80] A similar section was attempted at Cold Harbour CE School at Bletchley: here the monopitches are ranged around a central hall. Wood End First School, the infant school for Stantonbury which opened in 1977, is as intricate but deeper still.

¶ **Moorland County First School** (now Moorland Infant School), Maslin Drive, Beanhill, Milton Keynes; Buckinghamshire County Council Architect's Department (job architect Peter D. Millward); designed 1975.

At Moorland a cluster plan similar to and contemporary with **Conniburrow First School** (qv) is tidied up under a more formal exterior, planned around a central hall. Two teaching areas are each made up of three home bases, a store and cloakroom, grouped around a central shared area. Each teaching area has three hipped ranges wrapped around a flat roof, which is depressed to afford the home bases clerestorey lighting. The staff accommodation is arranged in two monopitched ranges flanking an entrance court.

¶ **Simpson Combined School**, Simpson, Milton Keynes; Buckinghamshire County Council Architect's Department (job architects Paul Markcrow, Trevor Harvey, Graham Thornhill), designed 1971, built 1973-74.

¶ **Falconhurst Combined School**, High Trees, Eaglestone, Milton Keynes; Buckinghamshire County Council Architect's Department (job architect Roger Heyne), designed *c.*1975, opened 1977.

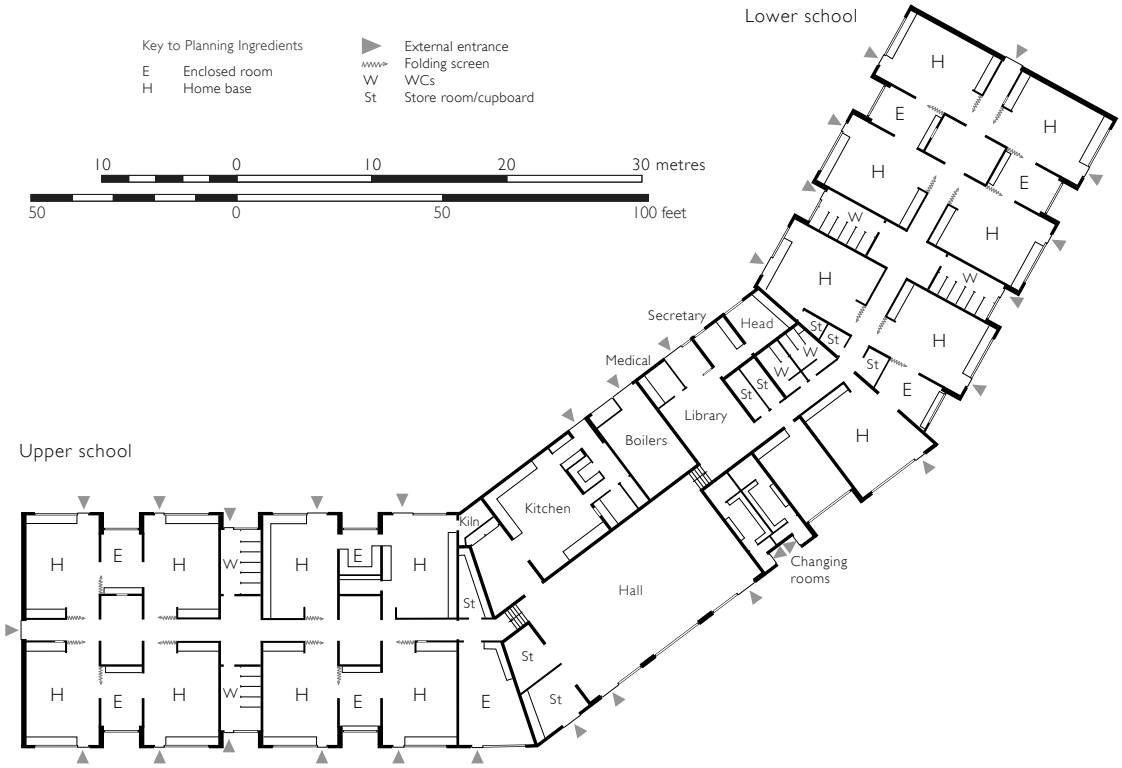

Fig 4.126: Simpson Combined School, Milton Keynes; Buckinghamshire County Council Architect's Department, 1973-74.

Figure 4.127: Falconhurst Combined School, High Trees, Eaglestone, Milton Keynes; Buckinghamshire County Council Architect's Department, 1976-77.

¶ **Greenleys Middle School** (now Greenleys Junior School), Off Marron Lane, Greenleys, Milton Keynes; Buckinghamshire County Council Architect's Department (job architect Terry Ford), designed 1976, completed *c.*1978.

These schools demonstrate the recurrence of linear plans in the 1970s. At Simpson, a series of paired workrooms sharing a group room (qv **Berryfield** and **Elangeni**) are mirrored about a spinal corridor. The three sections—lower and upper schools and a hall and kitchen area—are angled in the manner of a butterfly plan. The plan of Greenleys is also articulated, but here the pairs of home bases share a central area, albeit one neither continuous nor generously lit. Circulation is confused and the organising potential of the spine plan is not exploited. These things were rectified in the contemporary Falconhurst, a middle school built in 1976-77 to serve the Eaglestone and Peatree Bridge grid squares. Its internal street is continuous, wide and top lit through clerestorey windows in a 'split gable' section. The internal street later became associated with Hampshire schools, but in the mid-1970s there were few English precedents.[81]

¶ **Iver Village Infant School**, West Square, Iver; Buckinghamshire County Council Architect's Department (job architects Tony Parker and Roger Heyne), designed 1977-79, built *c.*1980.

¶ **Heelands First School**, Glovers Lane, Heelands, MK; Buckinghamshire County Council Architect's Department (job architect John Stewart), 1981-83.

The Iver Village School was an unusual infill development where councillors had pushed through an infant school, village hall, Baptist chapel and public library in the same complex.[82] The school is bookended with the hall and

Figure 4.128: Heelands First School, Milton Keynes; Buckinghamshire County Council Architect's Department, 1981-83. Photograph kindly supplied by John Stewart.

Fig.4.129: Summerfield County Combined School, Milton Keynes; Buckinghamshire County Council Architect's Department, 1984-85. Photograph kindly supplied by John Stewart.

church so that they front the High Street, whereas the school wraps around a 'village green'. The street simultaneously separates and connects the community functions and is sufficiently wide for group and practical work (overlooked by the headmaster's office). Although it is buried within the plan, the street is generously toplit by double-glazed north lights and clerestoreys in the classrooms borrow this even light. The exterior has low eaves and vast expanses of low-pitched pantile, given visual interest by the giant wedge-shaped roof lights to the hall and meeting rooms. Heelands, like Stewart's subsequent **Summerfield** and the contemporary Priory Common First School, Bradwell, MK of 1983 by Susan Stewart shows the influence of Iver's enclosing plan.

¶ **Summerfield County Combined School**, Bradwell Common, Milton Keynes; Buckinghamshire County Council Architect's Department (job architect John Stewart), designed 1983, built 1984-85.

'The boldest school of its date in MK', according to the *Buildings of England*.[83] Like the earlier **Iver** and **Heelands** Schools (qv), the plan of Summerfield is based on two angled wings. Here the organising device is two axes at 45° which relate the building to its setting. The hall and western teaching wing aligns with the formal approach to the school and the MK grid. The axis is playfully acknowledged by a boiler house—perhaps the most architectural boiler house in England—which combines a Venturi split gable

with a Stirling flue stack.[84] The axis of the main entrance and eastern teaching wing follows the former field boundary, preserved as a hedgeline which bisects the site.

Groups of three northfacing home bases receive additional light from the split-pitched roof. They are broken up by round angle towers (WCs and cloakrooms) which peek out from under the eaves. Both teaching wings have shared areas which look out onto the enclosed court. The exterior is detailed in blue engineering brick and yellow brick, separated by a moulded red brick stringcourse and sills and black cross windows.

¶ **Loughton Middle School**, Bradwell Road, Loughton, Milton Keynes; Buckinghamshire County Council Architect's Department (job architect Roger Heyne), designed 1985, opened 1987.

At Loughton the internal street snakes back on itself enclosing two courtyards. Between them, at the heart of the school, is a resource centre. It was planned as a 480-place with sixteen outward-facing home bases. Between each pair the street changes course; in the resultant wedge are twin entrances to the home bases, WCs and cloakrooms. The two entrances are poorly articulated on the exterior, a defect which was remedied at **Heronsgate** (qv). The teaching areas receive additional natural lighting from patent-glazed rooflights in the valley of the double gable roof.

¶ **Heronsgate Middle School**, Lichfield Down, Walnut Tree, Milton Keynes; Buckinghamshire County Council Architect's Department (job architect Mehdi Ali Abidi), designed 1987, built 1988-89.

Heronsgate refines the organisation of the earlier Milton Keynes Schools. The plan describes a D, with the hall and kitchen at one of the angles.[85] On the inside of the curve is a continuous shared area, divided into bays. The split-pitch allows the outward-looking home bases to receive additional lighting and cross ventilation from a clerestorey. This is sheltered by overhanging eaves and is equipped by a maintenance walkway. As at Loughton, pairs of home bases share an entrance lobby with coathooks, articulated from the outside by nodding gables. The individual entrances enable

Fig 4.130: Heronsgate Middle School. © Mehdi Ali Abidi.

Fig 4.131: Courtyard at Heronsgate Middle School in 2011 (P5925021).

the street to function as a teaching area and prevent circulation from becoming a distraction. The bright colour scheme includes yellow and red brickwork, orange paviours, dark stained facia boards and scarlet metal windows, the latter sympathetic replacements for the original softwood frames. The siting of buildings and their landscaping is, as at Summerfield, boldly axial: the entrance aligns with Wadesmill Lane to the south. Additions of 2004, including an extension to the west (referencing Le Corbusier's monastery at Tourette) and the infilling of part of the courtyard, detract somewhat from the geometrical purity of the plan.

Secondary Schools

¶ Additions to **Royal Grammar School**, High Wycombe; Buckinghamshire County Council Architect's Department (job architects J. Malcolm Dean and J.N. Davis), built 1961-63.

The Royal Grammar School at High Wycombe is one of a number of Buckinghamshire grammar schools of sixteenth-century foundation. A new site a mile outside High Wycombe was planned for 200 boys only. By 1963 the roll was over a thousand. The buildings of 1961-63 are centred on the same axis as the imposing 1915 neo-Georgian school and end wings wrap around to form a quadrangle, with circulation in the form of open-air 'cloisters'. The complex, opened by the Queen, includes a large hall, a junior school, music department, sixth-form rooms and administrative and staff rooms.

The first-floor Queen's Hall is raised over an undercroft which affords views of the quad and old building beyond. The hall is reached via a

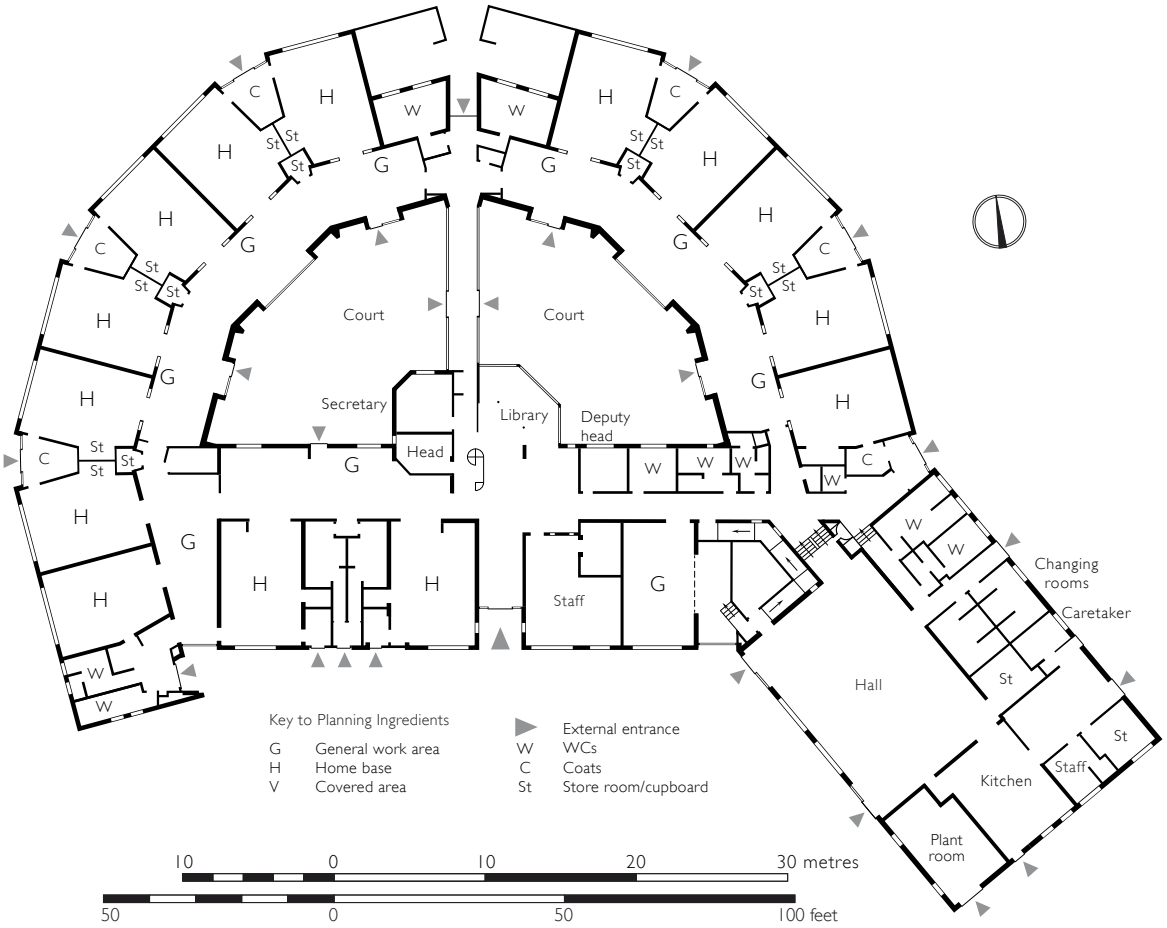

Fig 4.132: Heronsgate Middle School, Walnut Tree, Milton Keynes; Buckinghamshire County Council Architect's Department, 1988-89..

ceremonial T-plan stair, one of the Department's set pieces. The double-height stair hall is finished in white terrazzo, decorated by an eighteenth-century royal coat of arms in plaster (salvaged from a demolished local church) and top-lit from an octagonal lantern. Its architectural impact is heightened by the subdued lighting and low-ceilings of the adjoining lobbies. The hall is lined with timber panelling set between columns faced with terrazzo, and a suspended ceiling of facetted tiles lends a Festival of Britain air.[86]

The exterior is tough but refined, with the Bison precast concrete frame exposed as slender, aggregate-finished columns sitting on broad brick bases. Large, blind panels of red-brown brick front the Amersham Road elevations but the hall is fully glazed to the north, giving views towards the old school. The Junior School is distinguished by its boxed out windows. The result is as close to Brutalism as Bucks ever came and anticipates Dean's County Hall at Aylesbury of 1963-66 and Slough Central Library of 1974.[87]

¶ **Stantonbury Campus**, Stantonbury, Milton Keynes; Buckinghamshire County Council Architect's Department (job architect for the schools Jack Speight, the resource centre Haydn Gowman with David Aylett), initial phase 1973-75.

At the time of its construction Stantonbury Campus was the largest school in the UK. It occupies a third of the grid square of Stantonbury which was laid out from 1972. It is an example of the strategy of concentrating secondary school provision, along with community facilities, onto a few large campuses enjoying a wide catchment area. The result had something of the appearance and many of the facilities of a university campus, and indeed Jack Speight had earlier worked on York University as a member of Robert Matthew Johnson-Marshall & Partners. The first head of Stantonbury, Geoff Cooksey, was in place three years before the first pupils were admitted and was consulted in the planning of the complex.[88]

Three ten-form entry comprehensive schools each of around 1,500 pupils were conceived, each contributing to a shared resource and leisure centre including a well-equipped theatre. Bridgewater Hall to the north of the leisure

Figure 4.133: A courtyard at Stantonbury Campus, the flagship secondary at Milton Keynes (P5925022).

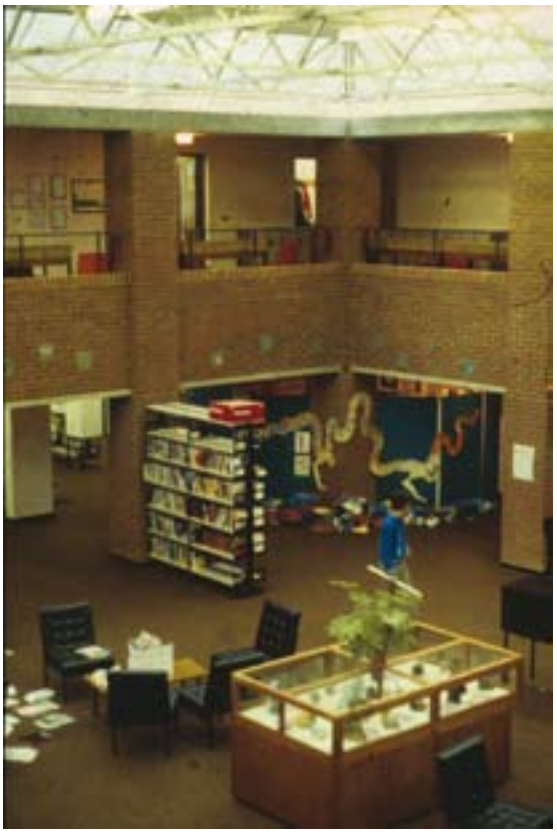

Figure 4.134: A galleried resource area at Stantonbury Campus, Milton Keynes in 1978. Institute of Education Archives: ABB/1/81/4.

centre was the first school to open, in 1974. By the completion of Brindley Hall *c.*1982, a third comprehensive, to be named Telford and planned to the east of the present site boundary, had been abandoned.[89] The community facilities

supplant the local centre normally provided for each grid square and include a youth club, an interdenominational church, health clinic, leisure centre and shops. At Lloyds the chemists can be found *Bicycle Wall*, a ceramic tile mural by John Watson of 1977-8, made and fired in one of the art departments.

Separate buildings, mostly of one or two storeys are linked by planted courtyards, covered ways and changes in level. Later additions have maintained the familiar Buckinghamshire schools vernacular of red brick, tiles and dark-stained windows. The interior planning combines rows of single-aspect classrooms with open spaces for individual study and discussion. The layout was sufficiently open-ended to allow a 1980s reorganisation of the Campus into five large 'halls' of around 500 pupils each, to better offer pastoral care and a sense of belonging to pupils.

