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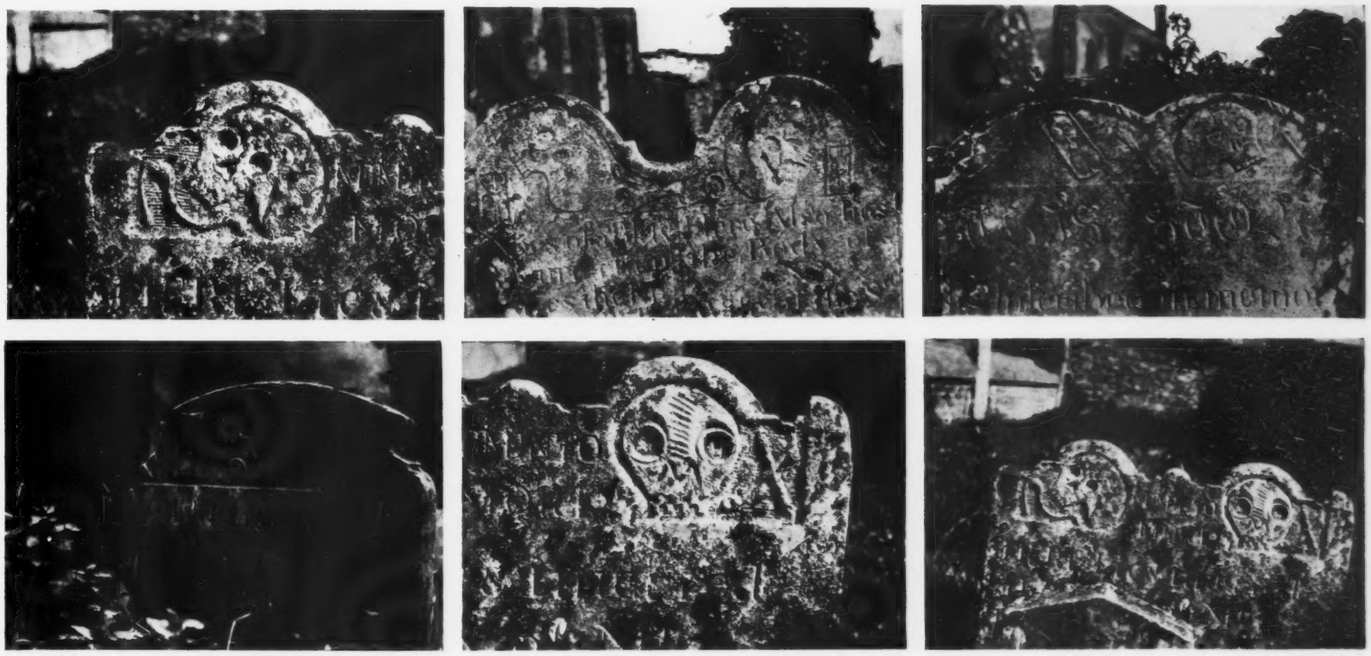
The effective use of natural materials for a building of a style that has generally been associated in the past with exclusively synthetic materials is illustrated by this detail of a recently completed house by Walter Gropius and Marcel Breuer. The house is at Cohasset, Massachusetts, close to the sea shore, and the local stone as used for rubble walling on the ground floor contrasts effectively with the vertical boarding used above. The detail shows the outside stair leading up to the service entrance, the kitchen being at first-floor level. This house, together with three other recent American houses, is illustrated on pages 189-200 of this issue.



The Skull combined with numerous natural and symbolic objects frequently appears along the ridge south of the Rother, as illustrated in the photographs above.

Early English sculpture from the eleventh to the fifteenth century has received adequate attention, but primitive sculpture of later periods, although scarce, shows a virile persistence of the early tradition. Some of the finest achievements in seventeenth and eighteenth century sculpture are to be found in the carved tombstones of East Sussex, West Kent and part of Surrey; an area where local stone and a tradition of craftsmanship have combined to provide a remarkable exploration of the significance of death.

