

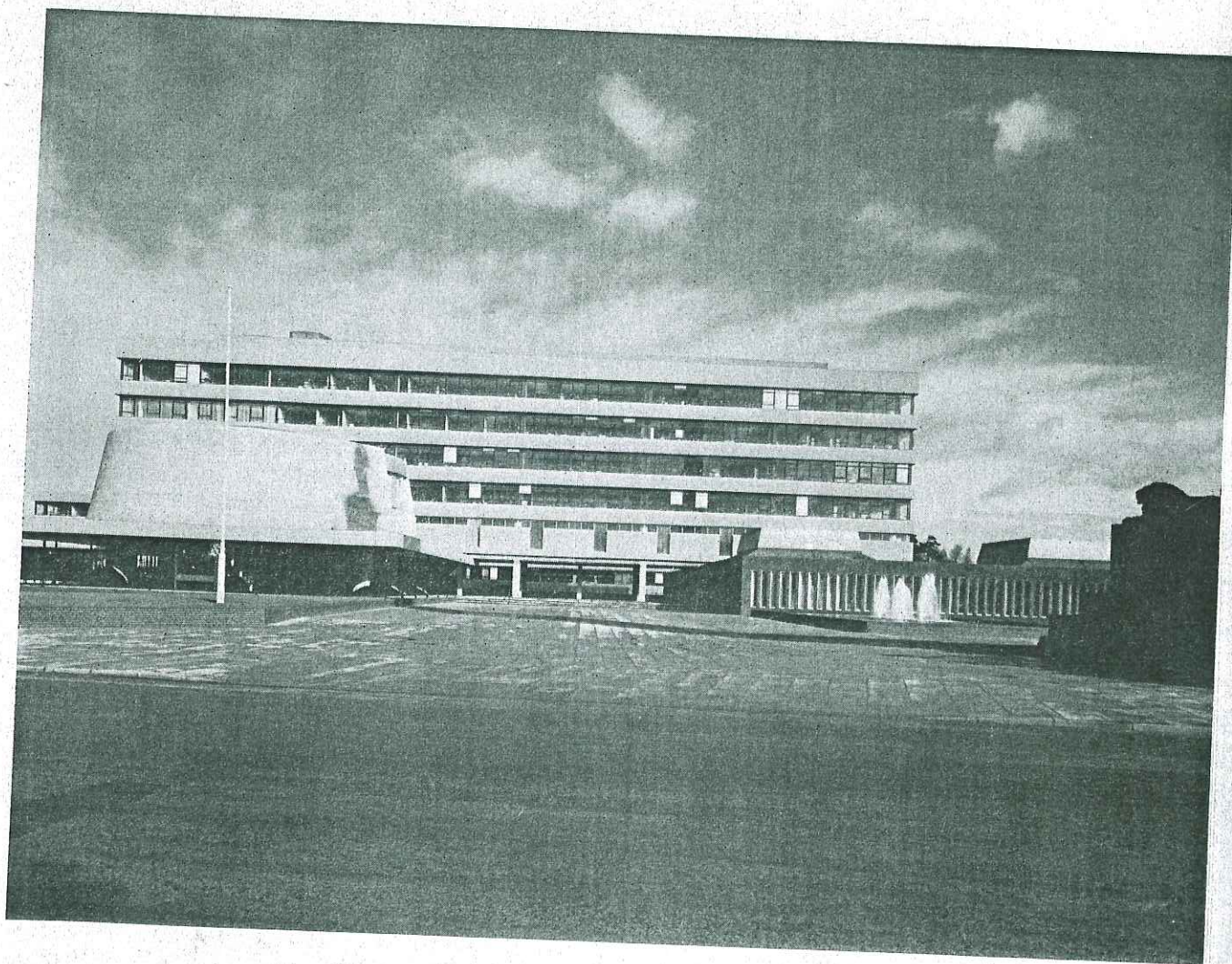


AJ

SfB (92)

Building study
Second series

UDC 725.13/.15
Administrative and judicative buildings



Shirehall and law courts

at Abbey Foregate,
Shrewsbury
designed by Ralph Crowe, Salop
county architect until
31 March 1966
architect in charge Alex Jeffries until
September 1964
assistants Antony Newall
Michael Smith
Reginald Dutton
Gerry Barnett
Sidney Jolliffe
Peter Parker Jones
John Stuckey
Bryan Holland

furniture designers Douglas Webb
Ewart Pardoe
heating and
electrical engineers Leslie Dolamore
William Marlow
quantity surveyor
consultants J. Dansken & Purdie
structural engineer Ove Arup & Partners
services engineer F. C. Foreman & Partners
acoustics and
lighting Engineering Design
Consultants

*Salop County Council
like many others in the '30s
considered concentrating all
administration on one site.
The war inevitably delayed*

*action; the post-war
Welfare State inevitably
aggravated the need by large
staff increases. Salop
fortunately acquired a*

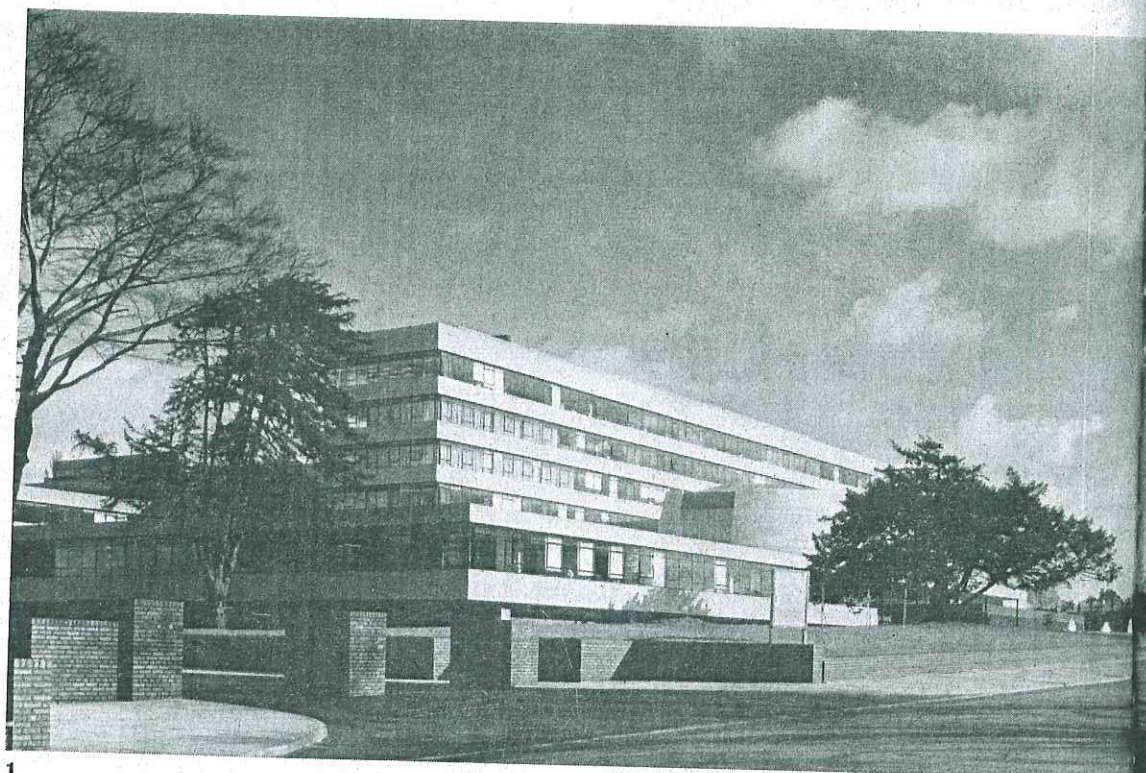
*ten-acre site only one mile
from the town centre for its
third Shirehall, housing 650
resident staff. Design was
influenced, perhaps*

*inhibited by 'the Column',
the vertical feature nearly
100ft tall on the site,
commemorating Lord Hill
and the Peninsular War*

1 The Shirehall buildings as they appear to the pedestrian approaching 'the Column' from Shrewsbury's centre. The purposely casual complex is kept away from, and only about half the height of, the Column, so as not to compete. However, from some viewpoints the new buildings do appear as clutter about the column's base

2 From the Leominster road, the new Shirehall forms a backcloth to the Column. The shaped council chamber is behind the 'give way' road sign, and there are two courts in the single-storey brick block to the right, with the six-storey office slab acting as a link

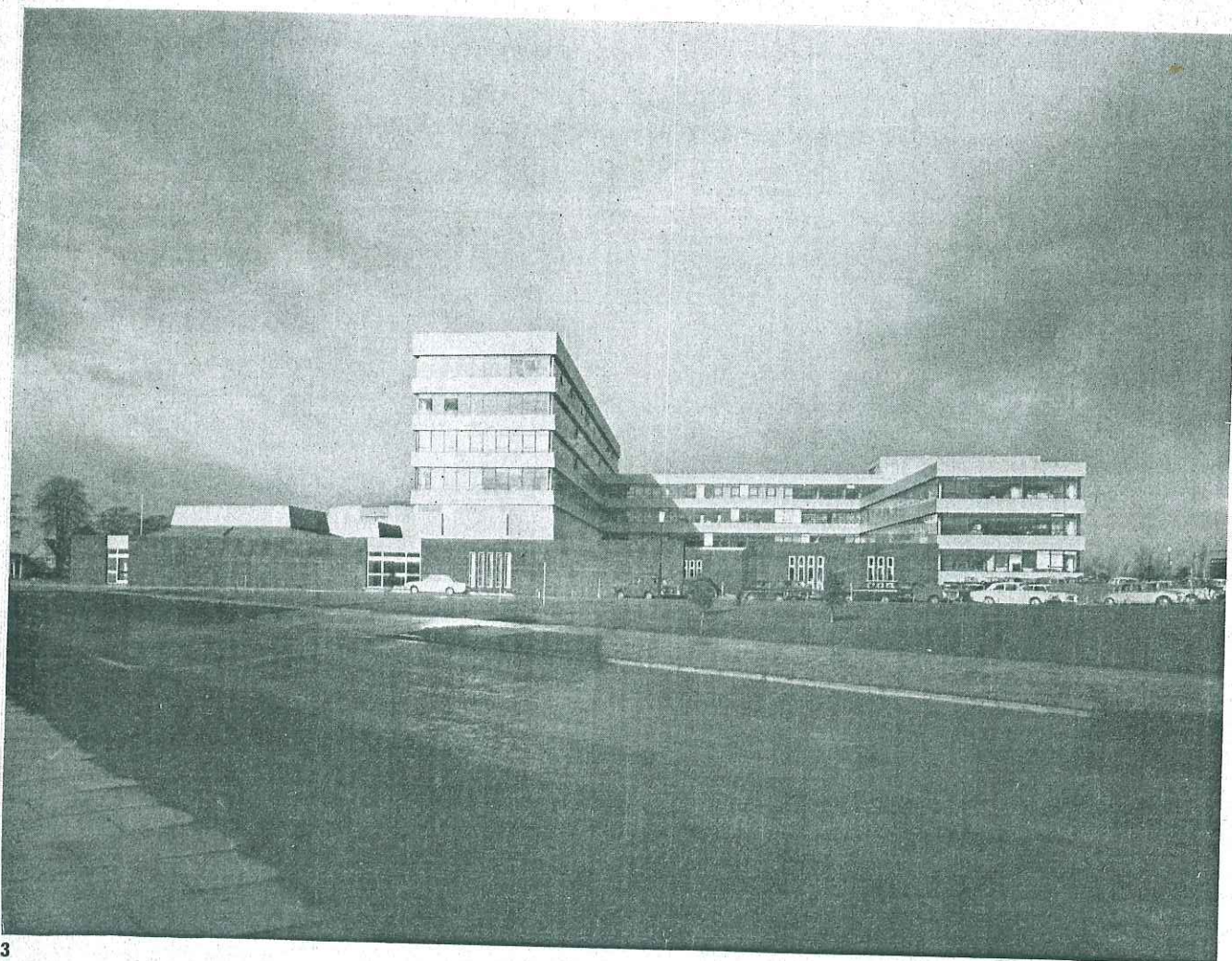
3 View from east, showing clearly the group's complex form. Owing to varying heights of blocks, and to one block overriding another, many offices have a roofscape as part of their