¶ **Sir Frank Markham Community School**, Woughton Campus, Leadenhall, Milton Keynes; Buckinghamshire County Council Architect's Department (job architect Mehdi Ali Abidi), designed 1977, built 1978-79, demolished 2010.

Woughton was the second of the giant educational campuses serving Milton Keynes and occupying the northern edge of the Coffee Hall grid square. The 1977 masterplan, developed by MKDC planner Jim Muldrew with Abidi, applied the lessons learnt at **Stantonbury** (qv), namely the need for each school to have its own identity and a greater awareness of security. The campus was to be an open site occupied by four 840-place schools, built in phases, along with community leisure and recreational facilities. Sir Frank Markham was the first school to open, in 1979. A second phase followed *c.*1983, designed by Tony Parker around an angled internal street (qv his earlier infant school at **Iver**). Subsequent additions—the L plan Milton Keynes College Sixth Form Centre completed in 1985 to the designs of Chiu Ng and St Pauls RC School, which follows the dispersed plan of Stantonbury–deviated from the masterplan.

A compact layout was devised for Sir Frank Markham School so that housing could be developed on the fringes of the campus, maximising revenue from the grid, keeping the community facilities in use and providing a continuous security presence on the site. Abidi's choice of a multi-courtyard plan reflects Arne Jacobsen's Munkegård School of 1948-57 in Dyssegård, Copenhagen and Evans & Shalev's Newport High School, Gwent of 1967-72—but also an absorption of Oscar Newman's notion of 'defensible space'.[90] Pitched roofs were unavoidable at Bucks and Abidi recalls 'friendly but persistent pressure [from MKDC] to go for something a bit more space age'. [91] The upper floors and their pitched roofs were both jettied out by more than a metre. The school was adjoined by a jointly-funded leisure centre with large sports hall and swimming pool, and a music and drama wing. Sir Frank Markham Community School closed in 2009 and has been redeveloped as Milton Keynes Academy.

Fig 4.135: Sir Frank Markham Community School, Woughton Campus, Milton Keynes; Buckinghamshire County Council Architect's Department, 1978-79. © Mehdi Ali Abidi.

ENDNOTES

1. Guy Oddie, pers.comm., 4 October 2010.
2. Bendixson 1992, 21.
3. Saint 1987, 156.
4. Gregory, G., *Some Uses of Calculated Brickwork in Buckinghamshire*, Clay Products Technical Bureau (London) Technical Note, vol. 1, no. 3, 1963; *Brick Bulletin*, vol.5, no.2, January 1963, pp.1-12.
5. *Architects' Journal*,vol.142, no.25, 22 December 1965, p.1509; John Collins pers.comm., 27 October 2010.
6. *Building Design*,nos.182/183, 4/11 January 1974, p.16; Bill Berrett, pers.comm., 6 December 2010.
7. John Collins pers.comm., 27 October 2010; *Architects' Journal*, vol.144, no.14, 5 October 1966, pp.851-66.
8. Since incorporated within the Jacobs group, where Stewart remains as vice president of UK buildings.
9. Pooley's architects devised a plan for a North Buckinghamshire New City of 250,000 in 1962-64, but this was subsequently abandoned for a plan by the planning consultants Llewelyn-Davies, Weeks, Forestier-Walker and Bor.
10. The plan and section of Naphill was published in the *Architects' Journal*, vol.180, no.49, 5 December 1984, p.58.
11. Saint 1987, 138.
12. Institute of Education Archives: ME/V/1: letter of 17 May 1987 from Jack Speight to Andrew Saint; Saint 1987, 174. Barker became County Architect of Bedfordshire County Council in 1960 (Chalk 2006, 7 & 11).
13. Institute of Education Archives: ME/V/1: letter of 17 May 1987 from Jack Speight to Andrew Saint; Saint 1987, 174.
14. Pooley 1963a, 608.
15. Saint 2003, Franklin 2009.
16. Pooley 1968, 107.
17. Pooley 1968, 108.
18. Pooley 1963.
19. Now combined as Drayton Park School.
20. Saint 1987, 156; Institute of Education Archives: ME/V/1:letter of 17 May 1987 from Jack Speight to Andrew Saint.
21. William Durrant School, Chesham (now renamed Little Spring) and Broughton Junior, Aylesbury are mirrored copies of Woodside School.
22. James Parke, pers.comm., 7 December 2010. This structure remained in place in Buckinghamshire until reorganisation in 1998.
23. James Parke, pers.comm., 7 December 2010.
24. James Parke, pers.comm., 7 December 2010.
25. Ali Abidi, pers.comm., 22 November 2010.
26. 1995 interview with James Parke, Senior Education Officer for Buckinghamshire County Council by Joyce Hartley, available at http://www.idoxplc.com/idox/athens/ntr/ntr/cdl/html/txt/u3350200.htm, accessed 15 August 2012.
27. Ali Abidi, pers.comm., 22 November 2010; James Parke, pers.comm., 7 December 2010.
28. John Stewart, pers.comm., 3 December 2010.
29. Quoted in Dudek 2000, 61. The school is written up in the *Architects' Journal*, vol. 198, no. 18, 10 November 1993, pp. 43-55. Kents Hill First School of 1995 is strikingly similar.
30. James Parke, pers.comm., 11 January 2011.
31. Crook 2002.
32. James Parke, pers.comm., 7 December 2010.
33. James Parke, pers.comm., 7 December 2010.
34. *Builder*, vol. 198, no.6096, 18 March 1960, pp.540-542.
35. *Architects' Journal*, vol. 173, no. 24, 17 June 1981, pp.1159-61.
36. James Parke, pers.comm., 11 January 2011.
37. James Parke, pers.comm., 10 December 2010.
38. 1995 interview with James Parke, Senior Education Officer for Buckinghamshire County Council by Joyce Hartley, available at http://www.idoxplc.com/idox/athens/ntr/ntr/cdl/html/txt/u3350200.htm, accessed 15 August 2012.
39. 1995 interview with James Parke, ibid.
40. 1995 interview with James Parke, ibid.
41. Edwards 2001.
42. 1995 interview with James Parke, ibid.
43. See, for example, Oak Green School, Aylesbury of 1947 or Western House School, Slough of 1952 (demolished; BCC 1977, 3). For Stillman, see Saint 1987, 53-57.
44. Institute of Education Archives: ME/V/1:letter of 17 May 1987 from Jack Speight to Andrew Saint.
45. For the development of Inter-grid, see Saint 1987, 143-51.
46. *Architect & Building News*, vol.225, no.10, 4 April 1964, pp.395-400. The Royal Grammar School coincided with Dean's design in precast concrete for the headquarters of Buckinghamshire County Council, with Malcolm Last and Martin Jones. Ali Abidi, pers.comm., 9 December 2010.
47. Pooley 1963A&B; Pooley 1968, 106.
48. Chalk 2006, 20.
49. Chalk 2006, 20.
50. Ali Abidi, pers.comm., 22 November 2010.
51. John Stewart pers.comm., 8 October 2010.
52. Pooley 1968, 106.

53. *Building Design*, nos.182/183, 4/ 11 January 1974, p.16.
54. Pooley 1968, 108.
55. Pooley 1968, 108.
56. Ali Abidi, pers.comm., 22 November 2010.
57. This style, employed by Buckinghamshire architects Arthur G. Humpston, Ambrose Frank Humpston, Don Pearce and Sid Hendle, was close to that labelled by the *Architectural Review* as 'the New Empiricism' (Bill Berrett, pers.comm., 6 December 2010; Frampton 1992, 263).
58. Institute of Education Archives: ME/V/1: letter of 17 May 1987 from Jack Speight to Andrew Saint. For R.C.N. Paul at Hertfordshire see Saint 1987 107-08. He was later County Architect for Berkshire.
59. Bill Berrett, pers.comm., 6 December 2010. The farm at Fulmer was published in *Architect & Building News,* vol.24, no.36, 4 September 1963, pp.361-65 and *Architectural Review,* vol. 134, no.979, July 1963, pp. 51-56.
60. John Stewart pers.comm., 8 October 2010. In Denmark, Utzorn designed housing schemes at Kingo, Helsingor of 1956-58 and Fredensborg of 1959-65.
61. BCC 1977; Ali Abidi, pers.comm., 22 November 2010. The best examples of the libraries designed by Ron Walker are Buckingham, Wendover, Great Missenden, Haddenham, Burnham and Stony Stratford. Great Missenden, Haddenham and Burnham are featured in the *Architects' Journal*, vol. 159, no. 8, 20 February 1974, pp. 379-98.
62. Darley and Davey 1983.
63. Pooley 1968, 110.
64. John Collins pers.comm., 10 November 2010.
65. Frampton 1992.
66. Ali Abidi, pers.comm., 22 November 2010; James Parke, pers.comm., 11 January 2011.
67. John Collins pers.comm., 27 October 2010.
68. Maclure 1984, 170. See also *Architects' Journal*, vol.157, no.7, 14 February 1973, pp.392-93.
69. *Architects' Journal*, vol.157, no.7, 14 February 1973, pp.390-91.
70. Pooley 1968, 111.
71. *Architect & Building News*, vol. 229, no.24, 15 June 1966, pp.1083-86. See also *Building,* vol. 210, no. 6416, 6 May 1966, pp.102-04.
72. Drawing number 1930/1/2, dated 4 June 1971, digital copy supplied by Buckinghamshire County Council, Strategic Property & Asset Management department.
73. Pevsner and Williamson 1994, 138.
74. See, for example, the large dormer Aldington added to John Craig's house at Haddenham.
75. Drawing number 2129/SK2, dated 21 May 1970, held at Milton Keynes Council (Design and Building Services department).
76. The late 1950s rebuilding of Rushbrooke village near Bury St Edmunds, Suffolk by Richard Llewelyn-Davies and John Weeks is a likely influence (Bill Berrett, pers.comm., 6 December 2010).
77. Turn End, Middle Turn and the Turn of 1963-68.
78. BCC 1977, 38.
79. Drawing number 2128/WD/1, dated June 1974, held at Milton Keynes Council (Design and Building Services department).
80. Ali Abidi, pers.comm., 22 November 2010.
81. The plan and section of Falconhurst was published in the *Architects' Journal*, vol.180, no.49, 5 December 1984, p.58. At the GLC Pimlico Secondary School (pages 201-03), the internal concourse was intended primarily for circulation route where informal social contact could take place, and not for learning. The same was true of the 'meeting path' which formed the backbone of Hans Scharoun's unrealised 1951 design for primary and secondary schools at Darmstadt, Germany.
82. John Collins pers.comm., 27 October 2010. See also *Architects' Journal*, vol. 173, no. 24, 17 June 1981, pp.1159-61.
83. Pevsner and Williamson 1994, 515.
84. The referenced buildings are Robert Venturi's Vanna Venturi House of 1962-64 and Stirling and Gowan's Leicester Engineering Building of 1959-63.
85. When first shown the plan, the Senior Education Officer James Parke called it a 'protractor school', to the architect's amusement (James Parke, pers.comm., 11 January 2011).
86. *Architect & Building News*, vol. 225, no.10, 4 March 1964, pp.395-400. See also BCC 1977, 18.
87. Qv Slough Central Library of 1974.
88. Weeks 1986, 119.
89. James Parke, pers.comm., 10 December 2010.
90. Oscar Newman's book *Defensible Space: Crime Prevention Through Urban Design* was published in 1973 at a time of widespread social unrest and vandalism and discontent with high-density housing schemes. At Sir Frank Markham Community School each range of a courtyard plan was overlooked by others and there are no setbacks or nooks and crannies.
91. Ali Abidi, pers.comm., 22 November 2010.

HAMPSHIRE

Figure 4.136: Hampshire: location of gazetteer entries.

Hampshire

The story of school-building in post-war Hampshire falls neatly into two halves, each responding to and representing wider trends of demographics, educational policy and architecture. The first three post-war decades in Hampshire, as elsewhere, was a race to put roofs over heads: more than 260 schools and colleges were built between 1945 and 1974, with a further 140 in progress at the latter date.[1] Hampshire is a large and predominantly rural county with a population of 1.75 million, mostly concentrated in three historic cities—Portsmouth, Southampton and Winchester—and a diversity of natural scenery including a southern coastline and rolling downland countryside. Hampshire County Council has historically combined relative affluence (boasting a considerable land bank amongst its assets) with conservatism, having strong representation from landowners, farmers and members of the armed forces. After 1945 the County experienced rapid and sustained population growth: a rise of 21% was recorded between 1951 and 1961 compared with 5% for the rest of the country. Its school population increased from 64,000 in 1946 to 110,000 in 1960.[2] Although much growth can be attributed to the 'bulge' in the birth rate, the regional factor was the expansion of industry, energy, the armed forces, transport facilities and the increasing migration of London's population and businesses. This growth continued to increase rapidly throughout the 1980s and 1990s, causing a continued demand for new primary schools that did not exist elsewhere.

Patrick Abercrombie's Greater London Plan of 1944 proposed expanded town schemes at Andover and Basingstoke to take London's 'overspill' population, having previously thought too remote. After the cancellation in 1960 of an LCC scheme for a new town for 100,000 at Hook, expanded town schemes were agreed at Andover, Basingstoke, Farnborough and Tadley. These generally took the form of housing in 'Radburn' layouts and industrial estates set around a commercial centre, the whole tied together by ring roads.[3] Additional expansion occurred with the replanning of the military town of Aldershot and the growth of the conurbation stretching from Southampton to Portsmouth (both separate LEAs). The extension of the M3 motorway in 1968-71 linked Camberley, Farnborough, Fleet and Basingstoke and enabled a corridor of housebuilding and high-tech 'sunrise' light industries. Although planned in the public sector, the large new suburbs were built by firms of house builders to standard designs. The absence of sports, recreational and community amenities, and indeed the lack of focal points and a sense of place was a matter of protest from the start.[4] The provision of schools in post-war Hampshire came to be viewed as a way of alleviating these problems through community provision or 'place making' architectural forms.

School building in Hampshire peaked in 1969-72, partly as a consequence of the raising of the school leaving age to 16 and a reorganisation scheme. The most adroit player of the 'numbers game' was Lt Col Harry Benson Ansell (1914-86), Architect to Hampshire County Council from 1960 to 1973. His retirement coincided with local government reorganisation and a necessary re-evaluation of every aspect of school building, from population trends to architecture. The emerging opportunities were seized by his successor Colin Stansfield Smith who, over the next 18 years, presided over a remarkable

shift from quantity to quality, transforming thinking about public buildings and their sites and remodelling the structure and culture of his Department in the process. In these years Hampshire acquired an international reputation for the eclecticism, wit and imagination of its buildings: 'the variety of Hampshire schools seems almost limitless', the *Architects' Journal* remarked in 1992.[5] By then, when most local authority architect's departments were being wound down, Hampshire was bidding for out-county projects such as the Shoreditch campus of Hackney Community College in London, jointly designed with Perkins Ogden Architects.

Quantity: the SCOLA Era

Hampshire's first permanent prefabricated school, Warblington Secondary School of 1955-56, was built in the BAC aluminium system.[6] Over the next few years Hampshire tinkered with a variety of proprietary systems based on concrete (Intergrid), timber (Medway and Derwent) and light steel frames (Hills).[7] A timber-framed system for primary schools was designed under Deputy Architect Robert Shaw.[8] Of serviceable construction, they remained small-scale, diffident ventures: the lion's share of the annual programme remained in brick. Unreformed traditional construction was labour intensive, increasingly difficult to keep within cost limits, but most of all too slow to meet demand.[9] It was necessary to place the entire programme on a different footing.

Figure 4.137: Prefabrication in practice: installing stair treads at Harrow Way Secondary School, Andover, c.1966. In a frame structure this kind of work could be completed under cover. Institute of Education Archives: ABB/B/1/216/2

The answer came with the arrival of Benson Ansell in 1960. A 'systems man' through and through, he had previously held the post of Deputy Architect at West Riding, a founder member of the CLASP consortium (page 160). His thoughts, he later recalled 'rather naturally turned towards the CLASP form of construction and at one time I had virtually persuaded the committee to join'.[10] But he was dissuaded by CLASP's inability to incorporate brick and judged its pin-jointed frame, designed for mining subsidence sites, redundant at Hampshire. The founding members of CLASP, for their part, had by 1960 decided the organisation had reached an optimum size, and Shropshire and Cheshire floated the possibility of establishing another consortium instead.[11] Cheshire, Dorset, Gloucestershire, Hampshire, Shropshire and West Sussex founded the Second Consortium of Local Authorities, known as SCOLA

('fancy celebrating coming second!' was Stansfield Smith's comment).[12] Ralph Crowe and Geoffrey Hamlyn of Shropshire were the prime movers, and development work was well underway before the initial meeting in June 1961.[13]

SCOLA, like most of the consortia systems, was not limited to educational buildings, and full membership could simply be gained by committing a certain sum to the annual programme and undertaking a share of development work. Hampshire accounted for 40% of its orders, effectively underwriting the consortium; it was, in Stansfield Smith's words the 'working class of SCOLA'.[14] The administrative structure comprised annual meetings of elected members, quarterly meetings of chief architects and monthly meetings of a technical working party.[15] At first development work was pooled amongst the authorities, each contributing a single development architect (Colin Swift represented Hampshire). From *c.*1968 a central SCOLA Development Group was established at Gloucester under Principal Architect Ray Freemantle, although Hampshire continued with development work.[16]

In many ways SCOLA was a typical 'light and dry' mode of prefabrication. Its Mark I was a fixed-end steel frame on a 3'4" module with lattice beams and pre-cast concrete floor slabs. Around the frame was wrapped metal-framed picture windows and spandrel panels, chunky hardwood rails, a plywood fascia and a flat, timber roof deck with asphalt covering. About thirty non-structural components were shared with CLASP.[17] Cladding options included shiplap boarding, interlocking tile, slate and brick: traditional in appearance, yet 'flush detailed' to occupy a single plane projecting well forward of the grid line, in best Modern Movement practice.[18] Most components were capable of being lifted and assembled by two men.[19] Significant constraints included a maximum span of 10 feet (dictated by the spanning properties of the timber rails) and a height limit of three storeys, later pushed to four. The system was rigourously tested through comparison with the cost plan for the MoE's Arnold Grammar School.[20] One of the first SCOLA schools was **Otterbourne Primary School** outside Winchester, built in 1962-63 (fig. 4.138). The first of several revisions, Mark Ia of 1964, substituted a pin-jointed, braced frame and a metal roof deck.