Rude Forefathers

By Innes Hart

It is strange that, with the fashion there is for primitive art, so little notice is taken of our own primitives of the seventeenth and eighteenth centuries. The carved tombstones in our churchyards were the last spontaneous expression of that splendid decorative sense that made English embroideries and English illuminated manuscripts famous in the Middle Ages. Perhaps their subject matter is against them; present-day prudery concerns itself more with death than with sex. Or perhaps the mass of indifferent work that exists in many parts of the country discourages those who might otherwise be interested. It is possible to

visit scores of churchyards and see hundreds of tombstones without ever coming across anything except a perfunctory rendering of certain monotonous themes. It is a question of looking in the right place; and so far there is no guide to this subject.

Three things seem to be necessary before fine original work can be produced. There must be good local stone; there must be a fine tradition of craftsmanship and pattern-making; and here and there there must be individual craftsmen with a personal and inventive sense of beauty, or else with the rarer faculty of expressing thought and emotion in stone. All these things are found in the district made up by East Sussex, West Kent, and the little corner of Surrey between.

In many parts of the country the memorial slab inside the church (skilled work of an outsider, as a rule) has been too strong for any local tradition to survive in the churchyard, so that the decoration is commonplace, and the stone itself has lost its original monolithic quality, and has become a slab to take an inscription, a mere flat surface set upright in the grass, instead of being built into the wall of the church.

The ragstone of the Medway Valley and the strange green, grey and blackish sandstones of the Weald and Hastings beds, however, cannot be treated as slabs. Where they are used the churchyard memorials keep their dignity as stones set up to mark a certain spot. The inscription is of minor importance; the stone in position is what really matters.

B
HOULD
I STAND IERE
TO TESTIFY THAT
HERE LYETH THE
BODY OF THOMAS WALKR.

we read on a stone at Boughton Monchelsea. The date and his age follow, the date, 1688.

The quality of the grey-green sandstone itself gives a heavy, sleepy importance that is very impressive to the beautiful cherub and deep-eyed skull at Waldron (see top of page 187), to another

cherub, nearly in the round, at Sedlescombe (see bottom of same page), and to any number of thick, low, humpy stones, undecorated, or decorated sparingly with incised lines.

The loveliest of this type is a little double headstone at Catsfield, not far from Bexhill (see page 188). On each side, under the curve that makes the top of the stone, a profile is drawn with an incised line, facing downwards, with faint wrappings below the chin, that suggest a shroud. Above, fitting into the curve of the stone, there is a crescent moon. The two faces are turned in opposite directions; the weight of the rounded foreheads drags them downwards and apart in their profound and separate sleep. The inverted moon above suggests darkness and burial, but hints at the resurrection.

In the corner where Kent, Sussex and Surrey meet cherubs and flowers are the favourite subject matter There is a delightful gaiety about these stones; the faces, for the most part, are children's faces, each different, and each alive; the feathery wings are treated with rich, hard delicacy. Within the bounds of a strict tradition there is endless invention in pattern-making and in the grouping of accessories, flowers, draperies, trumpets, or rays of glory. How much is owed to tradition one realizes when there is a bold departure from it, as in the flying angel at Worth, that is represented at full length, instead of only the head and wings. The figure is merely amusing, the design and its relation to the stone seem to have gone to pieces. Here and there one finds a stone that shows deep feeling and originality as well as charm and pictorial invention.

Whatever the orthodox view, popular theology always has it that the souls of the beloved dead become angels. There is a stone at Lingfield commemorating two children, a brother and sister, decorated with a curious kind of double cherub. There is no attempt here at treating the faces realistically. They are just two ovals, with the bare essentials of human features drawn in. A tiny heart fills the space between the two foreheads.

At Worth there is a lovely stone that shows, instead of the usual child's face, a worn, tired and rather stern face, with closed eyes. It is a face expressive of suffering and death, but the feathered wings promise escape. The flowers on this stone are interesting. On one side is the traditional rose, conventionally treated, on the other a naturalistic spray of clematis.