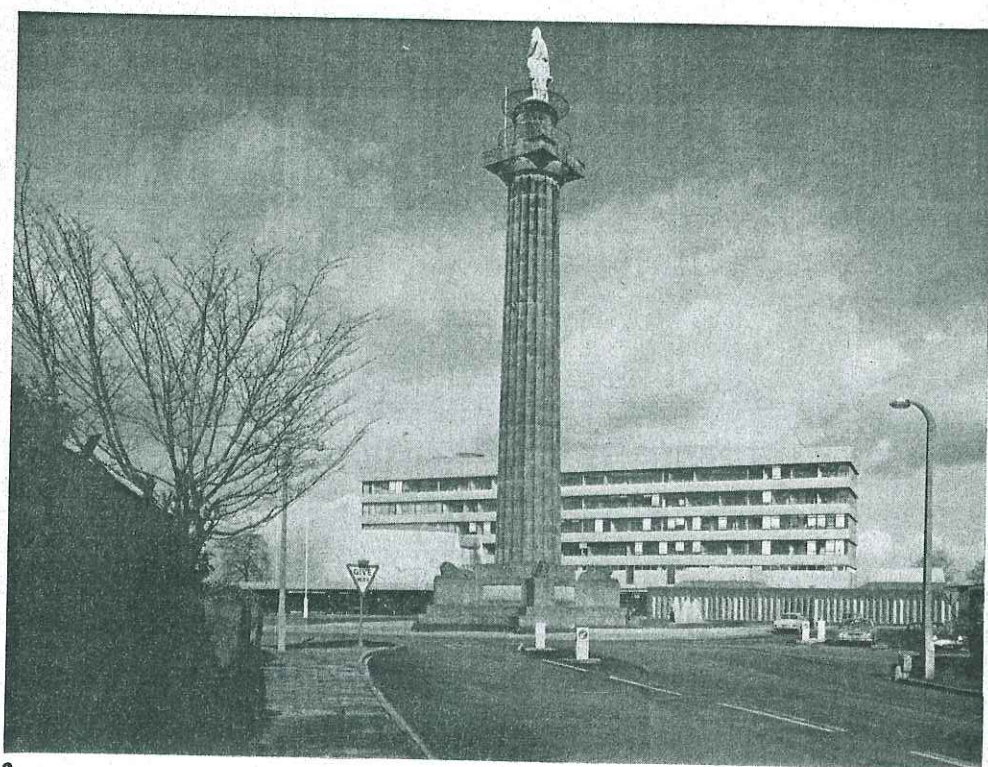
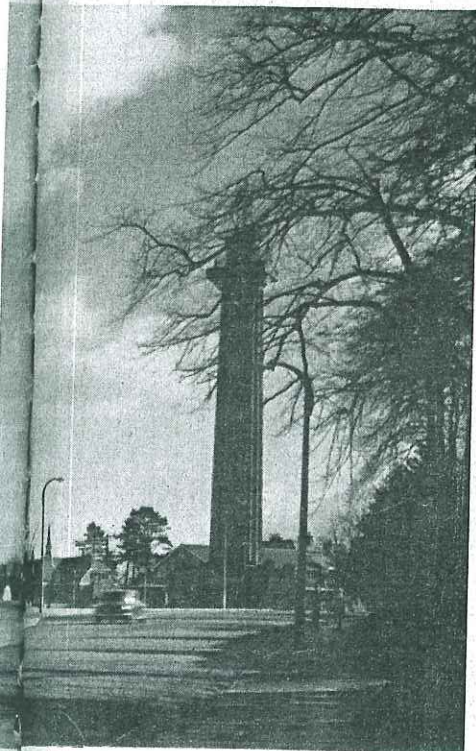


otherwise fine and extensive view. Problems of a caretaker's roof-top flat (right) were not completely overcome: the change of

external wall finish impinges; domestic fenestration requirements intrude into the simple recurring theme elsewhere;

and from some angles a spider's web type clothes drier, on the roof adjoining the flat, is silhouetted against the sky





2

CLIENT'S REQUIREMENTS

The inadequacy of the old Shirehall (built about 1880) owing to expansion of administrative departments (partly dispersed in rented properties around the town) necessitated rebuilding to achieve centralisation. The brief was based on present needs of departments with allowance for future expansion.

SITE

The site of ten acres is about one mile from the town centre on the eastern approach to Shrewsbury and includes 'the Column' (see 'Appraisal'). It contained a large town house, Nearwell, with some good mature trees in its grounds. Some of these have been retained.

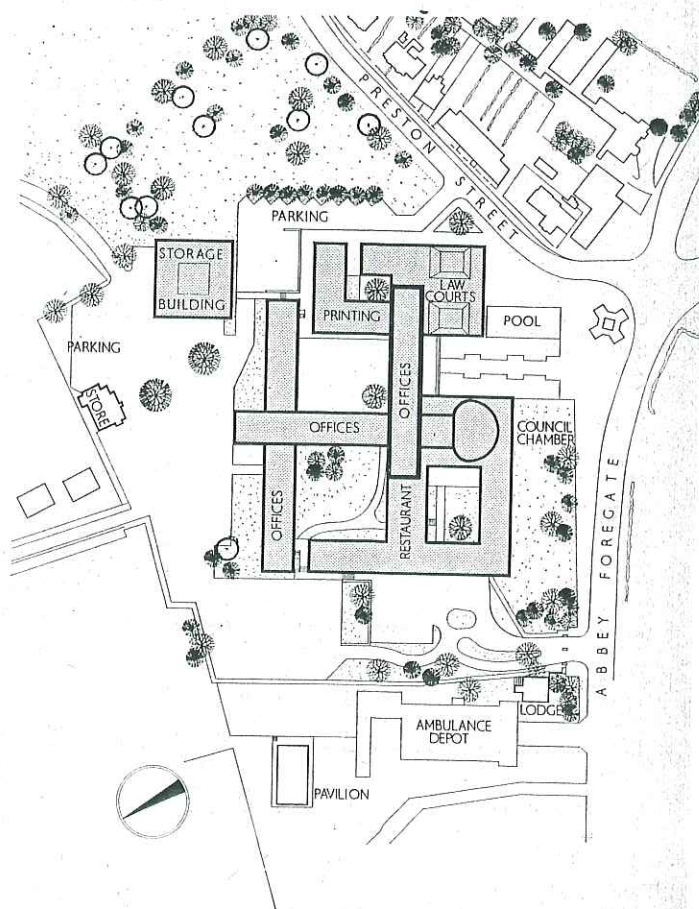
PLANNING

The siting of the building and its layout were strongly influenced by the dominating vertical feature of 'the Column' which has been incorporated in the pedestrian forecourt. The building has been planned as a connected complex of blocks around landscaped courtyards through which there is free access for movement at ground floor level.

APPRAISAL

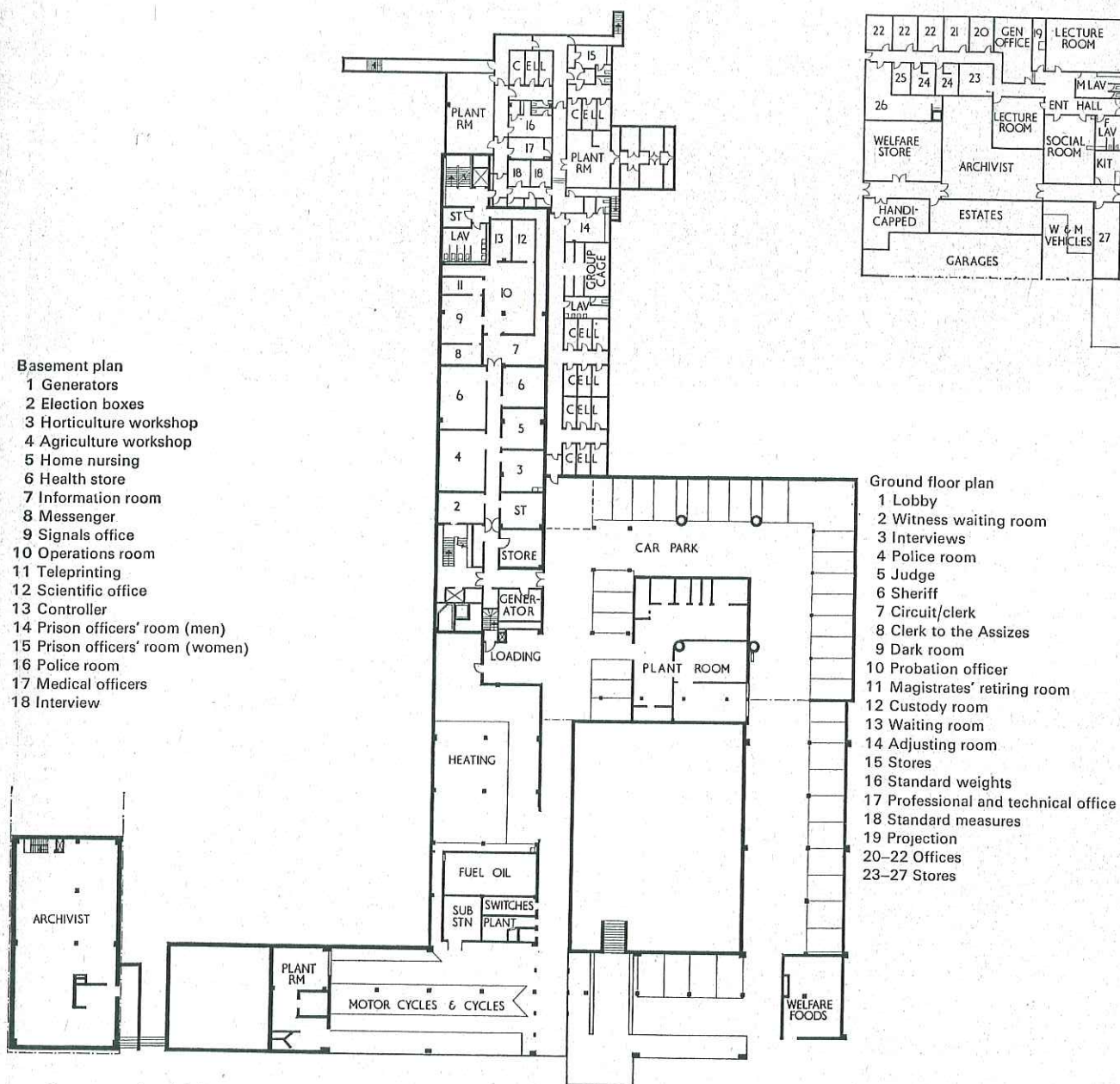
The history of Salop's Shirehalls pinpoints the problems of building for a continually expanding administrative machine. Structural instability (the first Shirehall, built in 1784 was considered unsafe by 1833) and fire (the second, designed by Sir Robert Smirke as a safe replacement, was severely damaged by fire in 1880) in this case caused two reassessments of requirements within one hundred years; though the councillors of 1880 preferred to rebuild largely to Smirke's design. Since then there have been additions, and in later years an ever increasing use of temporary buildings and rented properties dispersed throughout the town.

This dispersal is obviously administratively inconvenient

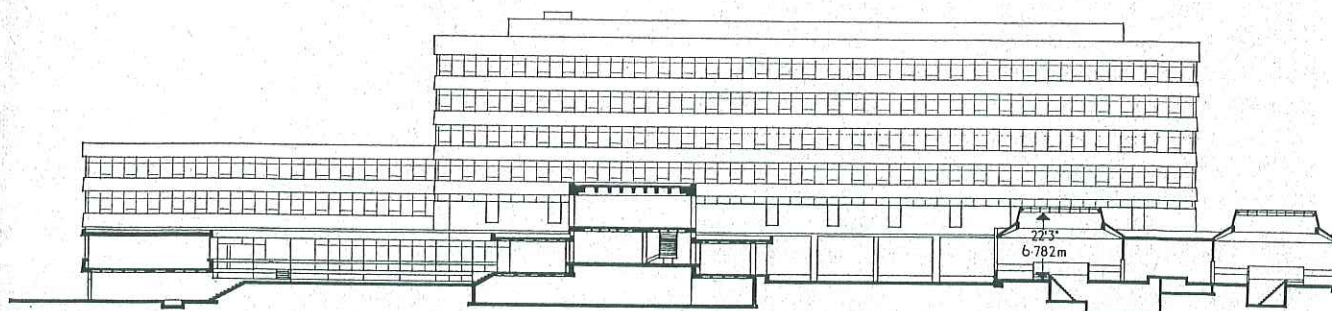


Site plan (1:3 000)