Figure 4.138: The SCOLA showcase: Otterbourne CE Primary School, Winchester; Hampshire County Council Architect's Department,1962-63. Institute of Education Archives: ABB/A/22/16

The early SCOLA schools looked smart in the promotional photos but there were long-running problems with the cladding, which Oscar Gammans attributes to the initial absence of a development group.[21] A new metal window-walling system was introduced in 1965-66 as Mark II, yet proved defective in many ways: For Guy Hawkins, a DES architect working with SCOLA Mark II at Delf Hill Middle School, Bradford, found the system 'really quite dire—minimal insulation, cold bridges and air leakage everywhere, flimsy roof, unresolved verge details, and inflexible floor-to-roof metal window system—the source of all the cold bridging'.[22] To this could be added a high rate of failure of the asphalt roof, poor ventilation and heating and a lack of fire breaks in the ceiling void—a contributory factor at several fires. With Mark IIa the 3'4" grid was modified to a I' planning grid (known as 3M) and a 2' structural grid (6M), which permitted modular coordination with compatible systems in line with central government recommendations.[23] This allowed SCOLA to jointly develop shared components with the SEAC consortium (page 314), such the as glassfibre-reinforced polyester (GRP) cladding first used at **John Hunt Comprehensive School**. Cupernham Infant School, completed in 1971, was the Hampshire prototype of the metric Mark III, which permitted brick cladding. After a decade of development, most of SCOLA's technical shortcomings had been resolved, yet demand had already peaked and with it the reputation of SCOLA.

But the niceties of prefabrication were only one aspect of the consortia approach endorsed by central government, which included the rationalisation of purchasing, tendering, costing and the production of drawings. Benson Ansell adopted these procedures wholesale, streamlining every stage of the school building process from design to erection. The scale of the programme demanded a production-line approach, run with military efficiency. As Oscar Gammans, Deputy Architect between 1971 and 1971, recalls 'there was the added pressure to get projects in the drawer so that each March we could go to the DES to soak up spare capital allocation not used by other Authorities'.[24] The operation was so well-oiled that on Benson Ansell's retirement it was questioned whether a county architect was needed at all.[25]

Most notorious was Hampshire's reiteration of entire designs.[26] The four 'repeat plans' produced *c*.1965 comprised a 2/3 form entry infant and junior school, a 3/5 form entry secondary school and a 4/8 form entry bilateral school. 'It would seem possible, with two or three exceptions,' Benson Ansell reported, 'to cover the whole SCOLA programme to 1967 […] by the judicious repetition of these designs'.[27] In practice, Gerry Way recalls, 'if you were busy you'd do a standard plan; if you had time or a tricky site, you'd do a one-off'.[28] Sloping sites were the biggest problem and occasionally tonnes of chalk were excavated to level sites at enormous expense.[29] Less time was spent at drawing boards, and from the late 1960s SCOLA pioneered the use of computer aided drafting (CAD) and computerised bills of quantities.[30]

Realising that large-scale prefabrication requires not a large workforce but a small cadre of highly skilled and specialised local firms, Benson Ansell soon set about reforming the way in which contractors were nominated and organised. The trial in 1962 of selective tendering (where invitations to bid are not advertised but issued to an approved shortlist) was a prelude to serial tendering (a batch of contracts let to a single contractor), trialled at 31 projects in the 1965-67 building programme.[31] Much

experience was gained from Nottinghamshire, where Henry Swain had introduced this method of procurement with success (page 134). The nominated contractors could build up expertise in SCOLA, invest in special plant and develop close working relationships early on in projects and programmes. Benson Ansell reasoned that 'the cost of a job is determined at the drawing board and the question could be posed as to why the builder is not brought in at this stage'.[32] An evaluation found that prices came in up to 5% lower than comparable one-off tenders, a margin which stood Hampshire in good stead during the inflationary period of the early 1970s. Serial contracts were also employed for the bulk purchase of everything from SCOLA components to chain-link fencing.

Educational Policy and Practice

In response to the Government's Circular 10/65 on comprehensive reorganisation and its intention to raise the school leaving age, in 1968 Hampshire County Council submitted a scheme of reorganisation combining comprehensives with integrated sixth forms and a smaller number of 12-16 comprehensives feeding 16-19 sixth-form colleges.[33] Of the latter, perhaps the most noteworthy were the technical colleges at Havant and Andover, designed by Graham Perkins and Trevor Harris respectively.[34] The Council adopted a cautious position by implementing their plan district-by-district: by April 1974, only eight out of the 19 educational divisions in the county had been reorganised, with deadlines agreed for a further six.[35] As at Buckinghamshire and elsewhere, the age of transfer to secondary education was raised to 12, mitigating the effect of the age raise. Larger primary schools were organised in two stages—first schools for ages 5-8 and middle schools for ages 8-12; primary schools served less populous areas.

What of pedagogy in Hampshire? On Oscar Gammans' arrival from Notts County Council as Deputy Architect in April 1971, he found 'a big machine churning things out with little educational input'.[36] Briefs were little more than schedules of accommodation and teaching methods were 'not a matter of discussion with the Education Department'.[37] Designs were displayed in the Advisers' Room at County Hall for three days but attracted few comments.[38] Planning concessions to 'child-centred' teaching practices mostly took the form of the 'Marley' folding partitions installed between pairs of classrooms. The SCOLA fixed partitions were demountable, so in theory the planning of the school could be reconfigured during the school holidays, but this was seldom carried out for educational reasons.[39]

Gammans sought to introduce something of the informal architect-educationist collaborations that had obtained under Henry Swain at Nottinghamshire (pages 138-39). He found allies in the Deputy Education Officer Richard Clark and Assistant County Architect Michael Morris, who joined Hampshire on the same day in 1972. The trio, assisted by Chief Quantity Surveyor John Bennett (also from Notts), formed the core of an inter-departmental development group with the aim of overhauling the standard briefs to better represent current educational practice.[40] They started by visiting recently completed Hants primaries and found teachers improvising in cramped and largely cellular layouts, with small groups squeezed into corridors and removing the coatpegs of the cloakrooms to better work there. Space had been squeezed so much that the designers of the contemporary Brockhurst Infant School, Gosport contrived extra

floor area by setting the external walls 900mm outside the grid with a patent glazed roof extension.[41] If anything, the experience confirmed their belief that educational activity should be the starting point for school design; an obvious point perhaps, but one overlooked in the Hampshire school-building campaign.[42] 'A set of scale-modelled Pel 'Forme' school furniture was bought', Morris recalls, 'and we sat around a sheet of squared paper playing "schools" like children'.[43] For Clark, 'the roles were reversed: the educationists had felt-tip pens, drawing on plans and flip charts.'[44] The team also consulted the DES Eveline Lowe Primary School (pages 110-11) and recent Nottinghamshire schools.

The primary brief issued in 1973 threw circulation into an open 'resource area' for shared and practical work, whilst providing withdrawing space in the form of a 'snug', an enclosed, cosy area for quiet reading.[45] At around the same time the Education Department collaborated with the DES Development Group on the design of Guillemont Junior School (pages 114-15). Here a deep plan accommodated a range of teaching areas, clustered around open courts. The project had little influence on Hampshire, perhaps because it bypassed the Architect's Department or because it coincided with personnel changes on local government reorganisation. A little later, divisional head David White's scheme for Pennington Special School provided a glimpse of the architectural and educational possibilities of Guillemont's 'semi-open' plan, but it was neither built nor its layout taken up at Hampshire.

The primary brief was further amended *c.*1978 by Senior Education Advisor Jock Killick, and in this form remained virtually unchanged for the following decade.[46] Influenced by the work of the Medds (page 106), Killick wanted a variety of teaching areas of different scale and character, grouped into a 'teaching cluster […] capable of a range of different organisational patterns and catering for age differences, variety in groupings and individual teacher preferences.'[47] Each enclosed classroom opened onto the playground and possessed its own tiled practical area and quiet area for study or tutorial work.[48] These were arranged by Stansfield Smith's staff into repeated units, invariably based on rows of classrooms. Corridors were widened and irregularly shaped to allow small group work. Hampshire regularly provided around 10% above the statutory minimum teaching area and the DES may have followed their lead in raising it in 1981.[49]

Broadly speaking, two generic plans evolved in response to the revised primary brief. Killick favoured centrally-planned layouts, with a hall at the 'heart'.[50] Red Barn Primary School at Portchester, designed in 1977-78 by Jackson Greenen Down & Partners and built in 1978-79, and the better-known **Four Lanes Primary School** at Basingstoke, an in-house design of 1980-81 are early examples (fig. 4.139). The shared central space presented the possibility of cooperative teaching, and at **Burnham Copse Infant School**, Tadley, architect Ian Templeton covertly arranged evening meetings with staff to discuss the educational possibilities of 'open plan', although direct contact was then discouraged by the Education Department.[51] **Newlands Primary School** at Yately, designed in 1978-79 by Mervyn Perkins, was the first application of a linear plan comprising a row of classrooms with paired quiet areas at the back and practical and shared areas reached from a circulation spine (fig. 4.140). In later designs the practical area was relocated to

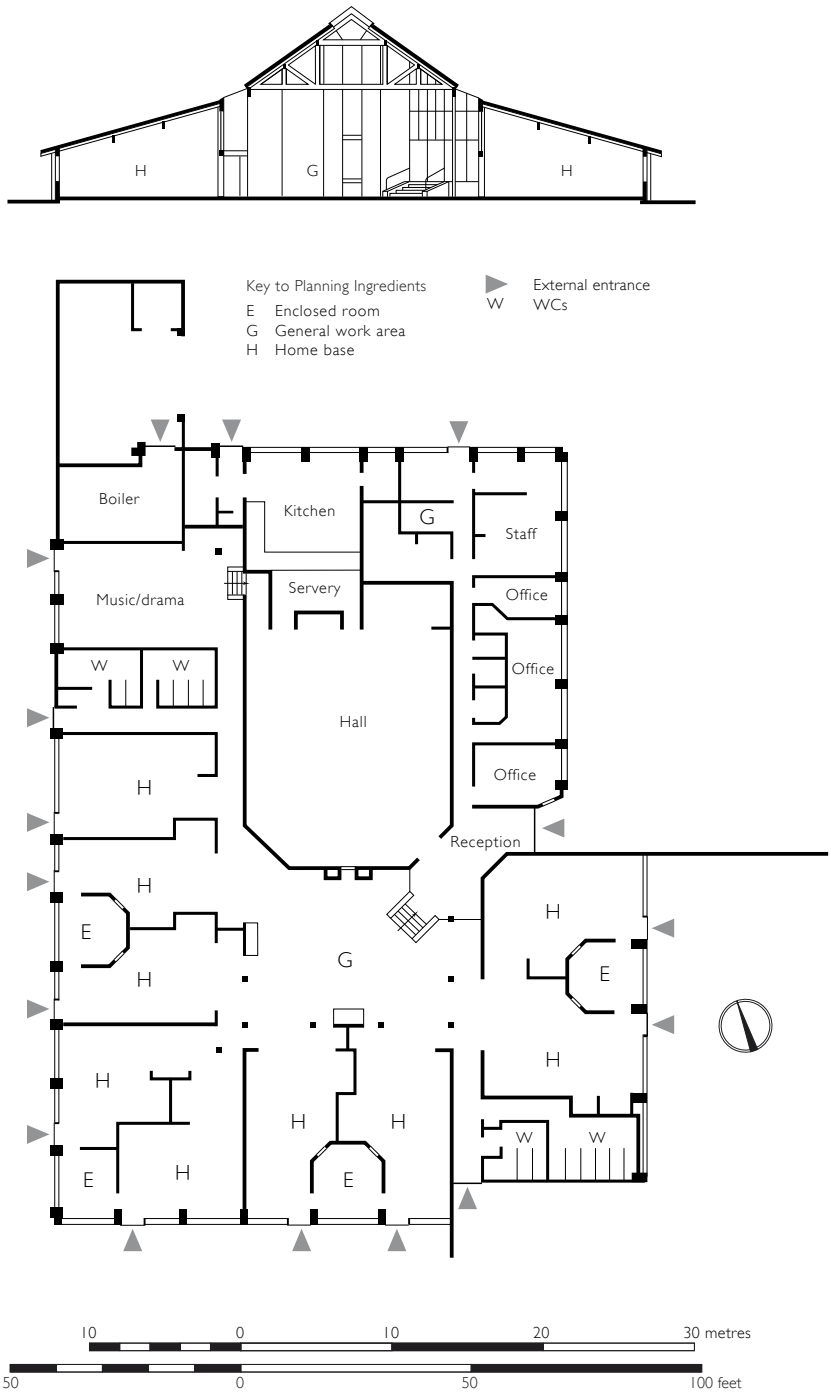

Figure 4.139: A plan with a 'hall at the heart'. Four Lanes Primary School, North Chineham, Basingstoke; Hampshire County Council Architect's Department, 1981-82.

the front so messy and wet work could continue outside. Killick did not favour the linear layouts, which were criticised by educationally-minded architects such as David Medd.[52]

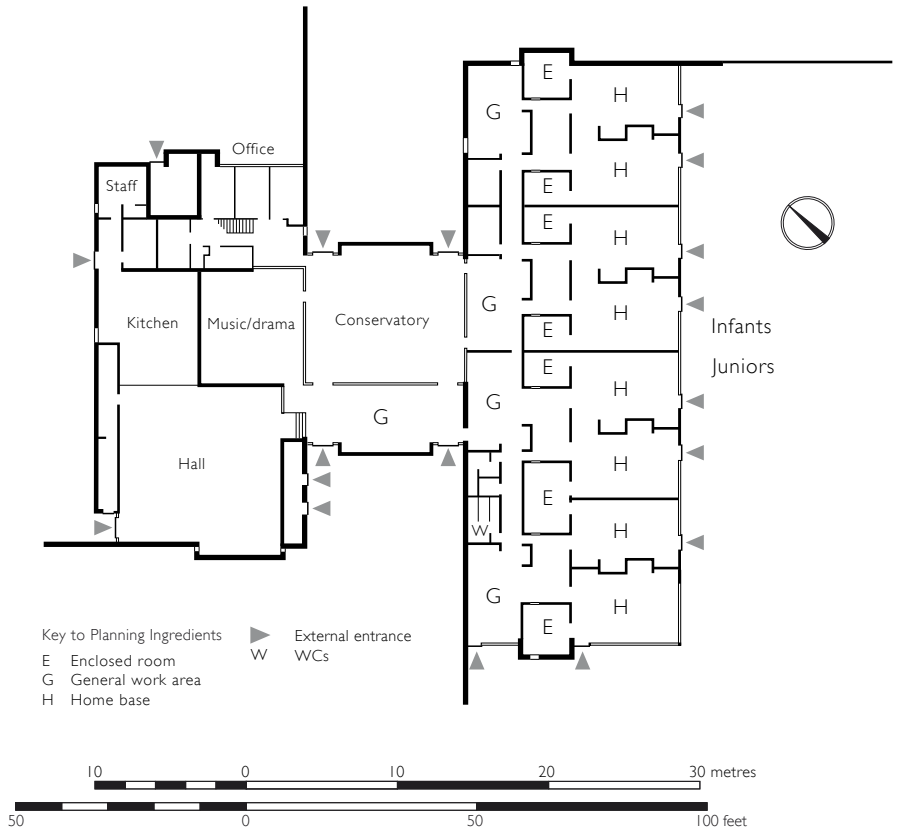

Figure 4.140: The return to rows of classrooms at Newlands Primary School, Yateley; Hampshire County Council Architect's Department, 1979-80.

The Hants Development Group reconsidered secondary planning at a new comprehensive school at Brighton Hill, Basingstoke, designed *c.*1973.[53] The school was Hampshire's first community school, and its layout was organised according to different degrees of public access and integration. It was to be jointly managed by a Head Teacher and Community Officer and supplementary funding from Basingstoke District Council allowed a larger gym and sports facilities.[54] Thought was also given to the 'rush hour' effect of hundreds of pupils transferring from lesson to lesson. Richard Clark had earlier taught at Woodberry Down School in Hackney, the first of the big comprehensives to be designed by the LCC; he knew from first-hand experience of the congestion in stairs and corridors when the bell rang. Analysing the timetable, Clark had the idea of grouping frequently-scheduled subjects and connecting them with wider corridors. Laboratories, workshops and 'language labs' were planned en suite so they could share teaching assistants. The practical rooms were designed with sufficient flexibility that, for example, a housecrafts area could be converted to a laboratory. The plan formed the basis for the initial phase of **Frogmore Comprehensive School** in Yateley, the last new Hampshire secondary school for some years.[55]

Quality: the Stansfield Smith Era

The culture of design fostered by Colin Stansfield Smith, County Architect from 1973 to 1992, could not have been a greater contrast with his predecessor.[56] He believed that public architecture 'must be the visible shop window of an enlightened local authority' and quickly realised that in an era of falling school rolls, energies could be devoted to one-off design.[57] In a 1984 address at the Royal Institute of British Architects he stated his position as the converse of what he inherited: product over process, project over programme, pluralism over standardisation, creativity over prescription, occasion and place over time and space.[58] At Hampshire, we see something close to the concept of 'critical regionalism' promoted by Kenneth Frampton (page 81).

Figure 4.141: Terry Riggs cartoon of Colin Stansfield Smith. Reproduced by kind permission of Hampshire County Council.

Yet the approach did not emerge fully formed. It is difficult to find a consistent theme amongst the many schools dating from the first five years of Stansfield Smith's tenure. Hampshire was committed to entire building programmes planned and specified under the old regime. Neither was it straightforward to decouple Hampshire from the SCOLA train, with all its political ties and the commitments of serial contracts and bulk purchase deals. It took time to assemble a team of young architects, ponder the course ahead and then to build up support amongst the elected members. The key political ally was councillor Freddie Emery Wallis, the Conservative leader of Hampshire County Council from 1976 to 1993, who backed an audacious and high-profile programme of public building. If, in the early years there was little indication of what would come, there was no doubting the strength of the reaction against the school building machine which Stansfield Smith inherited in 1974.

The backlash was not so much directed against the consortia approach *per se* as the lack of individual response to the design of buildings and their sites.[59] The sameness and mediocrity of Hampshire school sites, symbolised by the image of the typical SCOLA 'shoe box', amid-undifferentiated playing fields, tarmac'd playgrounds and chain-link fences, was another product of standardisation. In the name of efficiency, sites were carved up between autonomous departments with no single individual coordinating the whole. The grounds were planned on the width of a gang mower by the Estates Department, chain-link fences were provided by the Supplies Officer, the County Surveyor did the site roads and the architect was left with the bit in the middle; in all it was 'a sort of environmental game played by procedures and numbers'.[60] In the late 1970s Stansfield Smith wound down Hampshire's take-up of SCOLA and quietly left the consortium.