Skulls in this district are not popular; but Worth has one of the most impressive (and least realistic) that I have ever seen: that reproduced immediately below.

Here the tradition of fine carving and pleasant design is carried right on into the nineteenth century.

Along the ridge south of the Rother the skull is the favourite element in design (see headpiece to this article), combined with enormous worms,

1

2

1, *a bearded head at Bethesden suggests a source for the convention of representing a beard with a double zig-zag line as at Biddenden,* 2, *dating from* 1718.

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3, *and* 4, *show how this convention was mistaken as a representation of teeth, and in* 5, *from Wrotham, the teeth are more accurately indicated by vertical lines.*

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The human face sometimes in relief, more often merely incised, is a common feature of the carved tombstones near the Kent and Sussex borders. A very early example, 5, from Faversham, dates from 1665 and commemorates a brother and sister. 2 and 4, examples in relief, are from Tonbridge and Lamberhurst. 6, from East Peckham, is dated 1682; later examples dated 1716 and 1721 are from Horsmonden, 1, and Bexhill, 3. A still further simplification is that of 7, from Lamberhurst, in which the space is filled by two concentric circles.

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"In the corner where Kent, Sussex and Surrey meet, cherubs and flowers are the favourite subject matter. There is a delightful gaiety about these stones; the faces, for the most part, are children's faces each different and each alive; the feathery wings are treated with rich hard delicacy. Within the bounds of a strict tradition there is endless invention in pattern-making and in the grouping of accessories, flowers, draperies, trumpets, or rays of glory." 1 and 2 are late examples from Lingfield; 3 and 4 from Worth, 5, from Lindfield dated 1799 and 6 and 7, from Worth and Cowden respectively.

arrows, uncurling fern-fronds, keys, hourglasses, and other odds and ends that can be used decoratively and symbolically. They are carved in sharp and rather low relief, in pale grey stone, that looks hard and needs direct sunlight to produce a good effect. The drawing is crude, but the design is often impressive, with its wilful, broken rhythms, the skulls being turned about and shown at different angles to one another. This style, so far as I know, is peculiar to a few neighbouring villages.

On the same kind of stone, and carved in similar technique, there is a very lovely design at Sedlescombe. The headstone is decorated with an indifferent example of the local skull, and bears the name of a married couple; the footstone has a beautiful pattern made by a pair of crossed arms. The fingers are slightly spread, there is a spray of foliage above the hands and a small cross below. The inscription on the footstone runs, " Thomas, their son, caused this . . ."

Most surprising of all are certain stones that have a roughly human silhouette, and are decorated with a human face. They are thickest in the Medway Valley round Maidstone, their material comes I think, from the Medway Valley quarries; but they are found as far North as Cliffe-at-Hooe, near the Thames Estuary, as far South as Bexhill, and from Faversham and Appledore, on the East, to Westerham, Hever and Waldron, on the West. Whether or not the human outline is intentional, it is very striking when one sees several stones in position. Certain churchyards seem to be crowded with cloaked figures, walking singly, or in pairs. (The epitaph quoted on page 185 from Boughton Monchelsea is from a stone of this type, though the unusually long inscription left no room for a face, the isolated capital B taking its place.)

The earliest of this type that I have come across is at Faversham, and dated 1665. It is a perfectly preserved double stone in memory of a little brother and sister. The faces, like those of the double cherub of Lingfield (of much later date), are clearly intended to represent, without attempting to portray, the two children. It would be impossible to draw the human face in a more abstract and generalized fashion.