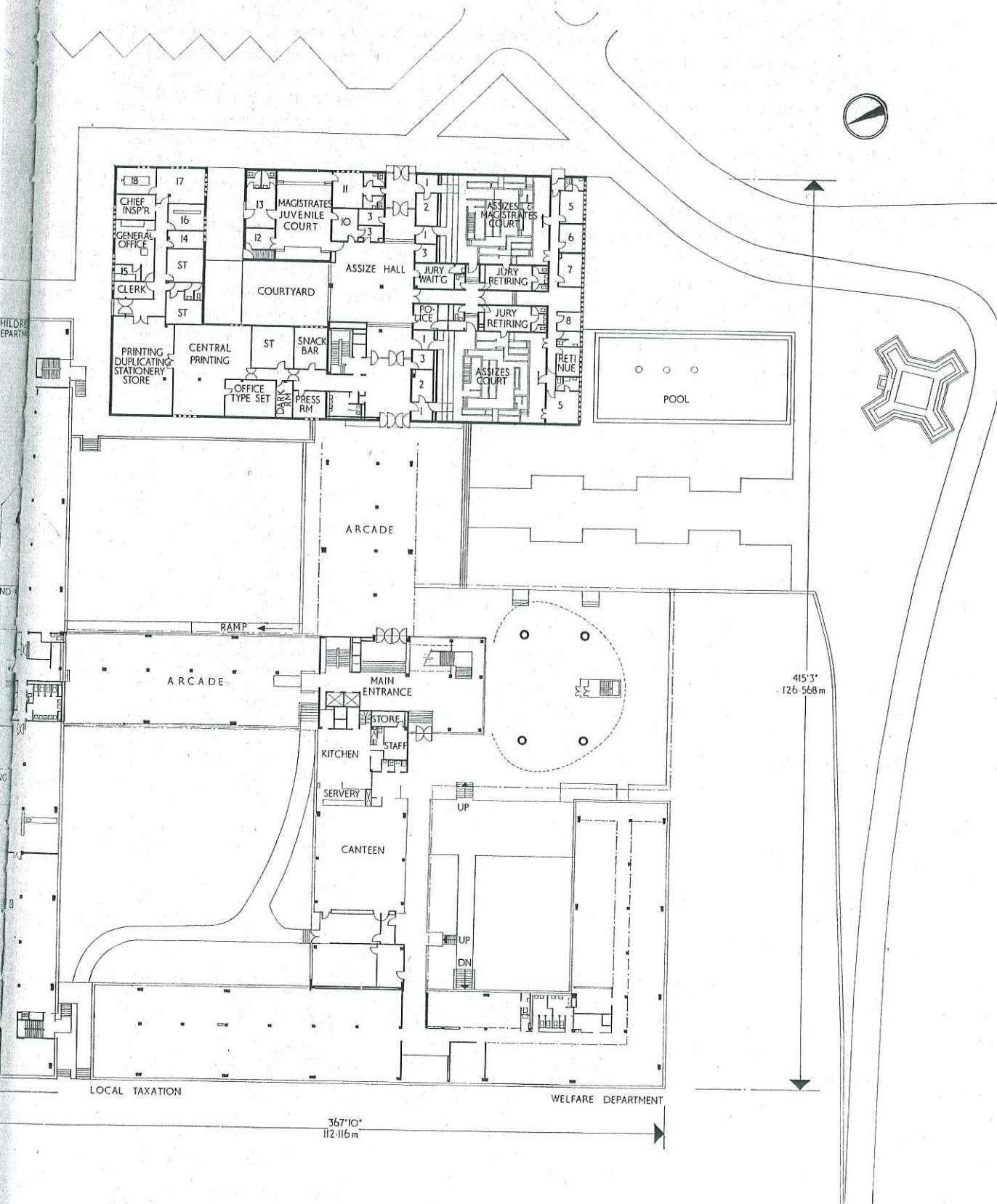
and probably inefficient. It does have advantages which should not be ignored, however. Access for the public is frequently convenient—it is possible to pop into required departments as easily as into shops. A multiplicity of small units, each of them 'dead' during evenings and weekends, is not so sterilising to a town as a large complex tends to be (assuming town centre space is available; the alternative, a



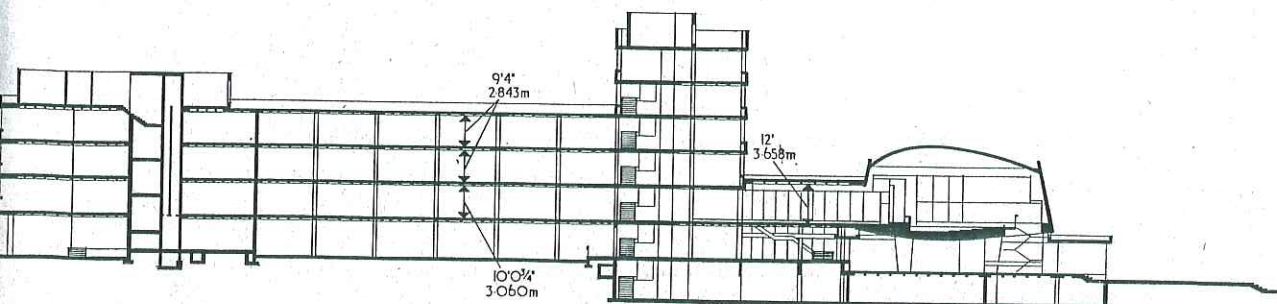
Basement plan ($\frac{1}{64}$ in = 1ft)



West-east section through council chamber foyer and assize courts ($\frac{1}{64}$ in = 1ft)



Ground floor plan ($\frac{1}{8}$ in = 1ft)



North-south section through office areas and council chamber ($\frac{1}{8}$ in = 1ft)

site outside the town, greatly reduces convenience of access for the public).

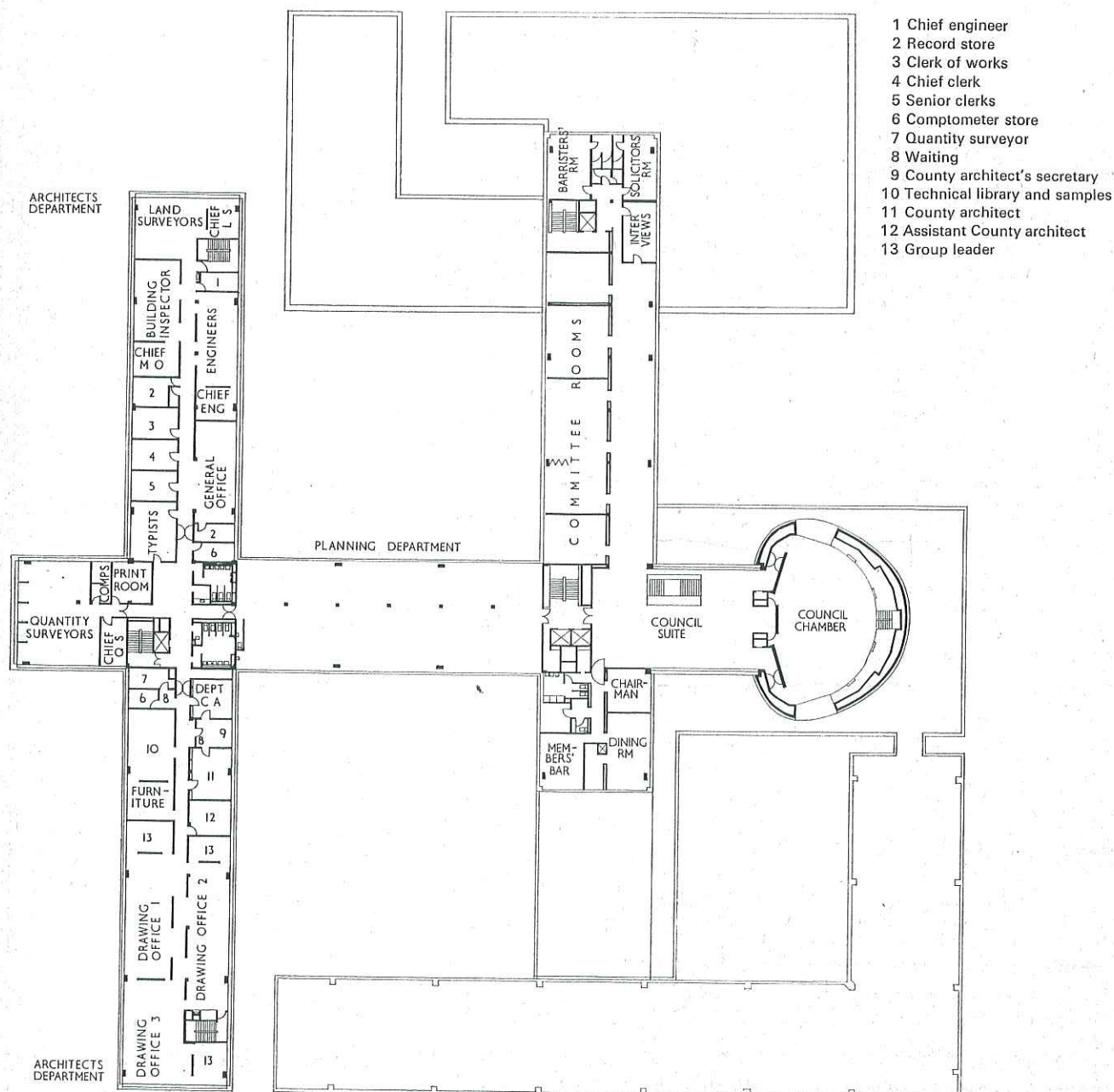
Naturally some departments have more public involvement than others; this could well lead to establishment of at least motor taxation and treasurer's suboffices in a town centre when county offices are together outside the town.

Shrewsbury is a relatively small town, so the problem is not critical; but even so, a mile (each way) is far enough to be a nuisance to have to travel for minor business.

'The Column' is a landmark **1, 2**, standing on high ground at a road junction east of the town. From several viewpoints in and around Shrewsbury it dominates the skyline. The Shirehall has been kept clear of the Column; single-storey buildings are no closer than 120ft, while the tallest block (a six-storey slab) is over 200ft away. At close quarters this succeeds in accentuating the power of the Column, but

from some more distant viewpoints the bold impact of the vertical form has been lessened quite considerably, with only about half its height seen rising above the new blocks near to its base.

A complex form has been adopted for the building **3**, presumably in an effort to limit the apparent bulk. This is achieved but at the expense of a lack of clarity in the resulting massing, and a worrying arbitrariness. Nearest the road are two single-storey wings (the one to the west becoming two-storey because of a fall in levels). The two main courtrooms break the roof of the east wing, and the curving form of the council chamber nestles onto a large (60ft x 46ft) canopy **4** maintaining the roofline of the west wing and surrounding the main entrance hall. The council chamber is structurally divorced from the canopy (the gap between introduces daylight into the depths under the canopy), and



First floor plan at level of council suite ($\frac{1}{8}$ in = 1 ft).
Partitioning layout shown for architects' department

this is visually apparent at close range.

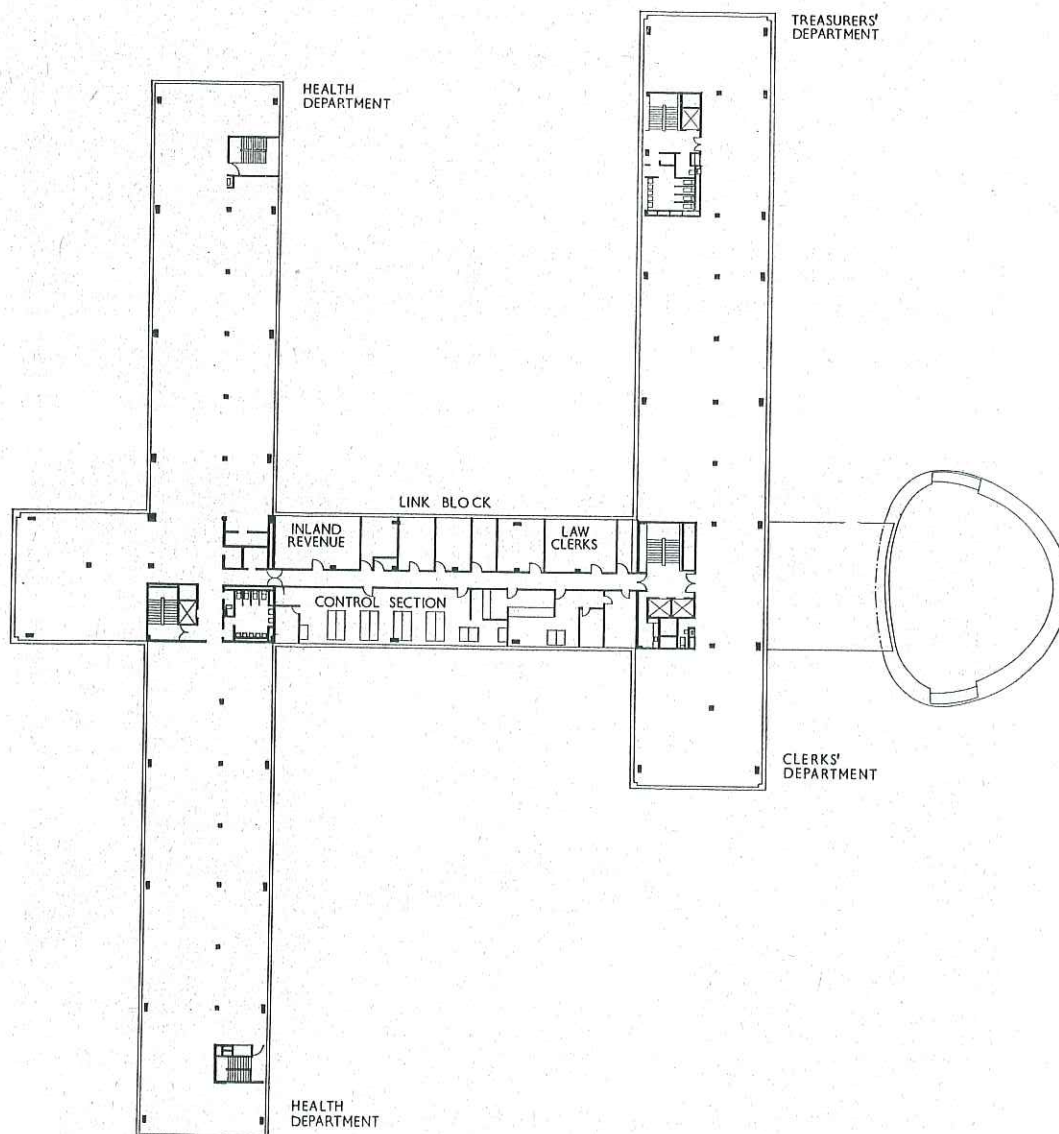
Rising from and across these two single-storey wings is the six-storey slab **5, 6** containing county council members' accommodation, committee rooms and so on (on the first floor and linked with the council chamber); above, are the clerks' department (second floor), treasurers (third) and education (fourth and fifth); at the top are tanks and fan rooms. This block has its long sides almost due north and south facing. With departments demanding small separate rooms and complete corridor access this is difficult to justify: some have no sun while others have too much.