Soon after his arrival at Hampshire, Stansfield Smith poached a handful of bright designers from Cheshire, including David White, Huw Thomas and John Robinson,

Figure 4.142: Senior members of the Hampshire department at Winchester Great Hall in 1985. From left to right: Derek Poole (deputy county architect), David Chapman (building economist), Colin Stansfield Smith (county architect), David White (directing architect, north division), Geoffrey Burnaby (directing architect, west division) and Michael Morris (directing architect, central division). Reproduced with permission from Building*, vol.248, no.16, 19 April 1985, p.32.*

the latter Stansfield Smith's first Deputy.[61] The Portsmouth Polytechnic School of Architecture was another recruiting ground, providing Mervyn Perkins, Nev Churcher and David Morriss, year-out students and an interchange of ideas with staff such as Geoffrey Broadbent, James Powell and Barry Russell.[62] Stansfield Smith himself was a commanding presence, a persuasive performer 'in committee' and an accomplished designer in his own right. But most significant was his ability to recognise and encourage potential in his staff, creating a meritocratic environment in which talented designers thrived.

The Architect's Department, relatively small under Benson Ansell, grew to 180 by 1985, bucking national trends.[63] Three assistant county architects were each responsible for a tier of group leaders, who in turn headed teams specialising in police stations, libraries, residential homes, schools and so on.[64] Stansfield Smith reorganised the office into three geographical areas: central, northern and western divisions, each of 40-50 people and headed by a directing architect (fig. 4.142). The 'diet' of job architects thus became more varied and close working relationships with district planners and education committees developed, along with a friendly inter-group rivalry. Two architects usually worked together on bigger jobs, with assistance on drawing and detailing from a technician and keen interest from Stansfield Smith, especially during the conceptual stages. Job architects received due credit when projects were published in the architectural journals.

The Architect's Department became a 'design centre', with something of the atmosphere of an atelier or a school of architecture.[65] There were regular 'crits' or design reviews of current projects, voluntary life drawing classes, trips to see recent

architecture and architectural competitions were occasionally entered.[66] From 1976, presentation drawings and the work of the department's model makers under Alan Cooper were entered at the annual Royal Academy Summer Exhibition—hardly the traditional domain of local authorities—and exhibitions were held at the Great Hall in Winchester.[67] Richard McCormac, Edward Cullinan, Aldo van Eyck, Glenn Murcutt, Pirkko Higson and other luminaries came to Winchester to discuss their approach with the Department.[68] Barriers between public and private sector cultures were further breached and competition and influence encouraged by commissioning a share of the annual programme to private practices. Practices of national renown—Edward Cullinan, Michael Hopkins and Aldington, Craig and Collinge—were approached as well as the Winchester-based firms Jackson Greenen Down & Partners, Plincke, Leaman and Browning and Evans Roberts & Partners.[69]

The first glimpse of an alternative approach came with two projects for special schools, directed by David White, the key designer in the early years.[70] The first was a scheme for a day school for 50 children with severe mental disabilities, designed in 1976 by White and Brian Grayling for a site at Pennington near the south coast (fig. 4.143). Although it was not built, the scheme was prophetic in a number of ways. Its plan was an extraordinary game of geometry, clearly design-led, yet providing a variety of teaching areas in a fluid, interpenetrating configuration of teaching spaces. It was equally responsive to

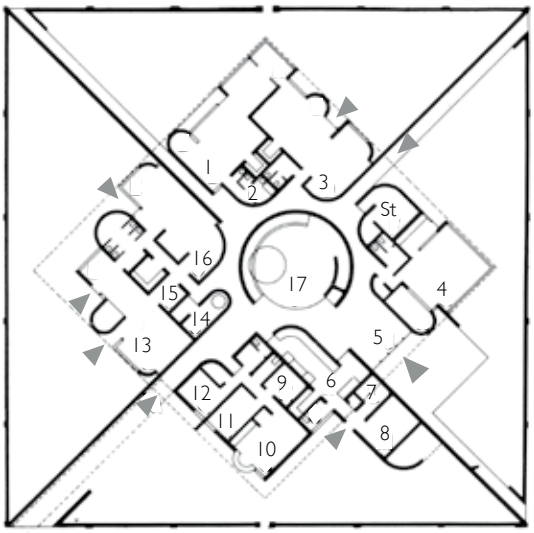

Figure 4.143 (left): The first of a 'one-off' tradition of design at Hampshire. A sketch by David White for the unbuilt Pennington Special School, c.1976. © Hampshire County Council.

Figure 4.144 (right) is a plan of the same scheme. The school is placed diagonally within a seventeenth-century walled kitchen garden. A mixture of 'semi-open' teaching spaces are grouped into quadrants. The project was shelved when Hampshire changed its policy on special education. Based on plan reproduced with permission from Architectural Review, *vol.163, no.971, January 1978, p.62*

Key

1	Nursery	12	Office
2	Bath	13	Younger pupils with severe disabilities
3	Middle years		
4	Older pupils	14	Splash pool
5	Dining	15	Wheelchairs
6	Kitchen	16	Older pupils with severe disabilities
7	Caretaker		
8	Boilers	17	Physical activities
9	Medical		
10	Staff	►	External entrance
11	Head	St	Store

Fig.4.145: A home base at St Francis Special School. Note the quiet bay, corner bay window and access to terrace. Photograph by James O. Davies – English Heritage; DP137498.

the character and idiosyncrasies of its site, to the extent that party walls stretch out to define play areas. White's 'guiding planes', inspired by Frank Lloyd Wright and Mies, recur at **Hulbert Middle School**, Waterlooville, **Newlands Primary School**, **Hatch Warren Infant School**, Basingstoke amongst others.[71] Pennington was to be fitted within a walled garden; the definition of edges and boundaries became a key preoccupation at Hampshire.[72] At the second school, **St Francis Special School** at Fareham, classes were planned as a series of staggered units, accessed from deeper shared central areas (fig. 4.145). This straightforward interpretation of the educational brief was the basis for many subsequent Hampshire plans, whilst at **Rookwood Infant School**, Eastleigh and **Elson Infant School**, Gosport the direct influence is clear. Pennington and St Francis Special Schools anticipate the sequence of projects upon which Hampshire's architectural reputation rests and which form the basis of the gazetteer below.

As a group, the Hampshire schools are best considered as variations on a series of spatial themes.[74] The first theme, the 'big roof' or 'barn' was first seen at **Fort Hill Secondary School**, Basingstoke (fig. 4.146).[75] A series of buildings followed which were notable for their lofty interiors and exposed trusses: **Four Lanes Primary School**, Chineham; Hulbert Middle School; Hatch Warren Infant School and the John Darling Mall at Eastleigh (a hostel of 1985 for young disabled adults). The second theme, the spine plan was developed

Figure 4.146: Four Lanes Primary School, North Chineham, Basingstoke; Hampshire County Council Architect's Department, 1981-82. Institute of Education Archives: ABB/B/1/217/2.

Figure 4.147: The lantern roof at Stoke Park Infant School. Photograph kindly supplied by Nev Churcher.

at Newlands Primary School, Elson Infant School, Netley Abbey Infant School near Southampton and the classroom wing of **Hatch Warren Junior School**. The layout was sometimes curved or staggered to close up spaces and create intimacy. Also linear were the 'arcades' of **Crestwood Secondary School**, Eastleigh; Farnborough College of Technology; **Fleet Infant School**, Velmead and **Queens Inclosure Middle School**, Cowplain, characterised by their central, top-lit corridors. The fourth theme was the festive conical roofs of Burnham Copse Infant School, Tadley; **Stoke Park Infant School**, Bishopstoke (fig. 4.147) and the hall at Hatch Warren Junior School.[76]

Beyond this it is difficult to generalise, although the fact that the Hants output can readily be classified by form is itself revealing. The themes were quickly picked up by the public and the schools acquired nicknames such as 'barns', 'tents' and 'tipis'. The one constant was the pitched roofs, which as Cedric Price explained:

> are not merely to shelter and enclose, but are used to signal the variety of volumes they cover, to indicate the nature of contained uses, to emphasise complexity, to unify the simple and to provide long range identity and colour.[77]

Remarkably for a generation raised on the modernist precepts of *plan libre* and flat roof, the pitched roof was enthusiastically employed in a variety of configurations by Hampshire architects; it was seen as a means of organisational discipline rather than a constraint.[78] The cross section, extruded along a straight, faceted or curved path, replaced the plan as the generator of architectural form; with this came the challenge of how to resolve the end walls.[79] Split-level plans were used at sloping sites where they helped to organise compact spaces, as at **Hatch Warren Infant School**. The conceptual

basis for other schemes, starting with **St Francis Special School**, was the juxtaposition of contrasting forms or volumes, expressed by Aldo van Eyck as the 'twin phenomena'.[80]

An alternative typology of Hampshire schools might take the basis of materials, traditions and styles of building. After SCOLA, detailing did not come easily, and long-forgotten brick and timber details had to be relearned from construction textbooks.[81] Stansfield Smith admitted that 'there is in the department a healthy creative tension between two factions where one side wishes to explore and speculate with new materials and new forms and the other side wishes to exploit the continuing tradition of building'.[82] Both approaches were equally capable of fashioning the standard educational brief into a multitude of forms. The former is represented by the hard-edged, orthogonal and metallic architecture of Phase II of **Frogmore Comprehensive School**, **Fleet Infant School**, **Queens Inclosure Middle School** (fig. 4.148), and straying into further education, Alton Tertiary College, Warsash College of Maritime Studies and the Farnborough College of Technology. These projects draw upon the high-tech idiom and the work of Australian architect Glenn Murcutt.

Figure 4.148: Queens Inclosure Middle School (now Queens Inclosure Primary School). © Hampshire County Council.

By contrast, the so-called 'brick and stick' approach produced earthbound, pragmatic and carefully-detailed buildings, such as **Bosmere Middle School**, Havant (fig. 4.149); **Elson Infant School**; **Burnham Copse Infant School**; **Woodlea Primary School**, Whitehill and Hazelwood First School, Totton.[83] The influence of vernacular forms such as tithe barns and traditional materials was better assimilated at Hants than in much contemporary

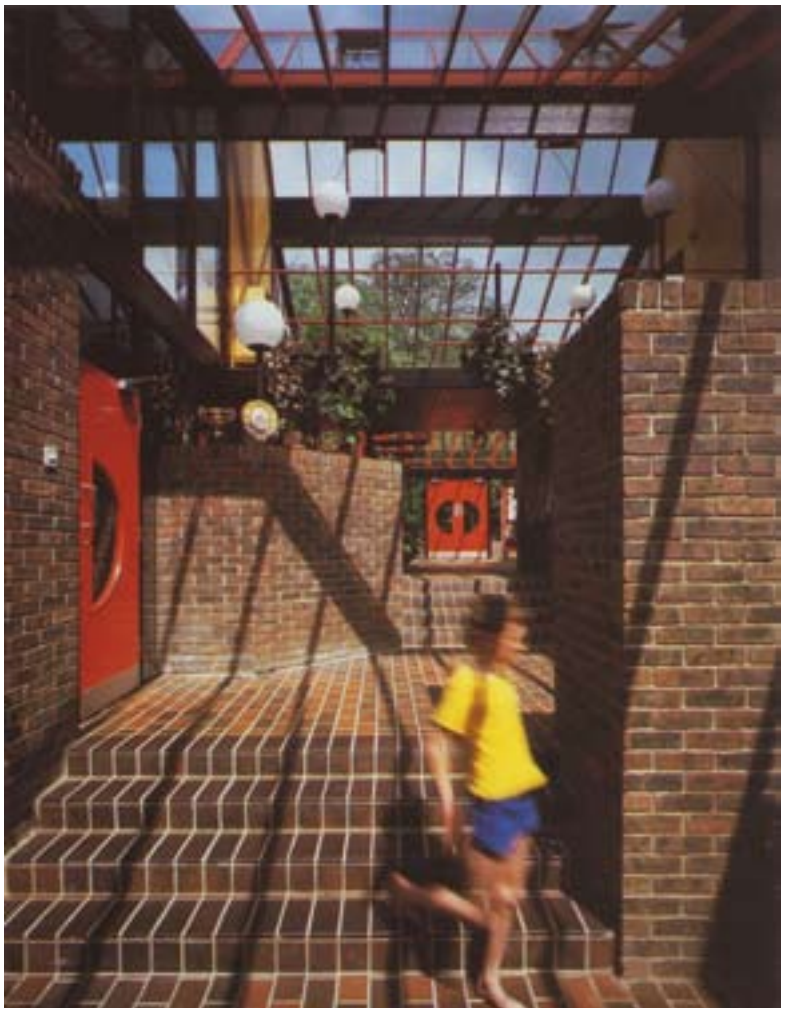

Figure 4.149: Bosmere Middle School. © Hampshire County Council.

'neo-vernacular' architecture. The polarity between groups should not be overemphasised, and there were common affinities with contemporary practices Aldington, Craig and Collinge, Richard MacCormac, Edward Cullinan and Robert Maguire. An interest in Alvar Aalto, Arne Jacobsen and Jørn Utzon, shared with Bucks architects (pages 248-50), showed in the dark stained joinery, boarded ceilings, exposed trussed rafters and painted fair-face brickwork that warm up many interiors. The English free school, the Arts and Crafts movement and the Victorian engineering tradition provided further points of reference.

In terms of the school design triumvirate of architect, educator and administrator (page 16), the Hampshire architect was in the ascendant. The other two arguably paid the price of architectural determinism, the former literally (it was not uncommon for projects to run over budget, requiring creative subsidy from other funds) and the latter figuratively, in that few Hants projects fully grasped the creative opportunity offered by patterns of educational activity. A given idea, such as a big interior volume, would typically be justified in the pragmatic terms of ventilation, cost or energy conservation; but architecture was invariably the impetus.[84] 'We must always be seen to give worthy and justifiable reasons to this third party client [the educational committee], as to why buildings should be built in the manner that we suggest', Stansfield Smith confided to his RIBA audience. 'This strange dialogue wherein we search for functional pegs on which to hang our architectural justifications has become almost ritualistic'.[85] He justified the latter in terms of education in its widest (and inevitably visual) sense: 'If there has been a hidden agent it is this aspiration for environments that stimulate and delight the spirit and these are part of educational experience'.[86]

Hampshire's concern for improving the quality of the school *environment* embraced such varied topics as interior design, energy efficiency, landscaping, historic building conservation and artworks. An interest in passive energy and environmental design took a variety of forms. There was a concern that most spaces should be naturally ventilated and daylit—one reason for the adoption of shallow, linear plans. The 'barn schools', with their deeper plans and large-volume interiors, were claimed as an energy conservation asset rather than a liability.[87] There was also much interest in highly-glazed 'buffer spaces' which would act as a thermal reservoir, keeping down heat losses in the main building.[88] The idea of the glazed open-air courtyard first surfaced in an aborted scheme of *c.*1976 for the conversion of Gosport School into a sixth-form college. Mervyn Perkins, who at Portsmouth Polytechnic had written a dissertation on glass and energy, incorporated a conservatory at **Newlands Primary School** and the glazed arcade was developed by Huw Thomas at **Crestwood Secondary School**.[89] Derek Poole, specialist on environmental design at the Architects and Building Branch, was appointed Deputy County Architect at Hampshire in 1979.[90] He drew the strands tentatively explored at Newlands and Crestwood together and underpinned them with external research. Collaborations were initiated with the Martin Centre at Cambridge University and the Science and Engineering Research Council (SERC) to study the collection, storage and diffusion of solar energy in buildings. The SERC-funded project was applied at an unbuilt project for Locksheath Junior School and later at **Netley Infant School**.

The public environment could also be enriched with art and Stansfield Smith encouraged artists' commissions and residencies at schools. The Arts Council's 'artists in schools' initiative would often pay for the residency, whilst the school contributed to the cost of the materials. Biennial sculpture exhibitions held at the Winchester Great Hall provided a source of contacts.[91] Rachel Fenner, working with the schoolchildren of **Fort Hill Secondary School**, produced *the Watchers*, a series of wooden totem poles inspired by the Iron Age hill fort from which the school takes its name.[92] The seven classrooms at **Woodlea Primary School** each incorporate encaustic tiles designed by several artists. Another Hants tenet was the integration of school buildings with their sites and wider landscapes (pages 90-91).

At Hampshire as elsewhere, much reorganisation and refurbishment of the existing building stock was necessary. Stansfield Smith was an advocate of estate management though 'creative demolition', and at Bridgemary Community School in Gosport reordered a campus of two secondary school, retaining only two-thirds of the existing buildings and knitting them together with brick garden walls and covered ways. In dealing with its existing building stock, Hants architects Michael Morris, John Reynolds and Tim Dyer discovered a rich building tradition. Many nineteenth-century village and board schools were restored or extended sympathetically.[93] At the Victorian St Mary Bourne, Crondall, Cheriton and Fairfield Primary Schools, post-war accretions were removed and mezzanine floors inserted. Bold extensions were provided at the 1875 Wellow Primary School near Romsey and Petersfield County Infant School, the latter of 1984-87 to the designs of Plincke Leaman and Browning.

Gazetteer

[Note: The design team for most Hampshire schools included both architects and technicians The gazetteer accordingly uses the formula 'job architect with *technician']*

Primary Schools

¶ **Otterbourne Church of England Primary School**, Main Road, Otterbourne, Winchester. Hampshire County Council Architect's Department (job architect Jeff Brown), built 1962-63.

Hampshire's first SCOLA building, and one of the earliest in England, coming soon after a mock-up erected outside the offices of Shropshire County Council in mid-1962.[94] Three square classes, each with outside entrance and toilets, open onto a small shared area. The exterior is distinctive, with a black-painted fascia, white frames, wide timber rails, geometrical tiles and weatherboarding. The school was extended *c.*1975 and survives in this enlarged form.[95]

¶ **Newlands Primary School**, Dungells Lane, Yateley; Hampshire County Council Architect's Department (job architect Mervyn Perkins); designed 1978-79, built 1979-80.