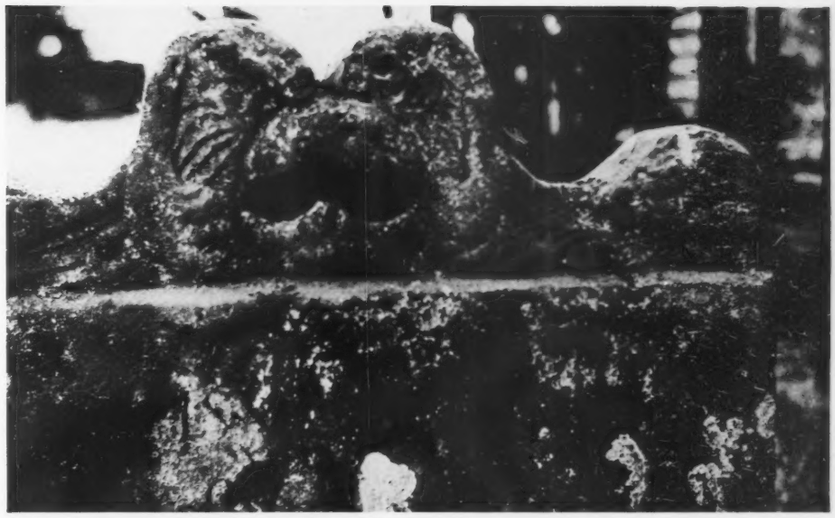
Even before the end of the seventeenth century one sees that the tradition is growing dim, and that the meaning of the stones is disappearing. There is constant re-interpretation. Sometimes the face is surrounded by rays, so that it suggests the rising sun, or the glorified soul. Two beautiful examples of this kind, dated 1696 and 1721 stand side by side in Bexhill churchyard, evidently imported from further north. Another rayed type, with an oval face and coarser, spikier rays, grows very common about 1715.

Here and there one finds stones where the face is reduced to the merest suggestion of features in low relief, a kind of humanizing of the stone in memory of the dead. There are impressive examples of this treatment at Lamberhurst, dating from the early eighteenth century, things that if one found them in a jungle one might take for primitive gods. At Tonbridge (1724) a sinister turn is given to simplification, a small dark stone is skilfully made important and alarming.

Also at Lamberhurst are two stones each decorated simply with a pair of concentric circles. There is something very satisfying about this design, with its suggestion of completeness and finality. It seems strange that no one else should ever have thought of using it.

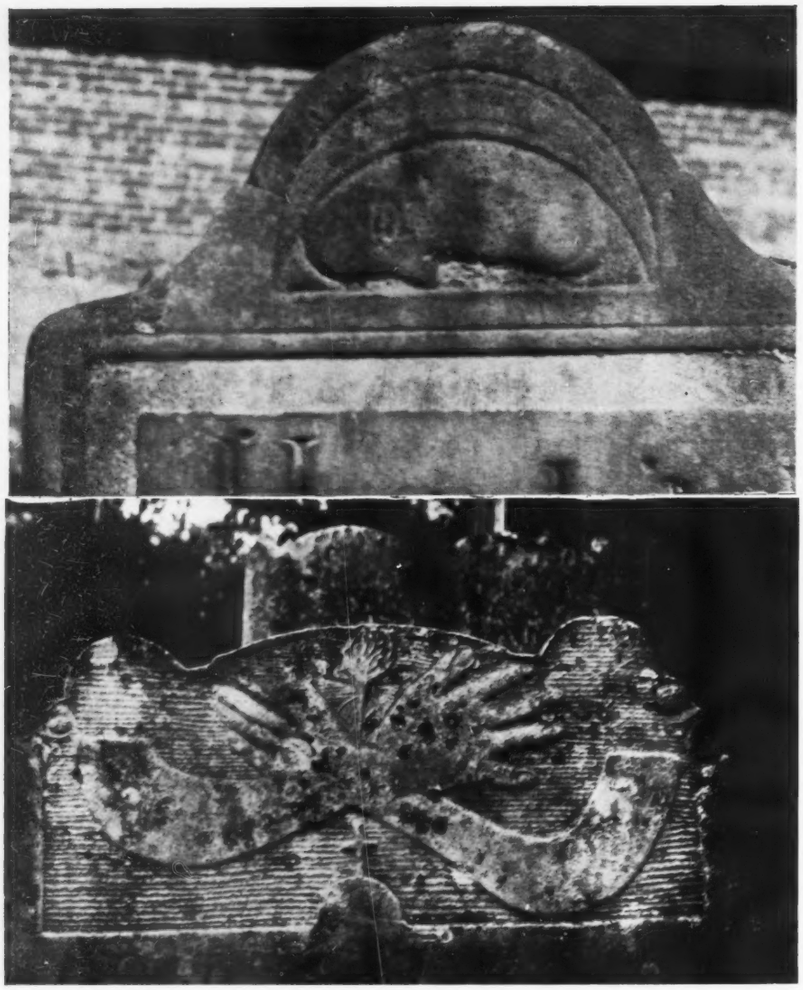
Bearded faces are not uncommon. The beard is represented by a double zigzag line. Comparison with some of the carved heads so common on the outside of Kentish churches (there is a good example at Bethesden) shows how the beard came to be represented that way, and helps to prove that masons of the seventeenth and eighteenth centuries were carrying on, in an impoverished form, the traditions of the Middle Ages.