Penetrating this block from the north is a four-storey slab, open at ground floor level and thus linking the courts lying to either side. The planning department is on the first floor of this, clerks on the second and surveyors on the third. The north end of this block rides over a three-storey block with

archivist, land agent and children's department at ground level, architects on the first floor, and health department on the second floor.

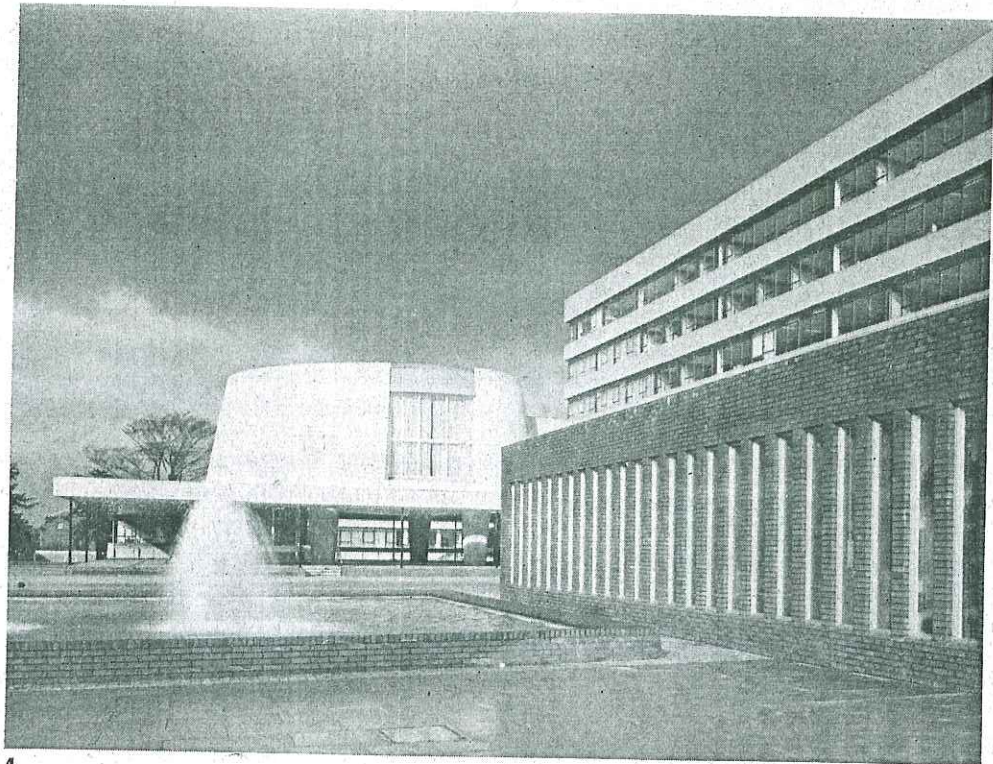
It is questionable whether much has been gained by the variety of heights of the different wings, especially as they have not been chosen to secure the best of aspects for a majority of rooms. The same fenestration is used to north, south, east and west. There are fine views of the surrounding country, but in many cases the immediate foreground includes a roofscape view of one of the lower blocks, and this is not particularly attractive.

Inevitably, in a building including courts and council chamber, one of the problems is to achieve appropriate entrances and approaches. Here the formal approach leads from near the base of the Column (photo p767) at the junction of the roads. Paving, water, and fountains **4, 5** have all



Second floor plan ($\frac{1}{4}$ in = 1 ft). Partitioning layout shown in link block only

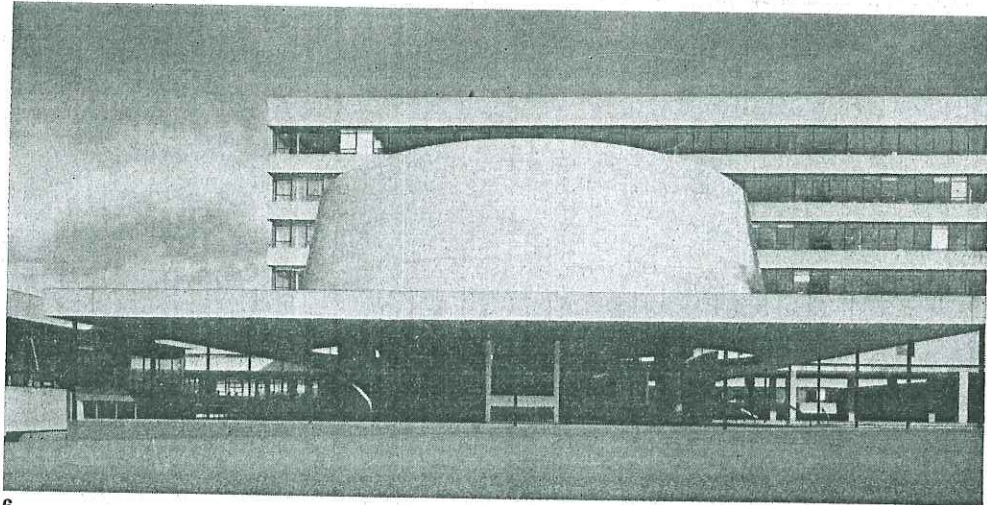
4 On windy days it is necessary to reduce the water pressure, and the fountains look half-hearted and sad; usually the jets are higher than seen here. The shaped council chamber rising from its square canopy/base is in fact carried on four tapered columns; the canopy is independent but does not appear so from a distance. It is surprising, in the dignified courts and associated rooms, to find gay coloured glass in some vertical slit windows



4

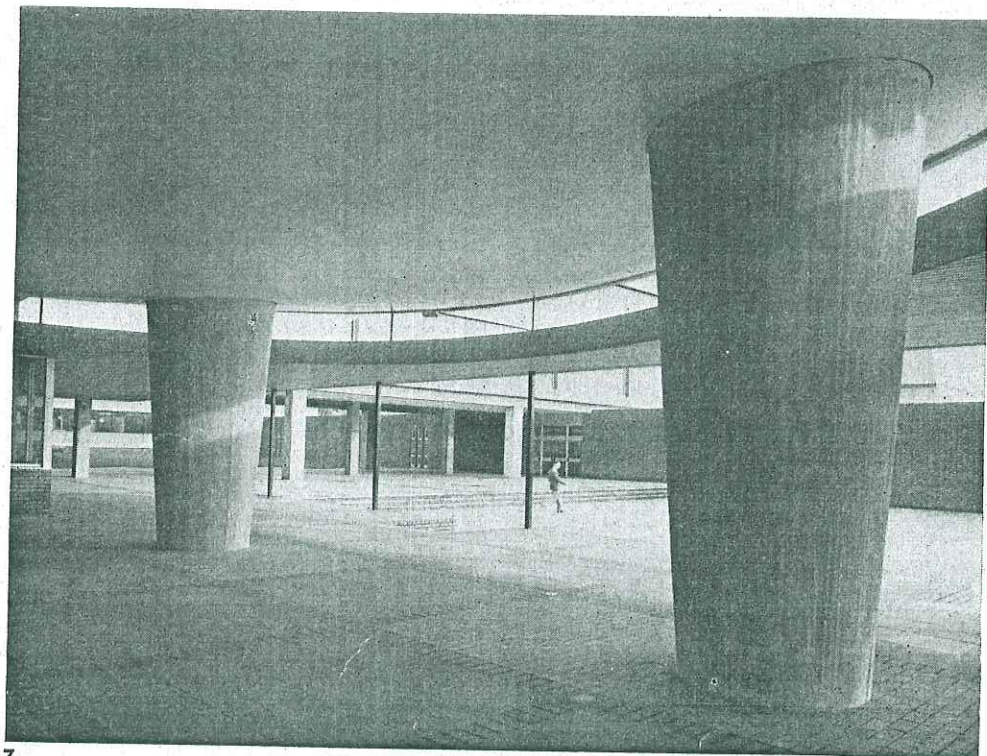
5 At night a sparkle is provided by the illuminated fountains; otherwise internal lighting defines the building forms. The effect of the solid council chamber over the open ground floor entrance area is largely lost

6 The extent of the canopy, out of which the council chamber rises, can be seen. Visually the six-storey office block terminates at its west end too soon. Portland stone is used to clad the council chamber. Spandrels and eaves fascias are mosaic; the vertical marks caused by water from the joints in the slate coping are unfortunate. In this view the main entrance hall is directly ahead underneath the council chamber; it can be approached from either side



6

7 The rough concrete finish to tapering columns supporting the council chamber is hardly compatible with the other finishes, which include mosaic to underside of chamber and timber strip to underside of canopy. A ring of glazing separating structure of council chamber from canopy admits natural light to the paved area

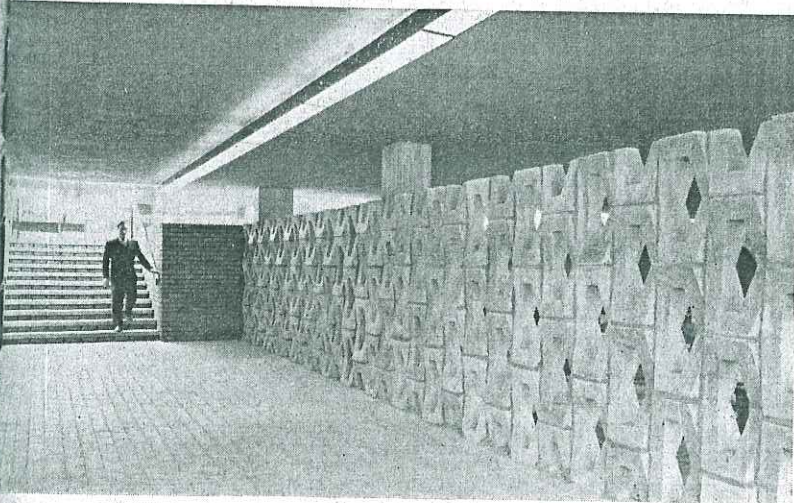


7

8 Most car parking is at a lower level to west of complex. Main route from car park into building is up this flight of steps and across an attractively detailed court to the entrance hall



5



8

been used to emphasise and give interest to this approach—which, however, is unlikely to be the most frequently used in this day of the car. It seems appreciated only by the occasional couple with a pram or policeman pushing his bicycle before leaning it against the front wall of the court building. There are three commonly used entrance routes. Council members go from a basement car park directly by lift or stairs to the council chamber foyer **16**. The courts have a direct entrance from the east side of the building near Preston Street and some parking facilities. From the main open parking area to the west of the building a flight of steps **8** leads from the open lower level, under the building and up into a court adjoining, and open to the canopy forming the base on which the council chamber appears to perch. Directly across this court is the entrance hall **15**. This route is treated formally. A further route from the car park includes an informal curving path of large natural stone slabs set randomly in grass through one of the other courts.

The underside of the council chamber floor slab is convex **7** and the slab houses ducts beneath the stepped members' seating. There are four tapering columns supporting this massive structure—450 tons of concrete, placed in one pour. The concrete shell roof and Portland stone sloping walls are carried around the cantilevered edges of this mammoth

slab. Internally the ceiling follows the shell form, and the seating approximates to the form below; but the wall panelling is vertical, so that the slope to the wall—introduced for external aesthetic effect only—is bound to be questionable. Uncomfortable-looking junctions occur where the straight window-wall of the foyer meets the slope of the chamber wall, though admittedly these are seldom seen as swivel full height blinds to the windows normally limit what is seen. There frequently seems to be, in schemes such as this, an urge to express a council chamber in some visually emphatic way, contrasting its shape with the more straightforward office blocks nearby. Here the attempt is largely successful, the square canopy beneath **6** tying both together, and the apparent illogicality of the sloping wall seemingly justified by the external appearance.