Newlands was the first Hampshire school to exploit the potential of the large-volume interior to create spatial interest and natural ventilation. This single-form entry primary school for 280 pupils served new estates built in the relatively prosperous suburb of Yateley. Two low-pitched ranges, a teaching block and a shorter one for the hall, kitchen, music room and staff offices, are entered via a glazed 'conservatory'. Eight south-facing classrooms are combined with open shared areas for practical work and quiet spaces. The building makes connections with its small but wooded site: the brick paving and timber-boarded eaves soffit are brought inside, and the north and east exterior walls extend out to define hard landscaped areas. The exterior is calm and controlled with dark-stained, bolted king post trusses over white-painted brick planes.

The full-height interior is chunkily detailed with great care. The quarry-tiled floor, white-painted brick and laminated timber trusses recalls Peter Aldington's houses and a mutual love of vernacular buildings. The metal space frame roof of the conservatory, painted bright red, was made in the garage of Tony Pritchard, an industrial designer noted for his work with Norman Foster. Pipework and artificial lighting

Fig.4.150: The main entrance at Newlands. Photograph by James O. Davies – English Heritage; DP137492.

Fig.4.151: A classroom at Newlands Primary School. Photograph by James O. Davies – English Heritage; DP137477.

are carried by boarded overhead service ducts. These devices, inspired by Frank Lloyd Wright's Usonian houses, introduce an intimate scale and appear in many subsequent Hampshire designs, as did the 'in-and-out' classroom partition wall which incorporates storage niches.[96]

Newlands marked a step towards a Hampshire strategy for environmental control based on daylighting, natural ventilation and solar gain. Oversailing eaves, clerestory vents and opening apex windows bring natural light and ventilation into the centre of the plan, whilst limiting solar gain. Heavy concrete tiles, brick cavity walls and extensive use of quarry tiles inside increase the building's thermal capacity. The unheated and glazed 'conservatory' reduces heat loss from the main blocks during the winter. More importantly it served as an entrance hall, a place for adults to socialise and a 'safety valve' for the younger children, filled with planting, pond and—initially—'aviary birds'.[97] In the Newlands conservatory can be seen the germ of interest

Fig.4.152: The conservatory at Newlands. Photograph by James O. Davies – English Heritage; DP137474.

Figure 4.153: Rookwood Infant School. © Elain Harwood.

in glazed intermediate spaces, such as atriums and arcades, that form crucial elements of later Hampshire schemes.[98] The school won several awards.[99]

¶ **Rookwood Infant School**, Penshurst Way, Eastleigh; Hampshire County Council Architect's Department (job architect Neill Beasley with Jon Dale), built 1980-81.

Rookwood is a two-form entry primary school for 240 children amid-the sprawling housing of Boyatt Wood. Standing aloof from these surroundings, it is a hard, restless yet elegant building, and one of the first Hampshire forays into a geometrical formalism expressed in a high-tech, industrial idiom. Rookwood's plan is a right angled-triangle with stepped, south-facing classrooms along the hypotenuse, essentially tidying up David White's plan for **St Francis Special School**.[100] Alan Cooper's model for the school had a mirror along the central axis, emphasising the symmetry.[101] Clustered around the classrooms are enclosed bases for quiet study, with shared space beyond. The main entrance is awkwardly located in the sloping north-west elevation.[102]

The roof is articulated by repeated monopitches on a 5.4m module, forming a sawtooth roof mirrored about the centre line. Deep overhangs shelter small verandas outside each classroom and clerestorey glazing is built into the monopitches. A structural steel and laminated timber frame, painted bright green and with a boarded soffit, stands upon rendered insulating blockwork and storey-height softwood windows painted yellow. The original colour scheme, in

strong orange and green, does not survive. Like the unbuilt but influential project for Pennington Special School (page 277), Rookwood was conceived as a building within a walled garden in the manner of Sissinghurst Castle, although trees rather than walls enclosed the triangular playground.[103] It closed in 1997 after a rationalisation plan and its future remains uncertain.[104]

Figure 4.154: The hall at Rookwood. © Elain Harwood.

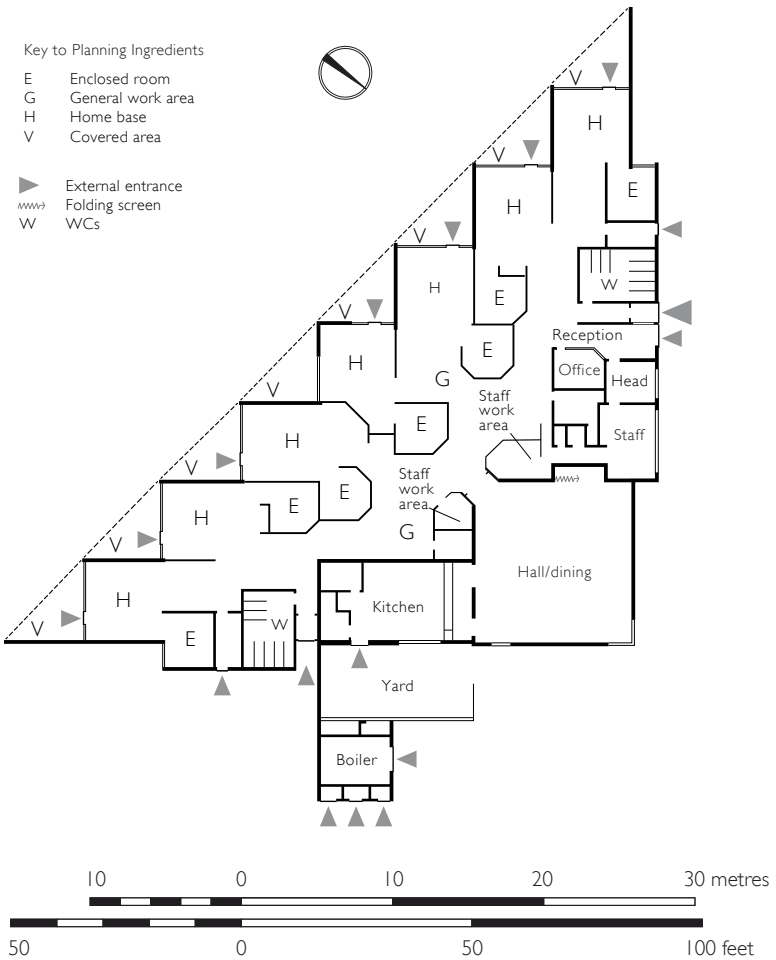

Figure 4.155: Rookwood Infant School, Eastleigh; Hampshire County Council Architect's Department, 1980-81.

¶ **Four Lanes Primary School** (now Four Lanes Community Junior School), off Hanmore Road, North Chineham, Basingstoke; Hampshire County Council Architect's Department (job architects Ian Templeton and Stephen Harte), designed 1980-81, built 1981-82. Later Infant and Nursery by Stephen Harte, c.1989.

The first deep plan open to a big roof, in contrast with **Fort Hill**. The roof, rising out of a mounded landscape and set against mature woodland, presents a dominant and distinctive image to the suburban estates beyond. The acknowledged precedent was Maguire and Murray's St Paul with St Luke Primary School in east London (page 198), but the Four Lanes roof surpasses the utilitarian aesthetic and evokes a medieval barn or circus marquee.[105] 'Its primitive decoration, including tile patterning, raised ridge board and carved finials', its architects wrote, 'is calculated to introduce an element of fairy tale, and should appeal to the imagination of a child, as well as being a source of visual excitement to the whole community'.[106] The glazed roof tiles were fired with the assistance of Southampton University.[107] Templeton and his wife had long collected decorated tiles and enjoyed their use in the Romanesque buildings of Burgundy.[108]

The main entrance is signalled by a gable and a projecting wall and from here one is led to the main reception with views into the hall. The break in roof pitch clearly articulates the layout: the imposing volume of the central hall surrounded by a more intimate, aisle-like perimeter of classrooms, administration and service rooms. Although the form of the building prohibits an extension, the versatility of the plan was demonstrated when pupil numbers increased to the extent that the headmistress turned the plan inside-out, using the central area for quiet working and the perimeter rooms for noisy and messy activities.[109] A top light over the exposed queen-post trusses brings natural light into the deep plan. The central shared area is decorated with an abstract mural by Terry Riggs which echoes the roofline.

¶ **Burnham Copse Infant School**, New Church Road, Tadley; Hampshire County Council Architect's Department (job architect Ian Templeton with Ian Lower); designed 1982-83, built 1983-85, demolished 2010.

Burnham Copse replaced a series of military huts that had been in service since 1956.[110] Many pupils were the children of defence workers at the former Atomic Weapons Research Establishment at Aldermaston. The layout of Templeton's earlier Four Lanes Primary School was refined into two centrally-planned groups, a decagonal teaching block and an octagonal hall, with a glazed entrance link (cv Newlands Primary School). Burnham Copse was the first centrally-planned school in Hampshire and influenced Stoke Park Infant School and Hatch Warren Junior School.[111]

The teaching block accommodated seven wedge-shaped classrooms with enclosed quiet bases on the outside. Two pairs of classrooms shared an inter-communicating door, and curtains instead

Figure 4.156: A 1987 photograph of Burnham Copse Infant School, Tadley; Hampshire County Council Architect's Department, 1983-85, demolished 2010. Institute of Education Archives: ABB/B/1/217/6.

Figure 4.157: Classroom at Burnham Copse Infant School. Institute of Education Archives: ABB/B/1/217/6.

of doors led to the central space and bays for coats and bags. The remaining segments were taken up with a porch and a covered play space intended for future conversion to classrooms. The central 'big top' was conceived as a teaching space capable of subdivision with furniture. The hall had exposed timber trusses spanning to an octagonal collar, the whole structure stained bright red. This allowed a continuous ring of top lights, with vents at the apex drawing air through the building. Services were carried around the perimeter in timber-clad ducts at intermediate level, as at Newlands.

The sweeping, multi-pitch conical roofs were conceived as festive incidents in an undistinguished suburb. Richard Weston suggested that 'Henry Morris would have loved them, for here indeed is a building fit to stand "side by side with the parish church" as a symbolic centre for the community it serves'.[112] The variety of nicknames coined by pupils, local residents and others— tipi, circus tent, roundhouse, oast house, chapter house, 'magic roundabout'—suggested that the architects achieved their aim of providing an evocative and place-making form.[113] The steep upper pitch of the roofs were decorated in layers of slate, glass and clay tiles, the latter painted and fired by the children.[114] The teaching block was surmounted by a patent-glazed lantern and globe finial, and the tiles of the hall roof were arranged in a herringbone pattern, as at Four Lanes.

Equal care was taken with the landscaping, although elements such as hard-landscaped play areas outside each classroom were cut when the budget overran. Instead excavated earth was arranged into landscaped mounds, sloping up to the perimeter of the blocks and along the south-east boundary to reduce noise from a planned road beyond. Planting to the west of the site enclosed a 'wild area'. In September 2008 the infants moved into the neighbouring Burnham Copse Junior School as a result of falling rolls. The vacant building was vandalised and eventually demolished in August 2010.

¶ **Elson Infant School**, Elson Lane, Gosport; Hampshire County Council Architect's Department (job architect Nev Churcher with Alex Upton), designed 1983, built 1984-85.

This replacement for a series of 1940s HORSA huts provides another formal variation on Jock Killick's educational brief.[115] A crescent of south-facing classrooms peels off from an orthogonal block. Here, a walled courtyard separates the administrative suite from the servery and music room (prompting Stansfield Smith to protest 'you can't have a courtyard in a linear building').[116] The resulting plan is a fusion of the triangular plan of St Francis Special School and Rookwood Infant School with the curved linear street of Crestwood Secondary School and Bosmere Middle School.

Between the classrooms and the rest of the school is a flat-roofed street with a formal entrance at the west and children's entrance at the east. Bays were provided between pairs of enclosed quiet bases. The entrances to the courtyard, music room and hall allow visitors and teachers coming from the reception area or staffroom to keep an eye on things. The street narrows from east to west as pupils peel off into their classrooms after break. As at Newlands Primary School, there is some confusion with entrances: the playground entrance is located away from its 'natural' position adjoining the classroom terrace.[117] The structure is a hybrid of insulated cavity construction for the quiet 'pods' and exterior classroom walls, and an exposed laminated timber frame.

The classroom party walls extended out to define a series of terraces, reached by sliding 'patio doors' and sheltered by a row of trees on the same alignment.[118] Churcher was intent on 'greening' the barren site, but was forced

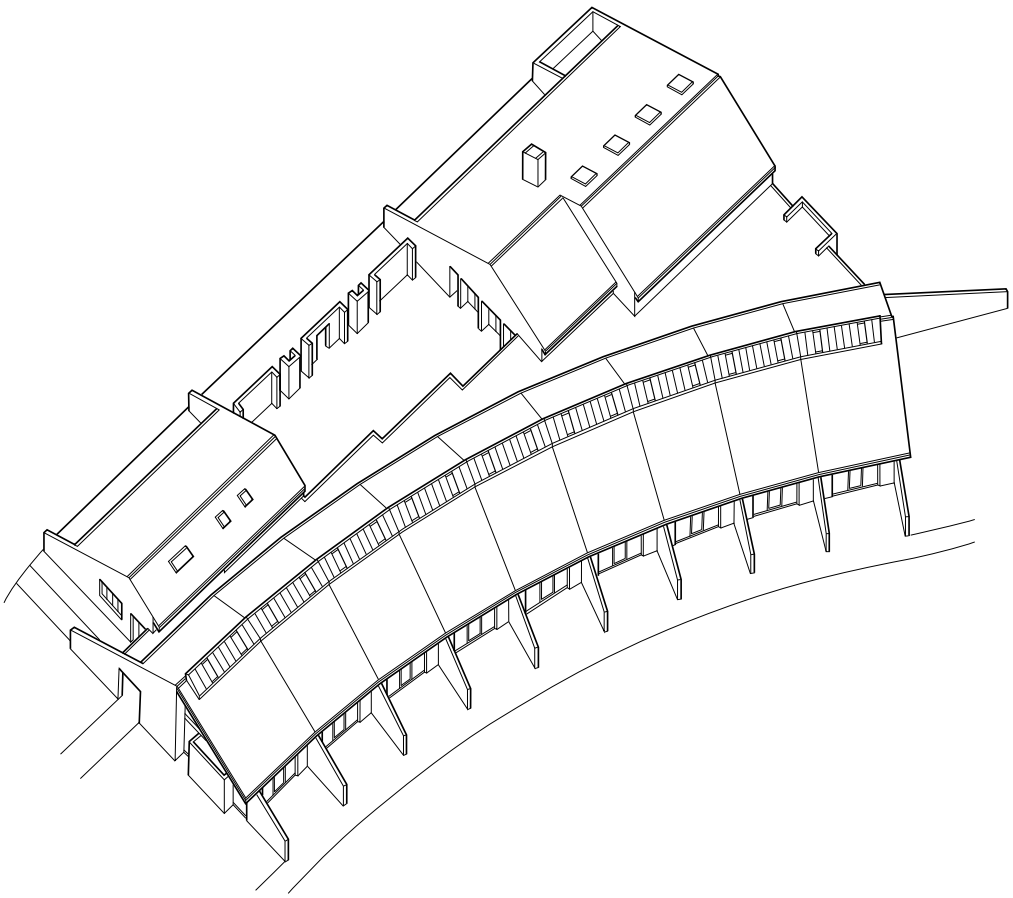

Figure 4.158: Axonometric drawing of Elson Infant School.

to think laterally when, by the end of the job, only a tiny fraction of the budget remained for landscaping. The road, parking and playground from the old school were all retained, the savings used to purchase 150 trees which were planted around the curved approach road and a play area. A heap of soil excavated from the foundations was banked around the edge of the site. David White and Tina Bird designed a neighbouring Junior School, completed in 1987.

¶ **Netley Abbey Infant School**, Westwood Road, Netley Abbey, Southampton; Hampshire County Council Architect's Department (job architect Dennis Goodwin), designed 1982-83, built 1983-84.

Shortly after Dennis Goodwin joined Hampshire in 1979, he volunteered to work with Derek Poole on developing low-energy design (page 85). Poole brought in Dean Hawkes and Nick Baker from the Martin Centre at the University of Cambridge, who had developed an environmental modelling system and a generic cross section. Funding from the Science and Engineering Research Council (SERC) allowed the team of designers and consultants to work together on Netley. The school offered a suitable site for passive solar design and an enthusiastic head teacher.[119]

The team set themselves two goals at Netley: to make maximum use of daylighting, ventilation and solar gains, whilst allowing the occupants to modify ventilation and heating. Like St. George's County Secondary School in Wallasey (grade II), passive solar energy supplements a central heating system. The plan resembles **Newlands Primary School** but rotated through 180°: a row of northwest-facing classrooms, behind which is a semi-open assortment of shared and quiet space and a south-east facing corridor. The hall, kitchen, staff rooms and library form a somewhat unresolved group around a central atrium, and further classrooms project to the south east to define garden courts. The long elevations present a restless series of classroom gables rising from low eaves. The side walls, by

contrast, present large stretches of blind walling to the play area.

The fully-glazed corridor, termed 'conservatory' by the architects, is the engine for the heating and ventilation of the building. During the winter warm air from the conservatory is drawn into the classrooms across air handling units situated in an upper level service gallery. In summertime, hot air is expelled from the classrooms into a ridge ventilator though stack effect ventilation, drawing cooler air into the classrooms from louvres in the north wall. Solar blinds can be drawn across the conservatory and temperature and ventilation controls in each classroom allows teachers to mix preheated fresh air and recirculated air. Despite teething troubles with the pumps and boilers in the first heating season, an independent monitoring study found that the school performed as intended, resulting in a marked reduction in energy consumption.

Figure 4.159: Classroom pavilion at the Hurst School, Tadley; Aldington, Craig and Collinge, 1983-85. Photograph kindly supplied by Peter Aldington.

¶ Additions to the **Hurst School** (now Hurst Community College), Brimpton Rd, Baughurst, Tadley; Aldington, Craig and Collinge (job architect Peter Aldington), 1983-85.

A series of classroom pavilions, grouped to create a variety of enclosed spaces which knitted together a disparate assortment of existing buildings. Outside benches and tables were provided to give children spaces to congregate during breaks, and much play space was reclaimed by repositioning the car park a short distance away from the buildings. Aldington completed the landscaping with trees and generously-planted borders. Each pavilion was square in plan and flat-roofed with three brick walls and one patent-glazed end wall. These were linked with patent-glazed walkways; inside services were exposed and each classroom painted a different colour.

¶ **Hatch Warren Infant School**, Gershwin Road, Basingstoke; Hampshire County Council Architect's Department (job architect Stephen Harte), designed 1983, built 1984.