This convention led to a curious misunderstanding. While the stones were fresh the little mouth above the beard must have been clearly visible; but often when the stone has begun to discolour, and moss and lichen to grow, the mouth is obscured, and the zigzag suggests a fantastic row of enormous teeth. This mistake was quite commonly made by later carvers of similar stones. Sometimes the



Two examples from Waldron which show different expressions of the ideas associated with death. Above, a deep-eyed skull and below, the weary face of a child with wings suggesting release and hope.

Monoliths from Oxted, Speldhurst and Sedlescombe.



Above, part of a double headstone at Catsfield, near Bexhill, with incised profiles facing downwards surmounted by a crescent moon whose lines admirably suggest the idea of repose in death. Below, a pair of crossed hands on the footstone of a grave at Sedlescombe.

mouth disappears, or is replaced by a meaningless row of dots, sometimes the zigzag is moved higher, and becomes a band across the lower part of the face. At Westerham, for instance, the beard is clearly re-interpreted as teeth, and the face has become a likeness of Death, the Devourer, more frightening than any skull, because it is so extraordinarily alive. At Wrotham there is a splendidly decorated stone where the carver has taken a step further. Realizing that human teeth are not pointed, like a tiger's, he has replaced the traditional zigzag by a set of vertical lines, and frankly given the face the shape of a skull.

Again, many early faces show part of the neck, or a little collar or beard as a small oblong projection below the rounded shape of the face. This form is repeated, often very crudely, especially during the early years of the eighteenth century, and becomes identical with the shape used elsewhere to represent the upper part of the skull, with the lower jaw missing, the beard, neck or collar becoming the front teeth.

Often it is impossible to tell whether face or skull is intended. One feels that the man who carved the simple formula did not know himself, but simply repeated the customary shape. One is inclined to call it a skull if there is no sign of a mouth; but what is one to think of the top part of a skull that ends in a double, or even a triple row of teeth?

Skill differs enormously in the carving of these faces. Some are mere crude scratchings; most, like the lettering of the inscriptions, are adequate and workmanlike; a few are really beautiful. In the more elaborate examples there is often incised decoration on the arms of the stones. A rose, a spiral, a spray of foliage and a pattern of crossed bones are the favourite designs. Sometimes a short vertical line is drawn from the top of the head, corresponding to an arrowhead below, as though the face were drawn about an arrowheaded axis. Sometimes bones are introduced, quite irrespective of the kind of face, as often with a rayed and smiling one as with the skull-like kind. These may be either crossed behind the head, so that only the four ends show, as four rounded knobs; or else below it, as in the traditional skull and cross-bones. But in the latter case it is evidently the cross that is essential, and not the bones, for we find, instead of bones in the same position, crossed shovel and pick, crossed arrows, or even an hour-glass, simplified to such an extent that it has become simply a rectangle containing a diagonal cross.