The slope to the council chamber walls is reflected, although diminutively, in the spandrel walls throughout the office block **10, 11**. These have a slight inward slope (of 3in to 4ft 6in height) on the outer face, the inner face being vertical. The result, even with the slightness of the slope, is very noticeable, and has the curious effect of making the vertical faces of the eaves parapets appear uneasy. It is probably these spandrel slopes, with the rounded slopes of the council chamber and the unbroken horizontal lines of windows, that make the building complex look slightly nautical.

The council chamber **17, 18** is comfortable and pleasant, with well designed seating (an active furniture design section of the architects' department, normally concerned mostly with schools, has been able to make a fruitful contribution throughout). A severe but not solemn character has been achieved. There is a direct public staircase from under the canopy to the rear of the chamber; this, at ground level, is completely glazed **20**. A glass box such as this demands frequent and careful cleaning (not yet accepted by the council) otherwise shabbiness instead of sparkle results. An alternative enclosure would have been less demanding.

A touch of whimsy is introduced here and there; but not, unfortunately, integrated with the general design approach. It is as though someone was afraid of the clean lines and unity of materials and felt that relief was needed. One such is the slab path through the grass **12**, which is self-conscious in this position, and not easy to negotiate. Another occurs in

9 The court from entrance hall doors. Covered access, on right, is provided to staff canteen

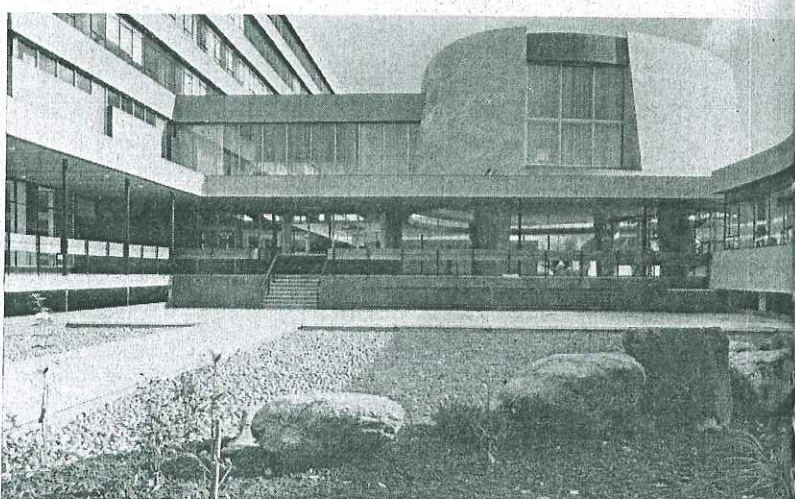
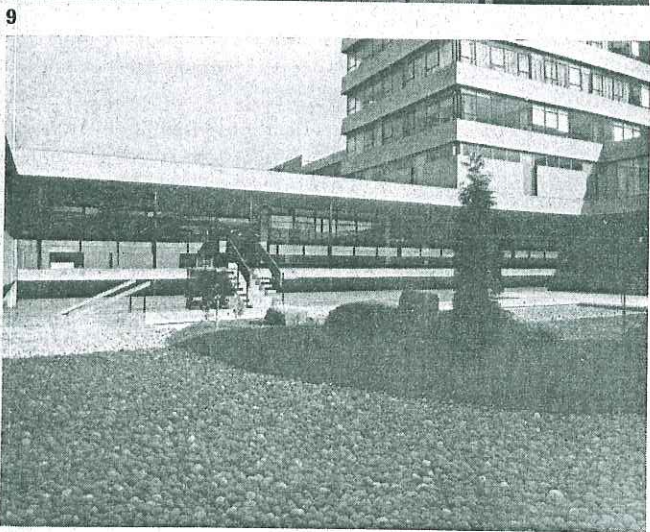
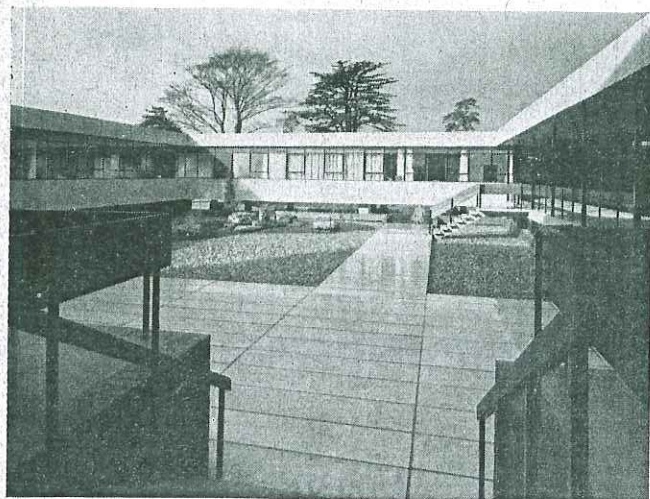
10, 11 Two more views of entrance court, showing its relationship to council chamber and tallest office

block. The glazed first floor apparently crashes into the council chamber, ignoring its slope; the detail, though hardly seen, overcomes this. The slight outward slope of the spandrel walls is very noticeable at corners of

taller blocks **11**. This and the horizontal sweeps of spandrels and windows, give a nautical flavour

12 A less formal way from car park to entrance hall is through this self-consciously 'natural' court, with large

irregular slabs and undulating grassy banks—a pleasant idea which has resulted in a rather contrived appearance. All three courtyards suffer as spaces because buildings bounding them vary too



11 the foyer to the council chamber **16**; an area arranged for seating is marked by pendant lights above trying too hard to relax the character in sympathy with the seating. The idea is good, but the result is unconvincing and once again self-conscious.

It was decided to include the law courts in the complex only after tenders had been received; this naturally created problems. It is to the credit of the architects that, notwithstanding this, and even with the different character which the courts demanded, the result does not suggest a late addition to the brief. Two identical courts **22** are for assizes and quarter sessions, and a smaller, informal court **23** is for juvenile or magistrates' use. (It is sad that the policeman on duty in no way recognised it as a juvenile court, with a character to suit; to him it was the 'mid-county' court.) The juvenile court has its own informal entrance sharing a private small courtyard with the door for women prisoners to reach their six cells at basement level. Rather more provision is made for men prisoners (twelve cells, four individual cages, and a group cage to take fifteen), and entry for these is through the basement covered car park. Generous laylights introduce good natural light into the courts; artificial light is provided along the bottoms of the criss-cross waffle ribs of the laylights, supplemented by

12 ceiling fittings around the outside.

The courts, council chamber, committee suite and computer room are double glazed and air-conditioned. All office windows, single glazed, can be cleaned from the inside. Perimeter convectors and radiators of low pressure hot water and supplemented by ducted warm air heat the offices, canteen and workshops. The boiler is oil fired, with temperature control automatic from outside conditions. The computer room, which has the first IBM model 360/30 of this type installed in this country, is to be available for other public bodies as well as the county council, and has independent and electrically operated air-conditioning. Externally the number of finishes is limited; Portland stone to the council chamber, pale grey/green Italian ceramic mosaic to the offices generally, and rustic Staffordshire blue bricks to the courts wing. With such an attractive and expensive-looking finish as the mosaic over large areas it is particularly disappointing to realise that the eaves detail is unsatisfactory. Slate is used for the coping, with no overhang. Rainwater tends to gravitate to the joints, and there are regular vertical streaks in line with these at almost all positions. The smooth appearance of the horizontally-emphasised plane of the fascia, obviously wished for, is already being lost. It is surprising, in what seems a relatively

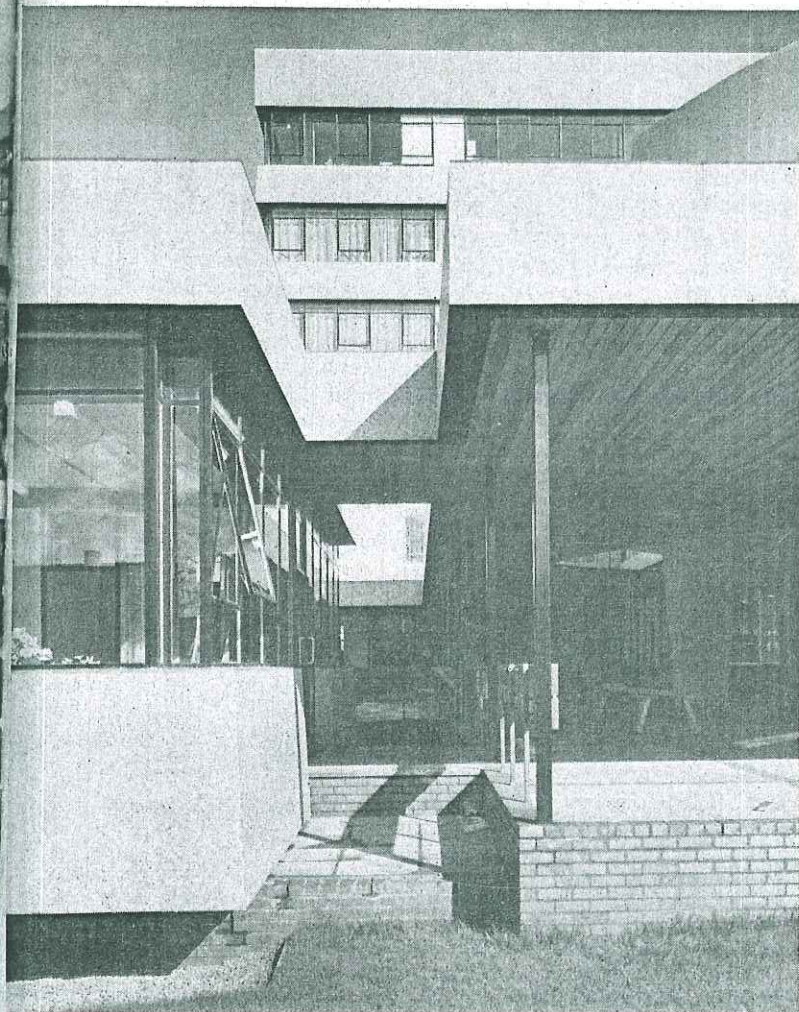
much in height, and because the tall blocks terminate apparently unrelated to external spaces. Outer faces of columns, just behind the glass, are painted black and hardly visible (return faces are

white and clearly seen). At night, however, the columns are strongly silhouetted 5. This view also shows how unhelpful the massing of the blocks is to the courtyards

13 *Detailing is crisp and*

clean. Note how canopy below council chamber, right, maintains the single-storey eaves line 14 There is a tendency towards fussy detailing of handrails, particularly externally

15 *Main entrance hall. Broad steps, right, are on axis with the courts entrance hall, in a separate building to left. Open riser staircase leads to council chamber foyer*



13

clean atmosphere and with the finish of ceramic, that the streaking is so bad. It would of course be extremely expensive to correct the detail throughout but it might be worth trying instead to emphasise even more the vertical lines under the joints and thus make them appear intentional. The 'natural' concrete finish to the bulky tapered columns supporting the council chamber appears decidedly rough and unfinished against the other finishes (the mosaic is continued even over the curved underside of the council chamber).

On the northern end of the four-storey north-south block—at what could be termed the back of the building complex—there is a caretaker's flat on the roof. The fine-looking finish seen elsewhere is not maintained here; no doubt an obvious though sad economy and unsurprising. But it is surprising to see, especially from many of the office windows in the six-storey block nearby, a spider's web type clothes drier gracing the roof adjoining the flat.

Detailing and finishes internally throughout the complex are consistently good with no hint of pretentiousness. The timber handrails are comfortable to hold and to move the hand up or down and round the corners. Lifts operate smoothly and efficiently and have a rich-feeling black internal finish (but are perhaps extravagant for three-storey



14



15

blocks). Each architect in the architects' department has a drawing machine and generous spreader space; the semi-open plan adopted here is successful.

It is interesting to see how the common problem of 'losing' columns which are a few inches behind a glass line has been tackled; the outer face has been painted black. In straight elevation the pretence is complete, but seen from any angle the white returns of the columns show, emphasised by the black/white junction at the corner. The pretence evaporates at night, when lighting strongly silhouettes the columns. The Shirehall's share of artworks includes an undistinguished portrait of the Queen by Douglas H. Anderson, an entrance hall mural relief by Rosalind Alexander, and an exciting aluminium sculpture/mobile by Michael Eastham.

SUMMARY

Ground floor area: 57 560 sq ft.

Total floor area: 213 300 sq ft.