The sheltering barn form of Hatch Warren sits on an exposed hillside site in housing estate west of Basingstoke. The school is dug into the slope, and the deep plan is arranged around three tiers, with infants at an upper level, a central hall, music and resources area, and juniors on the southeast facing side. The upper level cantilevers over the hall to give the infants a viewing gallery. The tiers are separated by top-lit corridors with glazed screens in wall which are extended out into the landscape. The junior wing has since been extended to the south.

¶ **Fleet Infant School**, Velmead Road, Fleet; Michael Hopkins & Partners (job architects Michael Hopkins, Patty Hopkins and Shelia Thompson), designed 1984-85, built 1985-86.

The steel-framed, 'high tech' strain at Hampshire, implicit in **Frogmore Comprehensive School**, was developed in the mid-1980s at Fleet and the closely related **Queens Inclosure Middle School**. Fleet was a replacement for a Victorian Infant School amid-heathland and the coniferous Spring Woods not far from Farnborough Aerodrome. When he commissioned Hopkins in 1984, Stansfield Smith had in mind the masted membrane structures they had developed with

Figure 4.160: Fleet Infant School. The sail-like awning in Teflon-coated PVC is an allusion to Hopkins's initial proposal for a tent-like masted structure. Photograph by James O. Davies – English Heritage; DP137509.

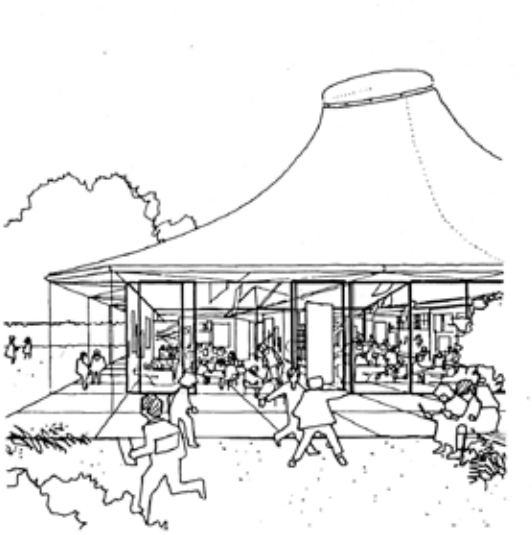

Figure 4.161: Hopkins's initial proposal for Fleet Infant School. © Hampshire County Council.

the engineers Büro Happold for an abortive project to enclose the town square in Basildon.[120] Hopkins developed a scheme in which a tent of Teflon-coated fabric roofs billowed out over a rectangular glazed envelope. Despite the support of Stansfield Smith, the scheme was opposed by education officers and rejected by the education committee.

A modified design substituted a low-pitched metal roof, whose continuous ridge glazing complemented the linear internal street already present in the first proposal. The pattern of shared corners and pods resembles **Newlands Primary School**, **Elson Infant School** and **Netley Abbey Infant School**. The nine classrooms are open to the street and separated with head-height partition walls. Beyond are rubber-floored practical areas with double doors that open onto a paved terrace. It appears that the initial scheme was rotated 90° and although this results in better classroom lighting, the location of the 'adult' entrance now seems arbitrary; it formerly led straight from the car park.

Fleet is a good example of the high-tech idiom developed by Hopkins, Richard Rogers, Norman Foster and Nick Grimshaw. Structure is clearly expressed inside and out, so that the classroom divisions coincide with the structural bays. Attenuated, hollow-section columns at 6m centres support cranked rafters and a roof of insulated metal decking, like that

Figure 4.162: A pair of home bases at Fleet Infant School. Photograph by James O. Davies – English Heritage; DP137503.

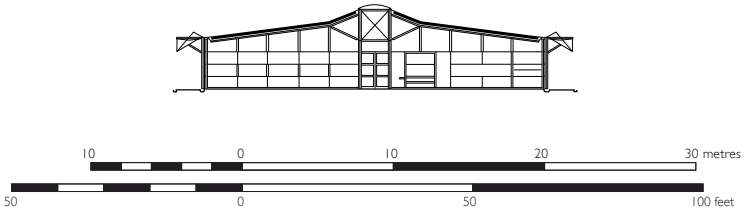

Figure 4.163: Cross-section, Fleet Infant School; Michael Hopkins & Partners, 1985-86.

of **Hulbert Middle School**. The frame was designed in collaboration with Ted Happold, who commented that 'in concept the structure has its origin in those large French electricity pylons that support their wires on outriggers'.[121] The 'dumb-bell' arrangement of paired inner and outer columns is a characteristic Hopkins refinement, with the inner column doubling as a rainwater downpipe and junction with the internal partitions. But the aesthetic brought practical drawbacks such as glare and summer overheating from the glass walls; high energy bills and condensation problems from the lightweight, single-skin roof.

The interior is lofty, light and more open than the in-house designs at Hampshire. The 3.2m eaves height was determined by the perimeter location of the sports hall. The darker, enclosed pods with their porthole windows provide contrast. There are perhaps too many hard surfaces for comfortable acoustics, although the floor is largely carpeted. High-level louvres encourage cross ventilation and vents are incorporated in the central ridge to generate a stack effect. To the south of the school is a boggy heath land, which the teachers and architect jointly insisted be retained as an educational resource rather than drained for playing fields.[122] In 1998, Hopkins designed a music pod to adjoin the north side of the school.[123]

¶ **Stoke Park Infant School**, Abbotsbury Road, Bishopstoke; Hampshire County Council Architect's Department (job architects David White, Tina Bird, Stephen Harte with John Laye and Alec Upton); designed 1985-87, built 1988-89.

The design of this school for 315 infants was started by David White and Tina Bird as an organic form, half buried within a south-facing grassy slope between Forestry Commission woodland and a post-war estate. After White's death in December 1985 the scheme was developed by Stephen Harte, who drew on the centrally-planned **Burnham Copse Infant School** to create a focal point for the community. The difference is that here the entire school is contained under a single, massive conical roof: as Richard Weston put it, 'the big roof to end all big roofs'.[124]

Like Burnham, the school has a central hall at its heart. But the geometry is considerably more intricate: the centre of the hall is displaced from the apex of the roof, and the swirling plan is generated centrifugally from these twin points of origin. The hall is a top-lit drum 15m in diameter with its helix-like roof rising to a lantern at the apex. The roof, designed with Michael Dickson of structural engineers Büro Happold, is a

Figure 4.164: Stoke Park School. © Hampshire County Council.

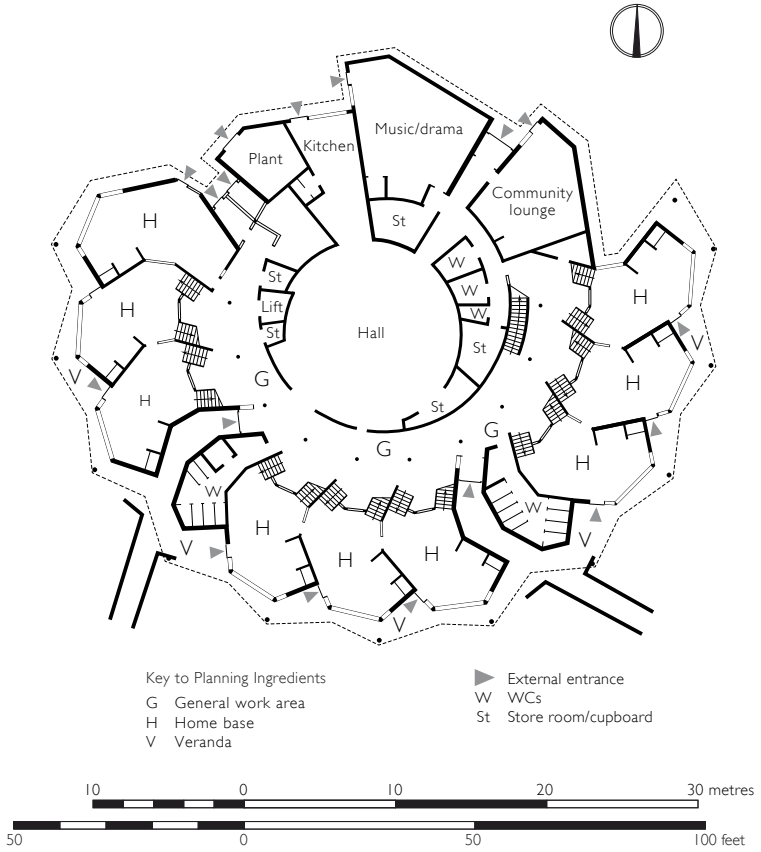

Figure 4.165: Stoke Park Infant School.

Figure 4.166: Stoke Park Infant School. Institute of Education Archives: ABB/B/1/220/1.

composite structure which combines exposed laminated rafters and purlins with slender steel ties meeting at a central ring. A split-level section, reacting to the sloped site, contributes another layer of complexity. The hall and the adjoining, curved street are dug into the slope, half a flight lower than the nine, south-facing classrooms beyond. These spiral out clockwise from the centre, twisting into a cranked form which is further complicated by the low, curving roof. Each classroom opens out onto a hardstanding play area. From the classrooms stairs and ramps ascend to an intermediate level of quiet bases, positioned over the shared area and overlooking the hall. To the north, the offices and staff rooms are reached via an open gallery within the hall. Also at this upper level is the visitors' entrance, accessed via a footbridge over a grassed moat.

The exterior is dominated by the gently concave 'tipi' roof, with layers of zinc and cedar shingle cladding crowned by a glazed lantern and sculptural finial. Concentric glazing strips light the classroom and quiet bases. A zinc canopy overshoots the exterior walls and from underneath emerges the classrooms, which alternate white blockwork walls and full-height glazing. To the north, a break in the lower skirt of the roof exposes the jagged, white-walled forms of the kitchen, music and drama studio and community rooms. The buildings apparent mass is further reduced by its landscaping of curved earth bunds which reuse soil excavated for the foundations.[125] Stoke Park represents the culmination of the centrally-planned Hampshire schools. Its elaborate plan was conceived to respond to the need of a young child for personal territory and its strong urge to form part of a community. In 1992, a two-class extension with a green roof was bedded into the banking behind the school.

¶ **Farnborough Grange Junior School**, Wren Way, Farnborough; Edward Cullinan Architects (job architects Edward Cullinan, Sasha Bhavan, John Romer, Seán Harrington, Matthew Letts),1987-90.

Stansfield Smith first invited Edward Cullinan's practice to recondition some of the first generation of SCOLA schools, by now showing their age. The common way to repair SCOLA schools was then to strip them down to the frame and install new fibreglass cladding and flat roofs. At Calthorpe Park Secondary School (1981-83) and Crookham Junior School (1984-87), Cullinan contrived decorated permanent scaffolding, incorporating a metal roof and brise soleils. Farnborough Grange was the third SCOLA reconditioning project, but the condition of the 1963 building was found to be beyond repair and Cullinan asked to design its replacement: 'after all the previous refurbishments and insertions', he said, 'it was lovely to design a whole new school'.[126]

The unusual Y plan is angled so that two classroom wings catch the sun. Most of the school is of flat-roofed brick which contrasts with the attenuated, white-painted steel and wavy roofs of the classrooms and hall. The double curve of the corrugated aluminium roof sweeps up to a clerestorey on the opposite side; below is the lower roof of the practical area, which opens onto an outdoor terrace.[127] The classroom wings terminate with semicircular tutorial rooms. A fatter 'stem' to the north contains the hall, kitchen, changing rooms offices and service rooms. A lighthouse-like drum rises over the central resources area and from where the teachers can 'retreat from the hurly burly of schooling.'[128] This feature recurred at Cullinan's Greenwich Millennium School and Health Centre of 2000.

¶ **Hatch Warren Junior School**, Gershwin Road, Basingstoke; Hampshire County Council Architect's Department (job architect Joe Collins),1988-91.

A recapitulation of two Hampshire themes. A roundhouse hall and kitchen (based on Burham Copse and Stoke Park Infant Schools), unfurls from a curved terrace of classrooms, as at Crestwood Secondary School, Bosmere Middle School and Elson Infant School, but claiming inspiration from Hampshire landforms and tumuli.[129] The linear form was partly chosen to enable future extension. The classrooms curve around an avenue of trees and a circular playground (an intended 'spiral land form' was not built). Materials include brick and timber cladding with tile and metal sheet pitched roofs.[130]

¶ **Woodlea Primary School**, Atholl Road, Whitehill, Bordon; Hampshire County Council Architect's Department (job architects Nev Churcher and Sally Daniels), designed 1989, built 1990-91.

Woodlea school enjoys the spectacular setting of a wooded hill, with an Iron-age hill fort at the summit and ancient woodland below the site. The brief was for separate infant and junior schools but after visiting the site, Churcher persuaded his client to opt for a single primary school. Woodlea was conceived as a 'cluster of houses around a town hall'.[131] The crescent-shaped building is worked around the contours of a grassy bowl; Churcher had originally envisaged curving walls. Like many of Churcher's buildings, it is a composite structure, with a outer 'crust' of brick walls cut into the hillside, sheltering a 'soft' timber-framed core. The building steps across its sloping site with three changes in level totalling a metre. The main entrance, staff rooms and library are on the central level, with lower teaching wings and the hall and music room crowning the composition.

Figure 4.167: One of many coloured plans of Woodlea produced by the architects. Drawing kindly supplied by Nev Churcher.

Three staggered infant classrooms have integral practical areas with sinks and decorated encaustic floor tiles. Brick-built pods are provided for quiet work. To the south is a cranked wing with four junior classrooms and a tutorial room for reading groups. The teaching spaces have picture windows with low sills, top-hung clerestorey windows and skylights. Each classroom opens onto a shared area, and from there can be reached timber decks with chunky hardwood handrails. Natural finishes of timber and aluminium were chosen to show the children what their school was made of. The hall has a portal frame of laminated timber which rises cruck-like from the ground. Its asymmetric curves recall Aalto's church in Riola, Italy of 1975-78. The adjoining music room is irregular on plan for reasons of acoustics, and has an assortment of windows of various shapes set into its brick walls. These elements were a challenge to build and the contractor admitted that 'the men were frightened of it at first, it was so different from anything they'd done before, but then they got into it'.[132]

The relaxed, organic plan is disciplined by the application a 1.2m module. Daniels, a year-out student, set out all walls, partitions and services onto four angled planning grids which change direction at 'node points' where different grid alignments met.[133] The plan, with its staggered and non-orthogonal geometry, has some affinity with the schools designed by Hans Scharoun and Devaris and Manteuffel's Michael Hall Steiner School, Sussex of *c*.1980.[134] The cedar shingle roofs and generous eaves respond to the wooded site. The 'impure' combination of flat and monopitched roofs attracted some criticism within the Department, and a working model with adjustable roof pitches was used to finalise the form of the building.[135] Churcher's simple, robust detailing has proved durable and practical for cleaning and maintenance. The landscaping by Pirkko Higson and Stuart Pearson incorporates curved playgrounds, garden, ponds and the planting of 150 species of plants and trees, now approaching maturity. Lower down the slope a flat playing field was cut into the slope, out of sight from the school.

Figure 4.168: The hall at Woodlea School. Photograph by James O. Davies – English Heritage; DP137523.

Figure 4.169: Library at Woodlea School. Photograph by James O. Davies – English Heritage; DP137514.

Middle Schools

¶ **Hulbert Middle School** (now Hulbert Junior School). Springwood Avenue, Waterlooville; Hampshire County Council Architect's Department (job architects Mervyn Perkins and David White with John Godding), built 1981-82.

Hulbert is a further rationalisation of the Hampshire 'barn schools' **Fort Hill Secondary School** and **Four Lanes Primary School**. The former grounds of a large house provided a bosky, rolling site north of Portsmouth. The rural surroundings prompted the architects to look to agricultural buildings, the precedent being Maguire and Murray's St Paul with St Luke Primary School in east London (page 198), and they adapted an agricultural portal frame in collaboration with the Timber Research and Development Association (TRADA).[136] The deep plan and structure achieved savings which the architects spent on additional teaching areas, achieving 20% in excess of the DES minima.[137] The roof, termed 'floppy hat by White, had to achieve sufficient height to permit the building to step up a slope and to allow mezzanine levels to be slotted in.[138] Over the wide-span hardwood structure was draped a pitched roof clad in corrugated aluminium sheeting.[139] The profile is complex, with double-glazed strips separating changes of pitch; White repeated the idea at the John Darling Mall at Eastleigh.

The organising principle, established at **Four Lanes Primary School**, is of a perimeter of cellular classrooms around a central shared area, with service and administration facilities similarly grouped around the hall. Thanks to the stepped section, upper and lower schools are literally that. They are further delineated by retaining brick walls which extend outside the building as boundary walls. Carpets, timber boarding and low ceilings lend domesticity to the classrooms. They are generously lit by a combination of side lighting, a rooflight strip at the rear of the room and borrowed light from clerestorey glazed screens in the partitions. The architects struggled with the greater specialisation and practical emphasis of a middle school: the small craft, pottery and cooking rooms are too few, and poorly lit and positioned. Fewer quiet areas were provided than the contemporary **Bosmere Middle School**.

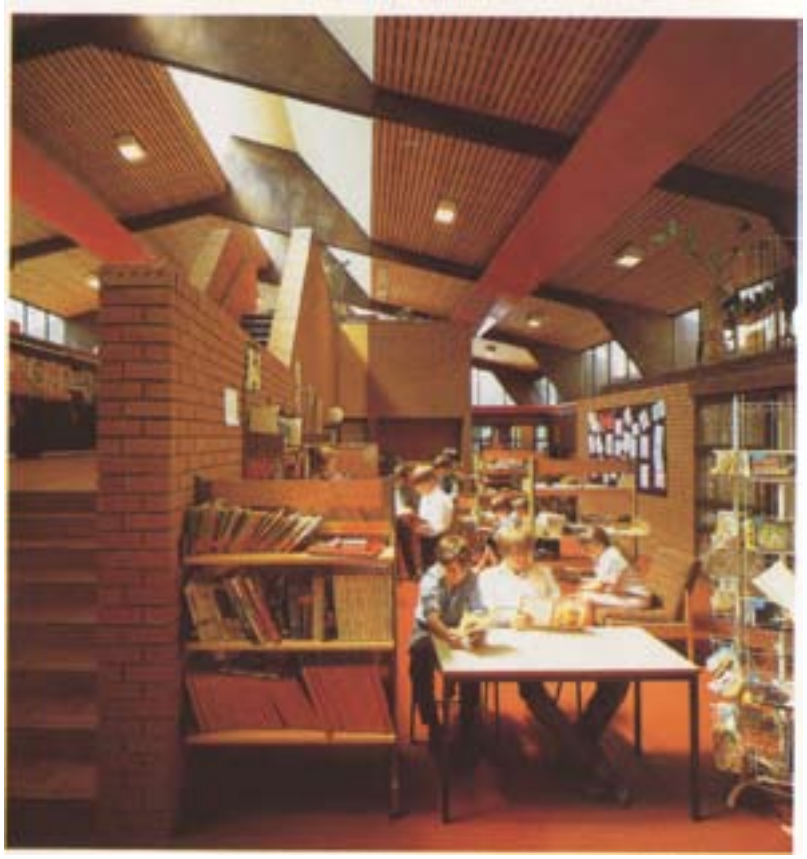

Figure 4.170: Hulbert Middle School. © Hampshire County Council.

At the heart of the school is a free-flowing sequence of communal spaces at the centre: shared areas, hall and music and drama room. The classrooms can be locked and the central area is generously served by adults' WCs and changing rooms and can be opened to community groups in the evening. These lofty spaces have a harder interior, defined by low brick walls, clay pavers and floodlit by sodium lamps, but softened by the sloping softwood ceiling. The central area has a higher thermal capacity than the perimeter and was intended by the energy-conscious Perkins to act as a heat sink for the building. The staffroom and library occupy a mezzanine level, set over the music and drama room. The long elevations are articulated by the cedar-boarded classroom stores which alternate with glazed walls. The end elevations are less tightly controlled, with brick volumes spilling out from under the aircraft-like profile of the aluminium roof and entrances picked out in a vivid yellow.

¶ **Bosmere Middle School** (now Bosmere Junior School), South Street, Havant; Hampshire County Council Architect's Department (job architects Nev Churcher, Peter Galloway and Mervyn Perkins), designed 1981-82, built 1982-83.

Like many replacement schools, Bosmere had to fit into a small site amongst a scatter of HORSA and terrapin huts until completion to avoid 'decanting' children to another site during construction. This, together with a desire to retain mature trees, explains the double curve of its tadpole-like plan, which is formed of

Figure 4.171: Bosmere Middle School, Havant. 1:1,250 scale site plan.

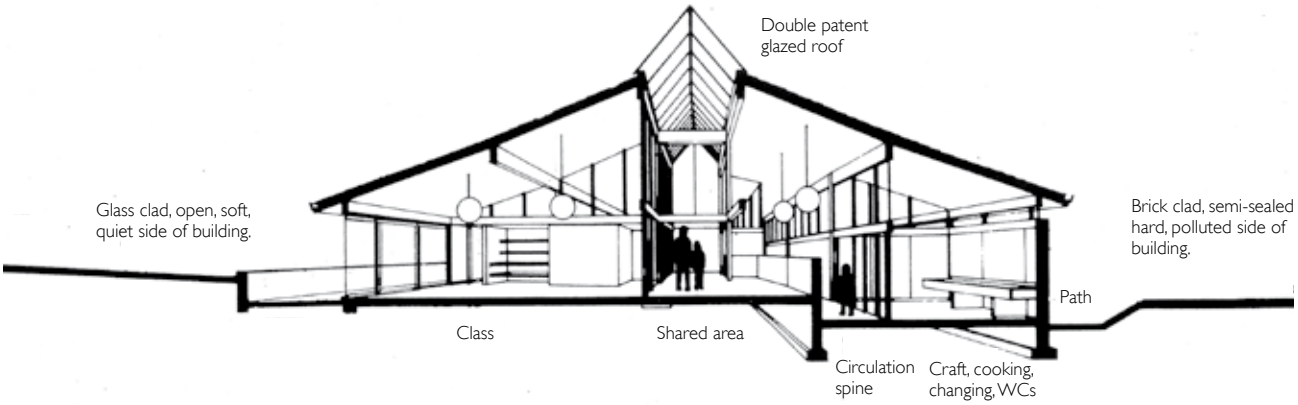

Figure 4.172: Sectional perspective of Bosmere Middle School, Havant; Hampshire County Council Architect's Department, 1982-83. Based on presentation drawing kindly supplied by Nev Churcher.

a 'head' of hall, kitchen and administration separated from its teaching 'tail' by a glazed conservatory-cum-entrance, as at **Newlands Primary School**. The curve (in fact, a series of facets) hugs the contours of a gently sloping site, allowing a stepped section. The wide corridor which runs the length of the school is animated by changes in level and a gentle curve which shortens the sightline and tones down the acoustics. Along one side, the activities of a range of craft and domestic science workshops can be glimpsed through internal windows. These noisy and wet activities are contained in a brick-built and artificially-ventilated space which form an acoustic buffer to the noisy road junction beyond. From the quieter side of the street is accessed a longer row of classrooms and intervening quiet and practical rooms. Each classroom has large sliding doors opening onto the copse. The upper and lower schools are separated by a library, which adds 'incident' to the circulation spine.

Figure 4.173: Bosmere Middle School, Havant; Hampshire County Council Architect's Department, 1982-83. Institute of Education Archives: ABB/B/1/223/1

The section takes the form of a double pitch, split at the apex by a continuous double-glazed rooflight. It is manipulated along the school's length to accommodate a variety of floor levels and room depths. Construction is a mixture of brick cavity wall (for the street and workshops) and laminated timber columns and beams framed at 6m centres, each incorporating a 3° change in angle (increasing to 15° towards the head). The interior is well detailed and full of architectural incident. Churcher's formative architectural experience was building his own house, from which certain details are derived such as the soffit boarding which extends to the eaves. The formal entrance, a space often neglected in post-war schools, is an elegant set piece combining paviours, low brick walls, a glazed roof, planting and bright red doors with circular panes. Attention was also paid to the landscaping, with earth banks planted with trees acting as a buffer at the noisy western boundary of the site. The school has since been extended to the north by Mervyn Perkins.[140]

¶ **Queens Inclosure Middle School** (now Queens Inclosure Primary School), Cornelius Drive, Cowplain, Waterlooville; Hampshire County Council Architect's Department (job architect Dave Morriss with Alec Upton), designed 1987-88, built 1988-90.

When the design originally prepared by Dave Morriss for a timber-framed school was found to be prohibitively expensive, he was faced with a complete redesign a few days before the scheme went before the education committee. Instead, he decided to rework Michael Hopkins & Partners's design for **Fleet Infant School**, itself a rethink. Morriss implemented a number of changes. Influenced by the houses of Glenn Murcutt, Morriss replaced the double pitched roof with a pair of parallel segmental vaults, defining served and servant zones, with an intervening glazed barrel vault over the internal street. He turned the building through 180° so that the class bases face north with woodland views. The orientation of the pods was reversed so that they are entered from the street rather than the classroom, allowing them to be used by older children for craft and cookery. But the pods and staff offices were still treated as freestanding objects within a large perimeter. Glazed screens run up to the roof from the classroom partitions; at Fleet the equivalent space was open. Aluminium louvres with adjustable blades replace Hopkins's fabric awnings. But there are otherwise few differences with the Hopkins scheme.

The silvery steel and aluminium shed of Queens Inclosure sits over a grassed meadow (hence 'cow plain') at the boundary with mature woodland, a remnant of the ancient Forest of Bere (hence 'Queens Inclosure'). The visitors' entrance is approached head-on rather than oblique approach to Fleet. Landscape designer Trevor Goodenough banked pedestrian paths with Hidcote lavender and bands of rosemary planted around vehicular areas. Half of the site is kept and a meadow and an 'ecology paddock' occupies the north east corner.[141] The nine-class school was designed before the inception of the National Curriculum but its plan was sufficiently flexible to allow the headmaster John Clouting to reorganise the layout on the basis of subject areas rather than the year groups conceived by Morriss. Queens Inclosure was a runner up in the BBC Design Awards 1990 and national winner of the RIBA president's Building of the Year Award in 1991.[142]

Secondary Schools

¶ **John Hunt of Everest Comprehensive School**, Oxford Way, Basingstoke; Hampshire County Council Architect's Department (job architects David J. Morgan and D. Day), 1969-70, demolished *c.*2005.

John Hunt was initially designated as a 650-place bilateral school for the expanded town of Basingstoke. After it had been designed Hampshire adopted a comprehensive reorganisation plan in July 1970, and a second phase was added to double the initial intake. The original plan had separate blocks in a cross formation, linked by covered ways to a central, 'moated' administration block. Phase two simply filled out the corners, making a three-by-three grid. The school was intended as a showcase for the versatility of the SCOLA Mark IIa system, and included precast concrete panels with exposed white flint aggregate, GRP cladding panels and modular Forticrete blocks, all developed in Hampshire.[143] The three- and four-storey teaching blocks included house rooms equipped with a servery and lifts to enable them to be used for dining. The school was demolished *c.*2005 as part of a 'land swap' arrangement.[144]

¶ **Frogmore Comprehensive School**, Cobbetts Lane, Yateley, Hampshire; Hampshire County Council Architect's Department. Phase I: job architect Graham Dugan, completed 1974. Phase II extensions: job architects Peter Galloway and Mervyn Perkins, built 1978-79.

Like **John Hunt**, Frogmore was planned as a four-form entry school with an extension to double the roll. The plan was based on Brighton Hill School (page 274) with single-storey teaching blocks grouped around a central, two-storey library to create enclosed and landscaped courts. The initial phase, in SCOLA Mark III, was clad in grey brick and glazed panels. It was the last large-scale use of SCOLA in Hampshire.[145]

Phase II comprised two further teaching blocks for a total of 300 pupils to which, at a late stage, was added a sixth form centre and community facilities. The architectural challenge was how to break with the now-discredited SCOLA system whilst maintaining a sense of cohesion in the completed school as a whole. They chose to take up light and dry construction on their own

terms, bringing in Anthony Hunt & Associates, a structural engineering firm best known for its work with Foster Associates, to devise a one-off steel-framed building with enhanced environmental control, energy conservation and aesthetics.[146] The sleek, minimal boxes of phase II invite comparison with Hunt's earlier collaborations, such as the IBM Pilot Head Office, Cosham of 1970-1971 by Foster Associates and Michael Hopkins's house at Hampstead of 1975-76. A frame of square-section stanchions at 7.2m centres accommodates full-height aluminium frames with gable walls of grey brick. At the corner the frame is exposed in the Miesian tradition, and a flash gap raises the structure from its gravel perimeter. The wCs are housed in semi-circular brick pods projecting from the blocks. The large amount of glazing is mitigated by aluminium *brise soleil* and perimeter heating and sliding insulating panels for winter use. If the exterior is refined, the interiors are hard and noisy, with blockwork partitions and an exposed perforated steel deck in place of ceiling tiles. Perimeter heating allowed a suspended ceiling to be omitted thus achieving a 600mm reduction in overall height. The frame and fittings of the two blocks are colour coded green and red in the high tech manner.[147]

¶ **Fort Hill Secondary School**, Winklebury, Basingstoke; Hampshire County Council Architect's Department (job architects Trevor Harris with John Laye), designed 1975-76, built 1976-78.

Fort Hill, an eight-form entry secondary school for 1,200 pupils, presents an alternative image to the flat-roofed post-war secondary school. Its 'big roof', the first of many in Hampshire, dominates an exposed site on Winklebury Hill, yet conceals a conventionally ceiled and artificially-lit deep plan. The interior was, as Richard Weston put it, 'devoid of that sense of place promised from outside'.[148] In this respect Fort Hill is comparable with the neo-vernacular Hillingdon Civic Centre of 1973-78 by Robert Matthew, Johnson Marshall and Partners. The interior is more enclosed than the contemporary **Frogmore** Phase II.[149] The school lies within the ramparts of an Iron Age fort and is bedded into the ground behind earth mounds. The plan is conventional, with teaching blocks pinwheeling about a central courtyard. Fort Hill is largely of load-bearing construction, clad with fairfaced brick outside and blockwork inside, but it is the roof which catches the eye with its concrete pantiles and clay ridge tiles and finials.

Figure 4.174: Fort Hill Secondary School from the air. Photograph kindly supplied by Nev Churcher.

¶ **Crestwood Secondary School**, Shakespeare Road, Boyatt Wood, Eastleigh; Hampshire County Council Architect's Department (job architects Huw Thomas and David White with Alastair MacDonald), designed 1978, built 1981-82.

At Crestwood, a conscious reaction against dispersed planning took the novel form of an 'arcade school', a full-height internal street sandwiched by two-storey teaching blocks, the whole facetted into a crescent. The street is top lit from a fully glazed roof on lightweight metal trusses and provides a covered, unheated and landscaped space for circulation, socialising and informal teaching. The form recalls the commercial architecture of the nineteenth-century shopping arcade.[150]

The 600-place school was originally intended to be steel-framed, but was eventually built in a hard, unsentimental idiom of blind facets of red brick, lightweight steel latticework painted red, and corrugated plastic roofing sheets, faintly recalling James Stirling's Cambridge History Faculty. The inner crescent peels off to the east, creating a funnel-like entrance. The facilities available for community use such as the hall are located here, as close as possible to a local shopping parade. Three sets of stairs are accommodated in the wedges of space between rectangular classrooms. The north-facing outer arc has pairs of ground floor classrooms and

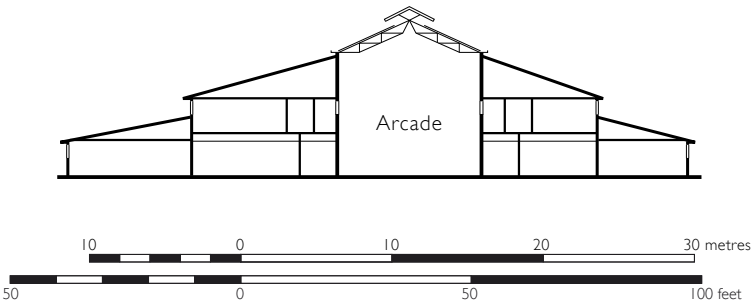

Figure 4.176: Cross-section through Crestwood Secondary School.

laboratories with further classrooms fanning out from between them. The street abruptly ends in a sheer wall of glazing with the blind volumes of the drama studio and gym beyond. Six sets of stairs lead to first-floor common rooms, library, staff room and administration suite.

But functional difficulties resulted from shoehorning the complex planning requirements of a secondary school into a predetermined form. Most of the accommodation is double banked and therefore single aspect; the inner classrooms borrow daylight from the street through small windows and the art rooms are dependant on artificial light. The pitches to the teaching blocks are ceiled 'hats' without toplighting. First-floor corridors and multiple stairs were chosen over galleries and bridges over the street. Service rooms present blind, buttressed walls to the prominent outer sweep of the street. Crestwood represents the introduction of a fruitful concept—the glazed, full-height internal street—but one only convincingly developed by later educational buildings in Hampshire, such as **Bosmere Middle School**, the John Darling Mall of 1985 and the Farnborough College of Technology of 1986. In this respect it is to the linear plan what **Fort Hill Secondary School** is to the 'barn school'.[151]

Figure 4.175: The 'street' at Crestwood Secondary School, Boyatt Wood, Eastleigh; Hampshire County Council Architect's Department, 1981-82. Institute of Education Archives: ABB/B/1/220/3

Special School

¶ **St Francis Special School**, Patchway Drive, Oldbury Way, Fareham; Hampshire County Council Architect's Department (job architect David White with Alastair MacDonald, Richard Pert, Alec Upton and John Godding), designed 1975-76, built 1976-78.

St Francis was built for 80 severely mentally-handicapped children aged 3-16. When the school was designed it was Hampshire's policy to concentrate special school provision into a few educational campuses, this one containing special schools for juniors, infants and physically disabled children. Shortly after the building was completed came the Warnock Report, which advocated greater integration into mainstream

education (page 58). Fareham was the first major Hampshire project to forego SCOLA, and the intricacy of the design seems to revel in a new-found freedom.

The complex, stepping plan is influenced by Aldo van Eyck's orphanage of 1955-60 in Amsterdam. Seven identical bases, each for ten children, are staggered along the south flank of the building for greater informality and enclosure. Their monopitch roofs allow clerestorey lighting from the north east. At 35m² the bases are small enough to encourage smaller groups to venture out to other parts of the school. Each has access to its own south-facing terrace and a corner bay window with inbuilt seats encourages the enjoyment of the mature woodland. The bases are contrasted with a expansive sequence of communal spaces: the hall, a dining area, three shared areas and a long, low-walled ramp leading from the main entrance, the whole intended as a stimulating *promenade architecturale*.[152] The entrance ramp negotiates the sloping site whilst providing a noise buffer between the seniors and the younger children. The hall, kitchen, services and administrative suite act as a protective buffer to a noisy road to the north of the site. A few more enclosed rooms were provided: a unit for severally disabled children, a housecraft room and workshop for the seniors, a library for quiet work and a top-lit 'splash room' for hydrotherapy. Shared practical areas are provided for the nursery and infant, middle and senior bases, as recommended by the DES.[153]

The exterior is a series of spare forms in yellow stock brick amid-trees. Large expanses of blind stretcher bond and brown concrete tile are relieved by the black, boxed-out bay windows and serrated roofscape. Inside, white-painted fairfaced blocks dominate, although the end walls of each base are painted with a strong colour and elsewhere there are decorative ceramic tiles and pin board. Dark stained softwood windows complete a Scandinavian-tinged interior. St Francis was the first Hampshire scheme to be entered into the Royal Academy's Summer Exhibition, in 1976.[154]

Figure 4.177: St Francis Special School, Fareham.