Type of contract: RIBA with fluctuations.

Tender date: June 1963.

Work began: August 1963.

Work finished: December 1966.

Tender price of foundation, superstructure, installation and

finishes including drainage to collecting manhole: £1 374 762.
Tender price of external works and ancillary buildings including drainage beyond collecting manhole: £122 112.
Total: £1 496 874.

COST ANALYSIS

Based on tender.

	Cost per sq ft s d	Cost per sq m £
Preliminaries and insurances	10 0 $\frac{1}{4}$	5.416
7.73 per cent of remainder of contract.		

Contingencies

1.80 per cent of remainder of contract.

Work below lowest floor finish

Piled foundations, reinforced concrete ground beams with 8in waterproofed concrete floor slab. Liquid asphalt damp-proof membrane below ground level.

STRUCTURAL ELEMENTS

Frame

Reinforced concrete columns generally at 40ft centres to office areas. Loadbearing brickwork to law courts. Hollow circular columns supporting council chamber.

Upper floors

4 $\frac{1}{2}$ in reinforced concrete slab: 166 sq yd, 61s 9d per sq yd.
6in do: 830 sq yd, 74s 6d per sq yd.
8in do: 588 sq yd, 91s 4d per sq yd.
12in do: 462 sq yd, 121s 7d per sq yd.
10in hollow reinforced concrete slabs with integral beams and glass fibre moulds in two standard sizes but varying in depth:
12 098 sq yd, 87s 6d per sq yd.
11in do: 239 sq yd, 114s 4d per sq yd.
12in do: 973 sq yd, 111s per sq yd.
Price includes suspended floors over basements.

Roof

3in reinforced concrete in-situ slab:
119 sq yd, 78s per sq yd.
6in do: 94 sq yd, 92s 6d per sq yd.
15in do: 9 sq yd, 140s per sq yd.
10in hollow mould reinforced concrete slab:
4 668 sq yd, 105s 4d per sq yd.
15in do: 1 140 sq yd, 139s 1d per sq yd.
18in do: 169 sq yd, 291s 1d per sq yd.
18in wood wool permanent shuttering and in-situ concrete slab: 341 sq yd, 164s 10d per sq yd.
7in precast lightweight concrete slab:
971 sq yd, 112s 7d per sq yd.
Price includes lightweight screeds, $\frac{3}{4}$ in asphalt and limestone chippings.
Pvc rainwater pipes and slate copings.

Rooflights

Twenty-three 3ft x 3ft aluminium rooflights double glazed with wired glass with double glazed laylights: 23 sq yd, 952s 2d per sq yd.
128 2ft 1in x 2ft 10in do: 84 sq yd, 1 264s per sq yd.

Staircases

In-situ reinforced concrete with in-situ terrazzo or granolithic treads and risers, some precast concrete treads, plastered soffits, mild steel

balusters with hardwood handrails and decorative plastic covered blockboard infill panels.

Staircase	Total rise	Width overall tread
In-situ reinforced concrete with in-situ terrazzo treads	70ft	5ft
Do	127ft	4ft
Do	68ft	3ft 9in
In-situ reinforced concrete with granolithic treads	13ft	2ft 9in
Do	11ft	2ft
In-situ reinforced concrete with precast concrete treads	13ft	4ft

External walls

9in waterproofed reinforced concrete to basement: 1 677 sq yd, 114s 3d per sq yd.
6in reinforced concrete cavity wall with 3in concrete block inner skin, faced externally with mosaics to office areas: 259 sq yd, 260s 9d per sq yd.
9 $\frac{1}{2}$ in average reinforced concrete faced with mosaics to office areas: 3 000 sq yd, 230s 3d per sq yd.
11in do: 1 312 sq yd, 230s 9d per sq yd.
11in cavity wall in brickwork to roof plant houses: 600 sq yd, 100s 9d per sq yd.
9in brickwork to law courts faced externally with blue black facing brickwork: 105 sq yd, 96s 2d per sq yd.
13 $\frac{1}{2}$ in do: 415 sq yd, 126s 2d per sq yd.
8in precast reinforced concrete trough units to council chamber clad externally with Portland stone (sloping face, irregular curve on plan): 564 sq yd, 476s 7d per sq yd.
Double glazed aluminium curtain walling to staircase enclosure: 77 sq yd, 458s 2d per sq yd.
Slate sills generally.

Windows

Double glazed aluminium windows to council suite and law courts: 6 808 sq ft, 55s per sq ft.
Galvanised mild steel windows glazed with $\frac{3}{16}$ in or $\frac{1}{4}$ in polished plate glass: 53 100 sq ft, 26s 3d per sq ft.

External doors

1 $\frac{3}{4}$ in West African mahogany with do frames: 74 sq ft, 43s 2d per sq ft.
1 $\frac{3}{4}$ in do: 130 sq ft, 30s 7d per sq ft.
1 $\frac{3}{4}$ in afrormosia with hardwood frames: 147 sq ft, 44s 7d per sq ft.
1 $\frac{3}{4}$ in semi-solid flush faced both sides with decorative plastic: 33 sq ft, 43s 6d per sq ft.
2in semi-solid flush faced with West African mahogany: 18 sq ft, 34s 5d per sq ft.
Toughened glass: 450 sq ft, 74s 2d per sq ft.
No of single: 20. No double: 9.

Internal structural walls and partitions

4 $\frac{1}{2}$ in reinforced concrete: 33 sq yd, 58s 6d per sq yd.
6in do: 1 722 sq yd, 85s 9d per sq yd.
7 $\frac{1}{2}$ in do: 1 406 sq yd, 91s 1d per sq yd.
9in do: 825 sq yd, 99s 2d per sq yd.
3in concrete block: 1 829 sq yd, 25s 6d per sq yd.

s d £

10 7 5.697

7 3 $\frac{1}{4}$ 3.936

3 0.135

7 5 $\frac{1}{4}$ 4.025

1 0 $\frac{1}{4}$ 0.549

s d £

4in do: 825 sq yd, 31s per sq yd.
 4½in common brickwork: 2 301 sq yd,
 33s 7d per sq yd.
 9in common brickwork: 967 sq yd,
 60s per sq yd.
 1lin cavity wall in brickwork: 30 sq yd,
 75s per sq yd.
 4½in selected common brickwork:
 1 070 sq yd, 37s 11d per sq yd.
 9in blue Staffordshire engineering brickwork:
 161 sq yd, 120s per sq yd.
 West African mahogany glazed screens:
 110 sq yd, 221s per sq yd.
 Blockboard wc partitions faced both sides
 with decorative plastic: 136 sq yd,
 219s 10d per sq yd.
 1½in hardwood veneered soundproofed
 proprietary sliding and folding partitions:
 26 sq yd, 373s 10d per sq yd.
 8ft 8in × 4ft and 9ft 4in × 4ft vinyl coated
 straw board demountable partitions with timber
 posts, West African mahogany skirtings and
 cover boards with borrowed lights over:
 7 405ft, 140s per ft run.

Internal doors

2 8½ 1·446

1½in framed softwood: 33 sq ft, 29s per sq ft.
 1½in West African mahogany with hardwood
 frames: 744 sq ft, 38s 6d per sq ft.
 1½in afrormosia framed: 71 sq ft, 61s 5d per
 sq ft.
 1½in semi-solid core flush with hardwood
 frames for painting: 51 sq ft, 18s 10d per sq ft.
 1½in do: 854 sq ft, 18s per sq ft.
 1½in do with West African mahogany veneer:
 146 sq ft, 22s 5d per sq ft.
 1½in do: 1 250 sq ft, 28s 10d per sq ft.
 1½in do: 300 sq ft, 23s 6d per sq ft.
 2in do: 160 sq ft, 23s 6d per sq ft.
 1½in do with makore veneer: 186 sq ft,
 44s per sq ft.
 1½in do: 338 sq ft, 44s per sq ft.
 2in do: 427 sq ft, 44s per sq ft.
 1½in do: with afrormosia veneer: 71 sq ft,
 68s per sq ft.
 1½in solid cored flush fire door for painting:
 100 sq ft, 20s 7d per sq ft.
 1½in do: 302 sq ft, 21s 6d per sq ft.
 2½in do: 146 sq ft, 21s 3d per sq ft.
 1½in do with West African mahogany veneer:
 407 sq ft, 32s 3d per sq ft.
 2½in do: 156 sq ft, 31s 2d per sq ft.
 2½in do with makore veneer: 36 sq ft,
 45s per sq ft.
 1½in do with afrormosia veneer: 127 sq ft,
 70s 1d per sq ft.
 1½in do: 205 sq ft, 71s 8d per sq ft.
 1½in do: 20 sq ft, 69s 6d per sq ft.
 1½in do covered both sides with leather:
 103 sq ft, 88s 2d per sq ft.
 2in solid core steel faced fire door: 71 sq ft,
 37s 11d per sq ft.
 Toughened glass: 167 sq ft, 70s per sq ft.
 Steel faced to cells: 312 sq ft,
 69s 3d per sq ft.
 1½in decorative plastic faced both sides to wc:
 770 sq ft, 23s per sq ft.
 No of single: 365.
 No of double: 40.

Ironmongery

5½ 0·247

Lever mortise locks with satin chromium plate
 or satin anodised aluminium knob furniture,
 satin anodised aluminium kicking plates, satin

s d £

chromium floor springs, steel butts or bronze
 butts.

Total of structural elements: 46s 5½d, £25·016**FINISHES AND FITTINGS****Wall finishes**

4 3 2·287

½in plaster generally: 9 718 sq yd, 16s 7d
 per sq yd.
 ¾in do to council suite: 933 sq yd,
 18s 3d per sq yd.
 1in do: 233 sq yd, 30s 6d per sq yd.
 ¾in plasterboard with skim coat: 116 sq yd,
 18s 8d per sq yd.
 ½in do: 139 sq yd, 11s 10d per sq yd.
 ½in cement and sand: 1 634 sq yd,
 11s 7d per sq yd.
 ¾in do: 331 sq yd, 11s 6d per sq yd.
 ½in do waterproofed: 360 sq yd,
 10s 6d per sq yd.
 ½in do case hardened: 567 sq yd,
 14s 6d per sq yd.
 Vinyl covered blockboard panelling on
 softwood: 160 sq yd, 168s 9d per sq yd.
 Sycamore slatted panelling with glass fibre
 insulating quilt and softwood frame:
 530 sq yd, 183s per sq yd.
 Elm veneered blockboard panelling on
 softwood: 115 sq yd, 97s 7d per sq yd.
 Afrormosia slatted panelling on softwood:
 290 sq yd, 128s 3d per sq yd.
 West African mahogany under window
 panelling: 2 218 sq yd, 156s 6d per sq yd.
 ¾in black polar marble cladding: 16 sq yd,
 386s 3d per sq yd.
 ¾in statuary vein marble cladding:
 101 sq yd, 513s 11d per sq yd.
 1in tip cremo marble cladding: 14 sq yd,
 333s per sq yd.
 1in green slate cladding: 19 sq yd,
 261s per sq yd.
 4½in × 8½in × ¾in white glazed tiles:
 774 sq yd, 58s 7d per sq yd.
 6in × 6in × ½in do: 80 sq yd,
 42s 3d per sq yd.
 Cement glaze finish on cement rendering:
 264 sq yd, 36s 2d per sq yd.

Floor finishes

5 2½ 2·814

1in granolithic: 1 738 sq yd, 14s 4d per sq yd.
 1½in do: 1 459 sq yd, 16s 11d per sq yd.
 2in do: 248 sq yd, 17s 11d per sq yd.
 1in coloured asphalt paving: 680 sq yd,
 20s 3d per sq yd.
 1in terrazzo: 370 sq yd, 51s 6d per sq yd.
 3·2mm linoleum on screed: 5 065 sq yd,
 37s 9d per sq yd.
 12in × 12in × 3·2mm linoleum tiles on do:
 2 443 sq yd, 39s 9d per sq yd.
 9in × 9in × ½in vinyl tiles on do: 5 065 sq yd,
 39s 10d per sq yd.
 12in × 12in × ½in cork tiles on do:
 1 616 sq yd, 39s 6d per sq yd.
 2in York stone: 43 sq yd, 98s per sq yd.
 Carpet on screed: 703 sq yd, 109s 3d per sq yd.
 1in tongued and grooved softwood boarding:
 81 sq yd, 24s 8d per sq yd.
 1in missanda strip on battens: 203 sq yd,
 65s 9d per sq yd.
 1in semi-sprung maple strip: 226 sq yd,
 53s 11d per sq yd.
 1in semi-sprung makore strip: 108 sq yd,
 58s 6d per sq yd.

4in \times 4in \times $\frac{7}{16}$ in black clay tiles: 637 sq yd, 54s 9d per sq yd.

6in \times 6in \times $\frac{3}{4}$ in heather brown tiles: 179 sq yd, 48s 9d per sq yd.

All floors to overall thickness of 3in with lightweight screeds, softwood and hardwood skirtings with aluminium angle trim over and slate, granolithic and asphalt skirtings.

Ceiling finishes

$\frac{1}{2}$ in plaster: 155 sq yd, 19s per sq yd.

$\frac{1}{2}$ in cement and sand plain face: 515 sq yd, 12s 10d per sq yd.

$\frac{1}{2}$ in plaster, expanded metal lathing on softwood suspension: 2 147 sq yd, 51s 7d per sq yd.

$\frac{1}{2}$ in do on metal suspension: 1 328 sq yd, 67s 7d per sq yd.

Do to dome: 380 sq yd, 95s 9d per sq yd.

1in acoustic plaster, expanded metal lathing on softwood suspension: 176 sq yd, 51s per sq yd.

$\frac{3}{8}$ in cement and sand plain face on metal lathing spanning 4ft plugged to concrete: 1 419 sq yd, 31s per sq yd.

1in cement and sand plain face on metal lathing spanning 2ft plugged to concrete: 1 263 sq yd, 42s 10d per sq yd.

Sprayed asbestos insulation on metal lathing with metal suspension: 94 sq yd, 81s 7d per sq yd.

1in Parana pine boarding on softwood battens: 915 sq yd, 49s 4d per sq yd.

1in makore slats with glass fibre insulating quilt: 216 sq yd, 102s per sq yd.

$\frac{1}{2}$ in acoustic tiles on softwood battens: 164 sq yd, 56s per sq yd.

$\frac{1}{2}$ in grooved insulation board on softwood battens: 284 sq yd, 40s 10d per sq yd.

12in \times 12in \times $\frac{3}{4}$ in textured acoustic tiles on suspension: 782 sq yd, 61s 2d per sq yd.

Proprietary suspended acoustic ceiling: 10 210 sq yd, 71s 2d per sq yd.

Decoration

Prime, one undercoat and two finishing coats gloss oil paint on metal and softwood externally and internally.

Priming lacquer and two top coats clear lacquer on hardwood externally.

Prime and two coats chlorinated rubber based paint on rendered soffits externally and internally.

Two coats emulsion and oil paint on plaster.

Two coats emulsion paint on fair faced brickwork and concrete.

Two coats emulsion paint on ceilings.

Sealer on wood strip and granolithic; polish on linoleum; vinyl wall coverings on plaster.

Fittings

Vertical louvered blinds; venetian blinds; spring load roller blinds; demountable storage units; fixed seating and writing tops to council chamber; fixed seats and writing tops to courtroom; judges bench; dock; witness box; work benches; wall cupboards; sink units; inquiry counters; hose reel cupboards; cabinets; vanitory units; shelving.

Total of finishes and fittings: 27s 0 $\frac{1}{2}$ d, £14.565

s d £

7 0 $\frac{1}{2}$ 3.7791 11 $\frac{1}{4}$ 1.065

8 7 4.620

16 Pendent lights with bright red shades mark, not very happily, sitting area in council chamber foyer

17 Council chamber.

Nautical connections are

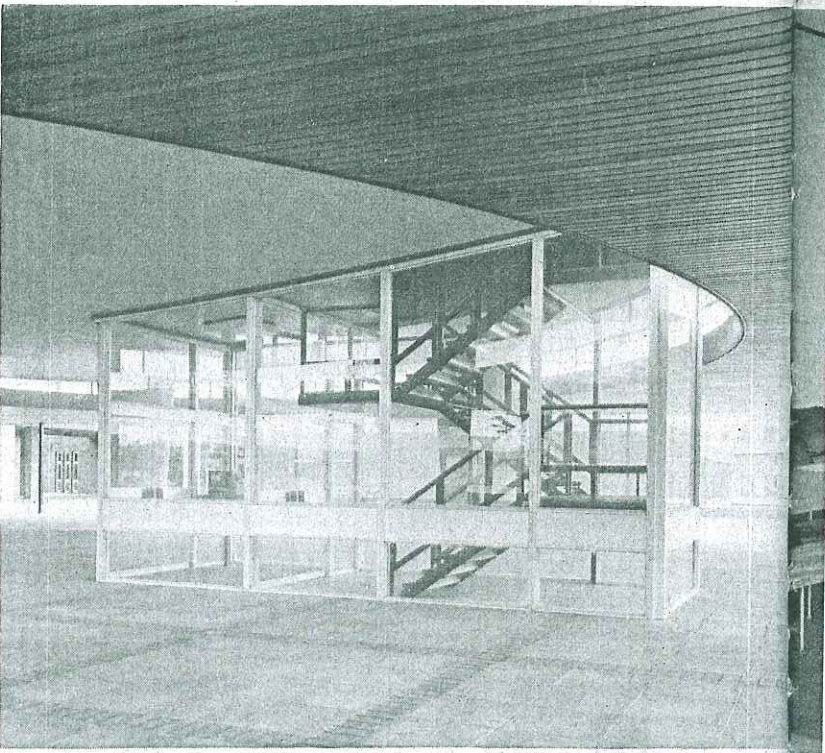
implied by the bell, worked by press button from the chairman's seat. The chamber is a pleasant shape, and materials and detailing are restrained. Nearly all



16



17



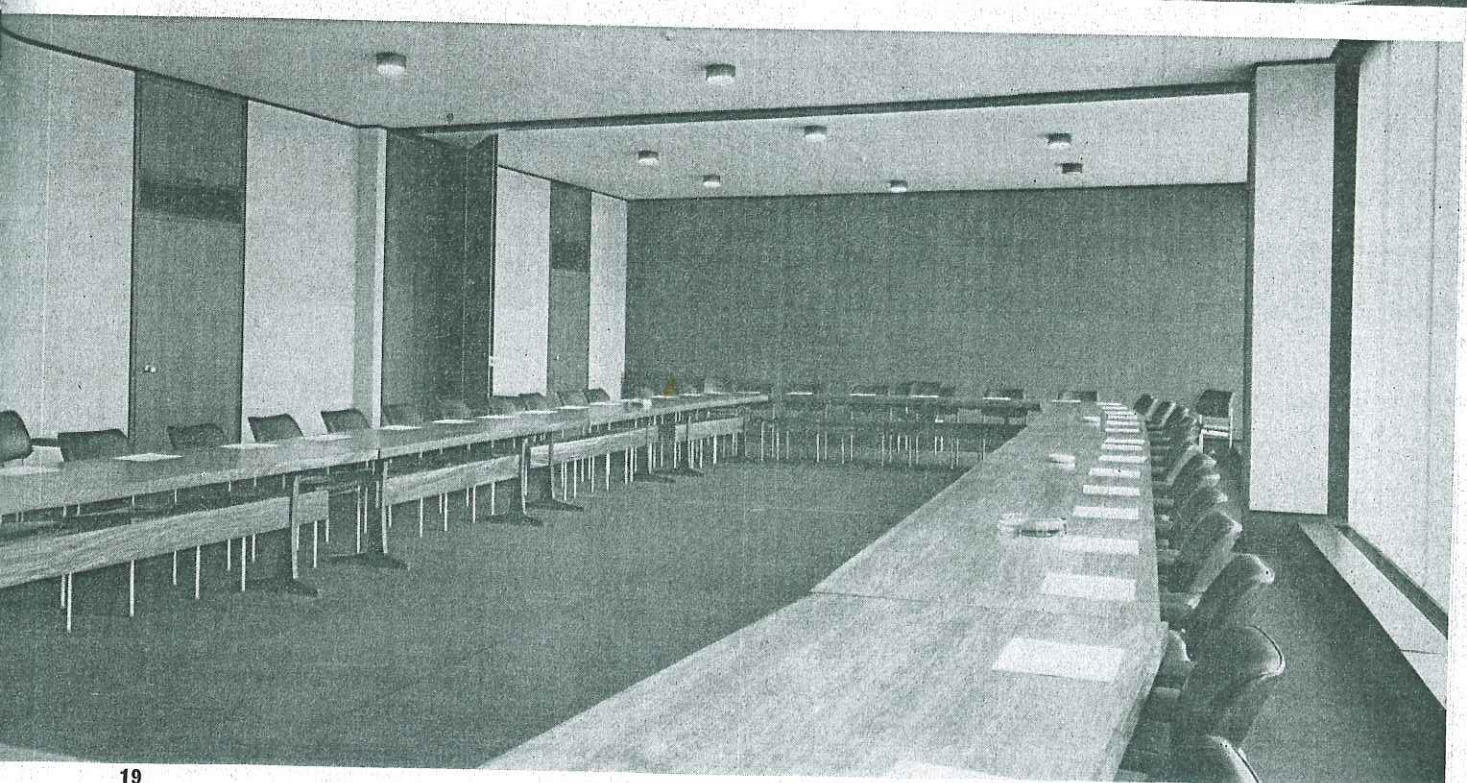
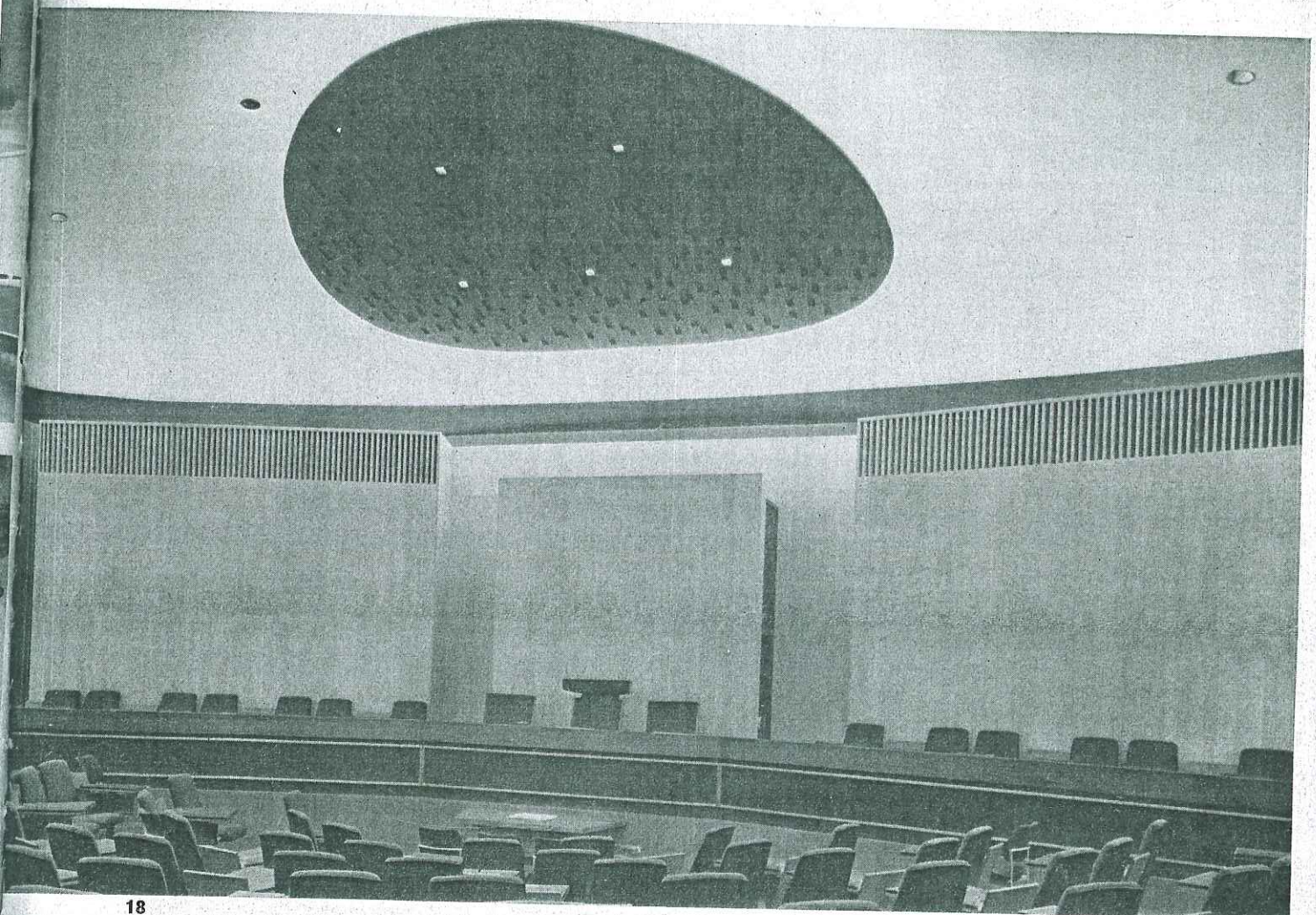
20

horizontal lines are curved in plan, and the four-square straight planes behind the single raised row of seats **18** introduce a conflict which is accentuated by the

cloud-like 'floating' canopy **19** Committee rooms. The problem of how to make two rooms into one, and not look like two-made-into-one, has not been overcome.