ENDNOTES

1. Hardcastle and Dunford 1974, 11. In 1986 Hampshire had a total of 870 schools, 100 of which were secondary; 17 colleges of further education; and one polytechnic which is now a university (Stansfield Smith 1994).
2. Hampshire Record Office: H/ED2/8, chapter 1, p. 7.
3. Alexander 2009, 77; Bullen *et al* 2010, 87; Hansard, House of Commons, written answers, 16 February 1973, vol.850, cc.445-6W.
4. In 1965 the MP for Basingstoke addressed the House of Commons: 'One cannot simply dump down a large number of people with inadequate facilities for social, cultural and recreational activities. A sports centre, a swimming pool and things of that sort are all an essential part of the overall picture of the town. There are churches, "pubs" and shops, and shopping facilities are urgently needed with the enormous increase in the population. A town must have a heart. […] I ask urgently that this aspect should not be forgotten. Hansard, House of Commons debates, 3 August 1965, vol.717, cc.1556-67.
5. *Architects' Journal*, vol.195, no.22, 3 June 1992, p.28.
6. Saint 1987, 135-38.
7. Hampshire Record Office: H/CL5/1f/26; Benson Ansell 1963.
8. Anthony Burrows pers.comm., 28 July 2011.
9. Benson Ansell 1963.
10. Benson Ansell 1963, 615.
11. Benson Ansell 1963, 615; Maclure 1984, 108-09.
12. Colin Stansfield Smith pers.comm., 8 July 2008.
13. *Architects' Journal*, vol.135, no.26, 27 June 1962, p. 1444. The *Architects' Journal* (vol.142, no.27, 7 July 1965, p.44) reported that 'by mid-1962 a prototype had been erected at the Salop County Council offices'.
14. Weston 1991, 9; Colin Stansfield Smith pers. comm., 8 July 2008.
15. Hampshire Record Office: H/ED2/8, chapter 9, p. 18-22.
16. Hardcastle and Dunford 1974, 20; Gerry Way pers.comm., 5 July 2011.
17. *Interbuild*, vol.11,no.1, January 1964, p.35.
18. Michael Morris, who worked with Method at Somerset and SCOLA at Hampshire, recalls that the latter lacked the carefully profiled timber sections of the former, which shed water more effectively (Michael Morris pers.comm., 1 September 2011).
19. Russell 1981, 490.
20. Benson Ansell 1963, 616.
21. Oscar Gammans, pers.comm., 2 September 2012.
22. Guy Hawkins pers.comm., 10 March 2011.
23. DES 1968b. A 4" module was recommended by The Ministry of Public Building and Works (MPBW 1963).
24. Oscar Gammans, pers.comm., 2 September 2011.
25. *Building*, vol.248, no.7390, 19 April 1985, pp.32-33.
26. The use of 'repeat plans' in Hampshire predated the arrival of Benson Ansell (Benson Ansell 1963, 612-13).
27. Page 1, *Serial Tendering*, report of 9 March 1965 by the County Architect for the Education Buildings Sub-Committee (Hampshire Record Office: H/CL5/1f/26).
28. Gerry Way pers.comm., 5 July 2011.
29. Mervyn Perkins pers.comm., 1 March 2011; Michael Morris, pers.comm., 1 September 2011.
30. Gerry Way pers.comm., 5 July 2011. Hampshire shared an IBM light pen computer with West Sussex and a QS computer with Cheshire. From 1967 Hampshire's Quantity Surveyor's Division ran bills of quantities on their own machine (Hardcastle and Dunford 1974, 4).
31. Hardcastle and Dunford 1974, 23.
32. Page 1, *Invitations to Tender for Building Works*, report of 1 May 1962 by the County Architect for the Education Buildings Sub-Committee (Hampshire Record Office: H/CL5/1f/26).
33. Memorandum of July 1969 by County Education Officer R.M. Marsh (Hampshire Record Office: 9M83/4/2).
34. They were three-storey blocks with deep plans reliant on air-conditioning and artificial lighting, and divided by adaptable partitions. *Architects' Journal* , vol. 159, no. 4, 23 January 1974, pp.153-55.
35. 'Summary for secondary reorganisation schemes April 1974 (Hampshire Record Office: 9M83/4/3).
36. Oscar Gammans pers.comm, 8 July 2011.
37. Michael Morris, pers.comm., 1 September 2011.
38. Oscar Gammans, pers.comm., 2 September 2011.
39. Gerry Way pers.comm., 5 July 2011.
40. Oscar Gammans, pers.comm., 2 September 2011.
41. Oscar Gammans, pers.comm., 2 September 2011; Contract dated 1972 (Hampshire Record Office:H/CL8/534)

42. Weston 1991, 9; Richard Clarke pers.comm., 11 July 2011; Oscar Gammans, pers.comm., 2 September 2011.
43. Michael Morris, pers.comm., 1 September 2011. The FORME range of school furniture was designed by David Medd and manufactured by Pel Ltd (Saint 1987, 193-94).
44. Richard Clarke pers.comm., 11 July 2011.
45. Michael Morris pers.comm., 8 July 2011; Oscar Gammans pers.comm, 8 July 2011; Richard Clarke pers.comm., 11 July 2011.
46. *Architects' Journal*, vol. 189, no. 12, 22 March 1989, p.58.
47. Mervyn Perkins, pers.comm., 1 March 2011. Architects' Journal, vol. 173, no. 25, 24 June 1981, pp. 1199-1214
48. In Hampshire, quiet areas were termed home bases. This terminology is not used here as the term 'home base' was generally used to denote the pastoral base of a class.
49. DES, *Standards for school premises regulations* (stat instrument 890), 1981 revision.
50. Weston 1991, 23.
51. Weston 1991, 24.
52. Weston 1991, 23. Medd wrote, 'the one common feature of the 4 primary schools we saw was standardised repetitive classroom in rows—each and every one the same. Effort no longer goes into the detailed educational thinking that can inspire design that helps children and teachers in their work.' (Institute of Education Archives: ME/V/1: letter of 6 July 1987 from David Medd to Andrew Saint). Elsewhere Medd listed the four educational buildings visited as Newlands Primary, Yateley; Cricklade Tertiary College, Andover; Alton Sixth Form College; and Frogmore Comprehensive School, Yateley (Institute of Education Archives:Me/T/7, David Medd's lecture notes for talk given at an Architects and Buildings Branch meeting on 13 May 1987, p.38).
53. The contract and plans for the first phase of Brighton Hill are dated 1974 (Hampshire Record Office: H/CL8/414).
54. Oscar Gammans pers.comm, 2 September 2011
55. Michael Morris pers.comm., 8 July 2011; Oscar Gammans pers.comm, 8 July 2011; Richard Clarke pers.comm., 11 July 2011.
56. Stansfield Smith was at the Cambridge School of Architecture 1953-8, LCC Schools Division 1958-60, Emberton Tardrew and Partners 1960-71, Deputy County Architect at Cheshire 1971-3, and Hampshire 1973-92. Colin Stansfield Smith pers. comm., 8 July 2008.
57. Burnaby 1985, 78.
58. Stansfield Smith 1984, 47.
59. Colin Stansfield Smith pers.comm., 8 July 2008.
60. Stansfield Smith 1994.
61. David White had worked in Coventry City Architect's Department under Arthur Ling. Stansfield Smith and Robinson had met in the LCC Architect's Department, where the latter had worked in Colin Lucas' group in Housing Division (Michael Morris, pers.comm., 1 September 2011).
62. The student sponsorship scheme whereby an architectural student's 'year out' was hosted with the prospect of employment on qualifying was introduced to Hampshire by Benson Ansell, who had perhaps been influenced by Frank Chippendale, Head of the Leeds School of Architecture, during his time at the West Riding (Michael Morris, pers. comm., 1 September 2011).
63. *Building* 19 April 1985, vol.248, no.7390, p.32-33.
64. Michael Morris, pers.comm., 8 July 2011.
65. *Architects' Journal*, vol.171,no.16, 16 April 1980, p.761-75 (p.764).
66. Colin Stansfield Smith pers.comm., 14 June 2011; Gerry Way pers.comm., 5 July 2011. Colin Stansfield Smith, John Robinson and David White entered the Northampton County Hall competition in 1973 (Michael Morris, pers.comm., 1 September 2011).
67. The following schools were exhibited under Stansfield Smith's tenure: St Francis Special School (1976; model and drawing), Pennington Special School (1977; model), Gosport Sixth Form College (1978; model and drawing), Agricultural Teaching Unit (1981, model), Bosmere Middle School (1982, model), Tadley Infant School (1983, model), Bishops Waltham Infant School (1985, model). Information from Royal Academy Library. An exhibition entitled 'Designs on the rates' was held in Winchester Great Hall in 1989 (Hampshire Record Office: HPUB/PBRSI/1/1/4).
68. Stephen Harte, pers.comm., 24 September 2011.
69. The practice of contracting out jobs to local architectural practices had existed under Benson Ansell (Gerry Way, pers.comm., 5 July 2011, Michael Morris, pers.comm., 1 September 2011).
70. White died in late 1985 (*Architects' Journal*, vol.183, no.5, 29 January 1986, pp.21-23).
71. Similar walls may been seen in Frank Lloyd Wright's prairie houses and Mies van der Rohe's 1923 project for a brick country house.
72. Colin Stansfield Smith pers.comm., 14 June 2011.
73. *Architectural Review*, vol. 163, no. 971, January 1978, p. 62.

74. Colin Stansfield Smith pers.comm., 14 June 2011.
75. Nev Churcher, pers.comm., 10 February 2011.
76. These projects can be compared to the central planned factory Michael Hopkins and Partners designed for David Mellor at Hathersage in the Peak District, reusing the foundations of a gas holder 26m in diameter. It was built *c*.1987-88 (*Architects' Journal*, vol. 187, no. 37, 14 September 1988, pp. 26-30).
77. Burnaby 1985, 73.
78. Stansfield Smith 1984, 40.
79. Weston 1991, 18.
80. Colin Stansfield Smith pers.comm., 14 June 2011; Van Eych 1962.
81. Weston 1991, 13.
82. Stansfield Smith 1984, 46.
83. Weston 1991, 27.
84. Colin Stansfield Smith pers.comm., 14 June 2011.
85. Stansfield Smith 1984, 39.
86. Stansfield Smith 1994.
87. In the large volume schools, stack-effect ventilation is triggered by the introduction of warm air around perimeter windows. This gathers under the apex of the central volume acting as an insulating heat blanket before cooling and returning.
88. *RIBA Journal*, vol. 88, no. 2, February 1981, pp.46-47.
89. Mervyn Perkins pers.comm., 1 March 2011.
90. Poole was the author of DES 1977 (Building Bulletin 55).
91. Colin Stansfield Smith pers.comm., 14 June 2011.
92. Fenner produced an earthwork and maze for St Denys School in Southampton.
93. Stansfield Smith 1984, 46; Michael Morris pers. comm., 8 July 2011; Weston 1991, 44-45.
94. *Architects' Journal*,vol.142,no.27, 7 July 1965, p.44. The tender date of the SCOLA Wrockwardine Wood Church of England Junior School, Shropshire was October 1962 (MoE 1964 (Building Bulletin 23), 82-85).
95. Hampshire Record Office: H/CL8/583: Signed contract and plans of 1975 for extensions to Otterbourne CE Primary School, Winchester. The school was published in *Interbuild*, vol.11, no.1, January 1964, pp.32-35; *Architect and Building News* vol.225/17, 22 April 1964 p.723 and *Builder*, vol.206,no.6304,13 March 1964, p.564.
96. Weston 1991, 21-22.
97. *RIBA Journal*, vol.90,no.8, August 1983, p.47. The school was also published in *Architects' Journal,* vol. 189, no. 12, 22 March 1989, pp. 51-63. *Architectural Review*, vol. 167, no. 995, January 1980, p. 10; *Architects' Journal*, vol. 173, no. 25, 24 June 1981, pp. 1199-1214; *AC*, vol. 28, no. 1 (107), April 1983 Apr, pp.69-71; *RIBA Journal*, vol. 90, no. 8, August 1983, p. 47 and *Building Services*, vol.6, no.12, December 1984, pp.34-38.
98. *Architects' Journal,* vol. 177, no. 19, 11 May 1983, pp. 67-70.
99. *Education* School Design award winner 1982; Civic trust award winner 1982; RIBA architecture award regional winner 1983.
100. The plan resembles the contemporary St John's Primary School in Clacton-on-sea, Essex. From the air, the school resembles a coeval piece of industrial design: the US stealth bomber.
101. Nev Churcher, pers.comm., 10 February 2011.
102. *Architectural Review*, vol. 172, no. 1025, July 1982, pp. 18, 21-27.
103. Colin Stansfield Smith pers.comm., 8 July 2008.
104. In June 2009 the Local Area Committee of Eastleigh Borough Council granted planning permission granted for demolition (source: http://www.eastleigh.gov.uk/meetings/mgConvert2PDF.aspx?ID=13737, accessed 15 August 2012)
105. Stansfield Smith 1984, 40.
106. *Architectural Review*, vol. 171, no. 1019, January 1982, p. 62. Four Lanes won a Civic Trust Award in 1984.
107. Stansfield Smith 1984, 43.
108. Weston 1991, 23.
109. *Architects' Journal*, vol. 180, no. 50, 12 December 1984, pp. 31-52.
110. Source:http://www.bcp.hants.sch.uk/page_viewer.asp?section=About+our+School&sid=11&page=School+History&pid=6, accessed 15 August 2012).
111. There is an unexpected precedent in the 1962 rotunda of the Winchester School of Art.
112. Weston 1991, 24.
113. Stansfield Smith referred to Burnham Copse as 'the oast house school' (pers.comm., 8 July 2008). The comparison to the eponymous popular children's TV series *the Magic Roundabout* was made by Patrick Hannay in the *Architects' Journal,* vol. 185, no. 22, 3 June 1987, pp.35-52. Burnham Copse was also published in *Deutsche Bauzeitung*, vol. 121, no. 10, October 1987, pp.63-65. The school won the 1986 School Design Award of the *Education* journal and was a regional winner of the RIBA architecture awards.
114. Colin Stansfield Smith pers.comm., 8 July 2008.
115. The Hutting Operation for the Raising of the School Age (HORSA) was an emergency initiative of the Attlee government.
116. Nev Churcher, pers.comm., 10 February 2011.

117. *Architectural Review*, vol. 177, no. 1058, April 1985, pp.36-44.
118. The walls separating the terraces have been removed by the school to prevent children climbing up to the roof (Nev Churcher, pers.comm., 10 February 2011).
119. Dennis Goodwin, pers.comm. 11 February 2011; *Architects' Journal*, vol. 187, no. 25, 22 June 1988, pp.31-49; *Building Services*, vol. 8, no. 4, April 1986., p. 19-22.
120. *Architects' Journal*, vol.177,no.22, 1 June 1983, p.42.
121. Addis and Walker 1997, 119.
122. *Architects' Journal*, vol. 186, no. 39, 30 September 1987, pp. 37-53.
123. Bullen et al 2010, 287.
124. Weston 1991, 24.
125. *Architectural Review*, vol. 183, no.1096, June 1988, pp.73-75; *Architectural Review*, vol. 188, no. 1125, November 1990, pp. 43-52.
126. Powell 1995, 139.
127. *Architectural Review*, vol. 189, no. 1135, September 1991, pp. 28-35.
128. Powell 1995, 139.
129. Hampshire Record Office: HPUB/PBR51/1/1/3: *Hampshire Architecture*, page 9.
130. *Architects' Journal*, vol. 196, no. 14, 7 October 1992, p.22, 24.
131. *Architects' Journal*, vol. 195, no. 22, 3 June 1992, p. 39; see also *Building*, vol. 261, no. 7963 (43), 25 October 1996, pp.44-47. Woodlea school was voted building of the year in the 1992 Education awards, the 1993 RIBA awards and the 1994 BBC design awards.
132. *Architects' Journal*, vol. 195, no. 22, 3 June 1992, p. 36.
133. Nev Churcher, pers.comm., 10 February 2011.
134. Design for a primary school, Darmstadt, (1951); Girls School (now a comprehensive school); Geschwister Scholl Schule, Lünen, (1956–62); Main and primary school, Marl, (1961–66). *Architects' Journal*, vol. 171, no. 10, 10 March 1980, pp.473-79.
135. *Architects' Journal*, vol. 195, no. 22, 3 June 1992, p. 36.
136. *Energy in Buildings*, vol. 1, no. 1, October 1982, pp. 14-15.
137. *Architects' Journal*, vol. 180, no. 50, 12 December 1984, pp.31-52.
138. Weston 1991, 31.
139. Perkins's first choice of translucent cladding was rejected by the fire officer (*RIBA Journal*, vol. 88, no. 2, February 1981, p. 46-47).
140. *Architects' Journal*, vol. 179, no. 13, 28 March 1984, pp. 28-29; *Architects' Journal*, vol. 180, no. 50, 12 December 1984, p. 31-52; *Architectural Review*, vol. 177, no. 1058, April 1985, pp.36-44. The school received a commendation in the 1986 RIBA architecture awards.
141. *Building*, vol. 256, no. 7692 (15), 12 April 1991, pp.41-48; *Architectural Review*, vol. 188, no. 1125, November 1990, pp. 48-52.
142. *Architects' Journal*, vol. 192, no. 4, 25 July 1990, pp.22-24.
143. The panels were later used at sixth form colleges at Havant (main job architect Graham Perkins) and Andover (Trevor Harris). *Architects' Journal*, vol.159, no. 4, 23 January 1974, pp.153-55. *Architects' Journal*, vol.154,no. 35, 1 September 1971, pp.467-68; *Surveyor*, vol.134, no. 4026, 1 August 1969, pp.30-34; HCC 1972, 5-6.
144. http://www.basingstoke.gov.uk/planning/northpopley/proposals/johnhunt.htm, accessed 15 August 2012.
145. Russell 1981, 511.
146. *Architects' Journal*,vol.171, no.12, 19 March 1980, pp.565-80.
147. *Architects' Journal*, vol. 171, no.11, 12 March 1980, pp.519-36.
148. Weston 1991, 18.
149. Fort Hill was published in *Architects' Journal*, vol.171,no.11, 12 March 1980, pp.530-36; *Architects' Journal*,vol.171,no.12, 19 March 1980, pp.565-80; *Building design*, no. 446, 18 May 1979, pp.20-21; *Landscape design*, no.133, February 1981, pp.11-12; *Baumeister*, vol. 79, no. 5, May 1982, pp.469-472; *Concrete Quarterly*, no. 133, April/June 1982, pp.16-19; *RIBA Journal*, vol. 89, no. 8, August 1982, p. 47. It received a Civic Trust award in 1980 and an RIBA Architecture Award Commendation in 1982.
150. Stansfield Smith had been impressed with nineteenth-century arcades encountered on a trip to Brussels (Huw Thomas pers.comm., 2 February 2011; Colin Stansfield Smith pers.comm., 14 June 2011). Examples of a wider contemporary interest in arcades include the 1979-83 scheme of Richard Rogers Partnership for the redevelopment of Coin Street on London's South Bank, inspired by the Galleria Vittorio Emmanuele in Milan.
151. *RIBA Journal* vol. 88, no. 3, March 1981, p. 48. The school was also published in *Architectural Review* vol. 172, no. 1025, July 1982, p. 18, 21-27;. *Architects' Journal*, vol. 180, no. 48, 28 November 1984, pp.63-76; *MD*, vol. 30, no. 3, March 1984, pp.62-65 and *Deutsche Bauzeitung*, vol. 117, no. 8, August 1983, p. 22-23.
152. *Architects' Journal*, vol. 168, no. 51/52, 20/27 December 1978, pp.1183-98.
153. DES 1972b.
154. Information provided by the Royal Academy Library.