Throughout the building a uniform and effective quality has been achieved **20** The public have direct access to the rear of the council chamber up this

staircase from the huge covered entrance area. In such a position a glazed box confuses the view and, unless the glass is cleaned frequently, easily looks shabby



SERVICES

s d £

Sanitary fittings

7 0·314

Type	No of each type
13in × 12in white vitreous glazed fireclay drinking fountains	8
22in × 15in × 16in do urinals	17
30in × 16in × 12in do dilution sink	1
White vitreous glazed fireclay low level wc suites	81
Do high level wc suites	9
22in × 17in do table lavatory basins	6
18in × 13in lavatory basins	58
16in × 12in do cleaners' sinks	10
24in × 18in do Belfast sink	8
15in × 13in white vitreous glazed china lavatory basins	32
22in × 16in do	11
42in × 42in white vitreous glazed china slab urinals	1
White porcelain enamelled cast iron bath	1
Stainless steel sink units.	11

Waste, soil and overflow pipes

5½ 0·235

Preformed light gauge copper waste sets,
light gauge copper overflow, waste and
anti-siphonage pipework. Galvanised steel
soil pipework.

Cold water, hot water, heating, ventilation
and gas services

19 9½ 10·652

Copper distribution pipework on gravity
outflow principle with duplicate
pump sets to maintain circulation.

21 Assize hall, off which
are the two courts, left, and
the juvenile court separately
and more informally, right

22 One of two identical
courts. The general effect is
solid but not overpowering,
acoustics are good

23 Juvenile or magistrate's
court, similar but more
informal. It does not
have to provide the
numerous slight changes of
level demanded by
'grown-up' court protocol.
Here the court is arranged for
use by magistrates. For

juvenile use the dock and
witness stand are taken out
and a curtain drawn to
conceal the bench

24 There is little evidence
of old furniture being
transferred to the new
building, even as a
temporary measure.

Instead, many departments
have specially designed
furniture of a good simple
standard without gimmicks.

25 The architects'
department is the only one
with a degree of open
planning

office floors, control by motorised, modulatory
mixing valve in conjunction with outside
compensators.

Council chamber, committee rooms, assize and
magistrate courts and juvenile courtroom
fully air conditioned with temperature and
humidity control at 72°F and 40 per cent to
50 per cent relative humidity.

Hermetic centrifugal refrigeration machine,
150ton capacity, located in basement. Main air
handling plants adjacent to areas they serve.
Supply and extract ventilation to all internal
areas.

Warm air ventilation system to main office
areas as supplementary heating.

Total heat load: 9 800 000Btu/h.

Gas services to canteen and caretaker's flat.



21

Two 2 000gal and one 250gal galvanised
steel plate storage tanks.
Storage capacity of tanks: 2 250gal.
No of cold draw-off points: 130.
Two 200gal horizontal welded hot
water storage calorifiers. No of hot
draw-off points: 128. Three 4 000 000Btu/h
oil fired boilers with pressure jet
oil burners and two stage control
using 200sec viscosity fuel oil. Maximum
working pressure 50lb/sq in, flow and return
temperature 180°F and 160°F. Floor mounted
fuelway pattern circulating pumps in duplicate.
Automatic control system.
Low pressure accelerated hot water control
heating system serving convectors at perimeter of



23

No of gas outlets: 12.

Price includes builder's work.

s d £

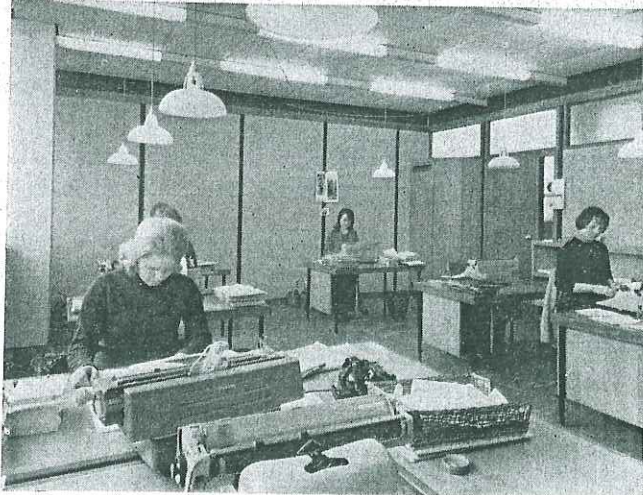
Electrical services

8 5 4·530

High tension mains supply to 750kVA
transformer with high tension metering
equipment from low tension terminals in
transformer chamber. Paper insulated lead
covered cables to low tension switchroom and
connected to main switchpanel. 1 000amp
main circuit breaker. Sub main distribution
cables to distribution boards, rising main bus-
bar systems and control panels in paper
insulated lead covered steel wire armoured,
mineral insulated copper sheathed and pvc
cables in conduit. 2 400amp three phase and



22



24

neutral rising main busbar systems with distribution units for lighting and socket outlets.

Lighting circuits generally mineral insulated copper sheathed cable in conduit above suspended ceiling. Small power and socket outlets in underfloor ducts system.

Lighting generally controlled by automatic photo electric cells with overriding switches for manual control in offices. Purpose-made fluorescent lighting to offices.

Fire alarm system comprising thermal rise detectors located in ceilings and manual 'break glass' contact system in corridors with alarm sirens, zoned and arranged on cascade system on seventeen zone indication panel with direct line to fire brigade headquarters.



25

s d £

Total no of lighting outlets: 4 000.

Total no of power outlets: 700.

Total electrical load: 450kVA.

Special services

3 1½ 1-693

Four passenger lifts: one 1 500lb, 300ft/min, 8 stops; 1 500lb, 300ft/min, 7 stops; 1 500lb, 200ft/min, 5 stops and 900lb, 300ft/min, 7 stops. Three service lifts: 300lb, 50ft/min, 3 stops; 450lb, 70ft/min, 3 stops and 300lb, 50ft/min, 3 stops.

4in wet and dry alternative sprinkler installation to basement car park with automatic alarm and frangible glass bulb type sprinkler heads.

Price includes builder's work.

Drainage

British Standard 5 per cent tested glazed vitrified clay and BS 1211 class B cast iron pipework. Brick manholes.

Total of services: 33s 9½d, £18·175

External works

Site clearance: £5 823.
Temporary right of way: £1 288.
Temporary access to fire brigade headquarters: £436.
Temporary fencing: £980.
Roads and car parks: £12 506.
Paths and paved areas: £9 261.
Boundary fencing, walling and entrance gates: £2 483.

Total per sq ft of floor area:

£1 374 762 (net cost excluding external works)

=128 10 69·338

213 300 sq ft (measured inside external walls)

COST COMMENT

Shrewsbury Shirehall joins the list of civic buildings analysed in the AJ: Scunthorpe (5.2.64), Carlisle (14.4.65), Nottingham (16.2.66), Southend Courthouse (1.6.66), Hemel Hempstead (30.6.66), Truro (20.7.66) and St Albans Courthouse (2.11.66). Shrewsbury, however, is by far the biggest scheme, with its gross cost and area approximately twice that of Truro. It comprises mainly office accommodation whose cost per sq ft is enhanced by the inclusion of council chamber with committee rooms and law courts—areas where special requirements in the way of fitted furniture, wall linings, double glazing, sound levels and comfort conditions controlled by temperature and humidity will be costed well over the average net cost of 128s 10d per sq ft. In addition the total net cost when expressed per sq ft is 'inflated' by the open areas at ground floor level which allow free access for pedestrian movement. These areas are properly excluded from the total floor area but the cost of foundations, frame, upper floor ceiling finish, lighting and so on contained within these open areas is included in net cost.

Separate analyses are not available for the council chamber and law courts, but Scunthorpe's council suite tendered in 1959 amounted to 157s 3d per sq ft including carpets and furniture, and Southend's law courts tendered at the same time as Shrewsbury amounted to 159s 7d per sq ft. Costs will, of course, vary with circumstances and these total costs per sq ft should be read with their analyses and comments if they are not to be used out of context.

Shrewsbury's contract was placed with the lowest tenderer in keen competition from a selected list of contractors. The broad distribution of costs is:

	s	d	Per cent
Preliminaries	10	0	8
Contingencies	2	6	2
Foundations	9	0	7
Structure	46	6	36
Furniture and fittings	27	1	21
Services	33	9	26
Total	128	10	100

Work below lowest floor finish includes the fairly extensive basement excavation at level 212.00 for the heating chamber, civil defence, car parking, stores and so on. Note how the sloping site has been utilised to provide ground level access to basement car parking.

Structural elements In-situ reinforced concrete was chosen for the structure, all of it constructed by the contractor. The buildings generally are designed on a 4ft x 4ft planning grid; storey heights vary from 10ft basement, 15ft ground floor to 11ft 4in all upper floors.

External walling to the offices is built outside the perimeter columns which are at 40ft centres. An off-centre row of internal columns gives spans of 16ft and 24ft between external grid lines. The beams between columns are integral with upper floor and roof slabs, and all these elements with the connecting staircases should be considered together.

The perimeter has a ratio of .62 to floor area, lower than one anticipates from a first glance at the complex form of the buildings. Solid external walling is used in the proportion of approximately 1:1 with windows, curtain walling and external doors. The external wall element embraces a restricted number of materials ranging from the Portland stone faced concrete walls of the council chamber to the 9in faced brickwork to the law courts. Note the large area of mosaic faced concrete walls to the offices at 230s 3d per sq yd.

The variety of materials which occurs in some elements is inevitable when a building contains such widely differing functions. It is perhaps epitomised in the internal doors element where twenty-seven different types of doors are analysed, most of them in relatively small quantities. The finishes all reflect the quality expected in civic buildings, and fittings include fitted furniture to council chamber and law courts.

Services The cost of the cold water, heating, ventilation and gas services are lumped together in the rather indigestible sum of 19s 9½d per sq ft floor area. The analysis, however, sets out in some detail the range of services provided.

In the electrical element at 8s 5d per sq ft note how the lighting generally is controlled by automatic photo electric cells, and in special services the sprinkler installation to the basement car park. The external works element gives lump sums against the main items of expenditure. The total spent around the buildings amounts to approximately 9 per cent of net cost.

In conclusion it must be said that the apparent contract period of just over three years is a little misleading. Owing to the late decision to incorporate the law courts into the contract it was agreed that work on their superstructure would not begin until the remaining buildings were completed. The main part of the contract was handed over in thirty months and the law courts nine months later.

CONTRACTORS

General: G. Percy Trentham Ltd. **Subcontractors and suppliers:** **Electrical installation:** Midlands Electricity Board. **Heating and ventilating installation:** G. N. Haden & Sons Ltd. **Piling:** H. D. Foundations Ltd. **Metal windows:** Crittall Manufacturing Co Ltd. **Fire detection and alarm system:** Associated Fire Alarms Ltd. **Sprinkler installation:** Mather & Platt Ltd. **Lifts:** Otis Elevator Co Ltd. **Refrigeration:** Pressed Steel Commercial Refrigeration Ltd. **Stone facings:** The Stone Firms Ltd. **Suspended ceilings:** Expanded Metal Co Ltd, Steel Bracketing & Lathing Ltd. **Adjustable steel shelving:** Slydang Ltd. **Mobile metal shelving:** Norwood Steel Equipment Ltd. **Fixed metal shelving:** Dexion Ltd. **Members' room fittings:** Insulation Equipments Ltd. **Automatic teamakers:** O. L. Smith & Co Ltd. **Storage furniture:** Chadwell Joinery Ltd. **Benching, council chamber furniture:** Esavian Ltd. **Fitted carpets:** W. H. Smout & Son Ltd. **Folding wall:** British Werno Ltd. **Roller shutter to canteen:** G. Brady & Co Ltd. **Collapsible gates and shutter doors:** Brookes & Co (1925) Ltd. **Overhead doors to garage blocks:** Westland Engineers Ltd. **Spring loaded roller blinds:** South Wales Blind Co Ltd. **Office tables:** E. S. A. Ltd. **Committee tables:** Reynolds Woodware Ltd. **Committee chairs:** Biddulph Industries Ltd. **Office chairs:** Neeta Ltd. **Swivel chairs:** Evertaut Ltd. **Easy chairs:** Race Contracts Ltd, Kingfisher Ltd. **Chief officers' chairs:** Guy Rogers Ltd. **Vertical plan file units:** M. B. C. (Office Systems) Ltd. **Filing cabinets:** Sankey-Sheldon Ltd. **Drawing office equipment:** J. Dale Ltd. **Draughtsmen's lamps:** Thousand & One Lamps Ltd. **Landscape gardening:** D. J. Jones. **Sanitary appliances:** Adamsez Ltd, Doulton Sanitary Potteries Ltd, Lilleshall Co Ltd, Shanks & Co Ltd.

CLERK OF WORKS: George Vaughan