A small group, every one of them in Sussex, gives the face a wide forehead, narrow chin and open mouth. Of these the one at Bodiam almost suggests a crucifix; no possible degree of lack of skill could account for the bones being so utterly unlike bones. Sometimes, especially in Sussex, the face is transferred to a commonplace round-topped stone with no suggestion of the human silhouette. Also far commoner in Sussex than in Kent is the type where the head, neck and shoulders are drawn with one continuous curved line, instead of the face being treated as a detached oval or circle. A double stone at Brede of this type is one of the loveliest tombstones that I have seen anywhere. When sunlight brings out the pattern of its decorated border it has a gaiety and vividness that suggests the page of an illuminated manuscript. The curiously impressive mask in relief at Oxted is in a totally different tradition. There is one rather like it at Tandridge, a few miles away, and, so far as I know, no other anywhere.

As the eighteenth century went on the meaning of the stones and faces seems to have been lost. Sometimes wings were added, making an incongruous kind of cherub, even sometimes to a toothy grotesque face, showing that carving had become mere decoration.

From about 1715 onwards the profile is often given instead of the full face demanded by the shape of the stone. Some of the profiles have in themselves a kind of linear, flowing charm, but they always look wrong on the stone. The best that can be said of them is that certain peculiarities of form and proportion suggest that whoever carved the beautiful and unique Catsfield stone was influenced in his drawing of the profiles by some of the more ordinary kind.

About the middle of the eighteenth century the full face disappears. The latest that I know of are three striking and sinister examples at Westerham, all dated 1753, and probably all by the same hand.

Profiles, by then extremely common, are found for another twenty years or so, but they grow perfunctory and uninteresting. Finally they too disappear in favour of deathsheads, cherubs, serpent rings, hourglasses and elaborate pictorial scenes in relief, all the traditional themes that are common in the rest of the country.

The curiously human silhouette of some carved tombstones is illustrated in this photograph of Maidstone churchyard and in a further photograph of Hollingbourne on page 224 of this issue.

FOUR AMERICAN HOUSES

1

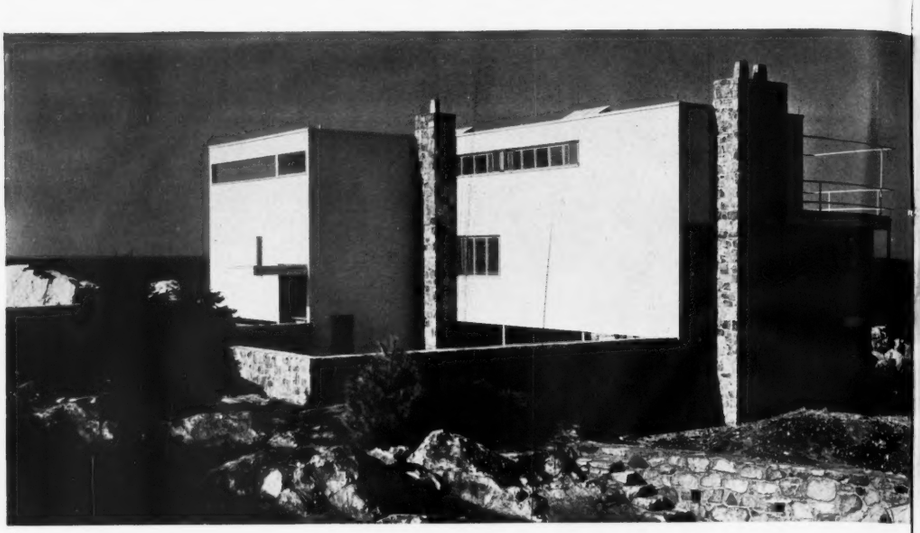
I HOUSE AT COHASSET, MASS

WALTER GROPIUS AND MARCEL BREUER, ARCHITECTS

2

3

This house, the first building to be completed by the Gropius-Breuer partnership, is situated right on the seashore, as the photograph, 1, above, shows. It is taken from the enclosed garden, looking beneath the southern wing of the house which raises the living-room on columns to first floor level. The shore is reached from the living-room verandah by the external staircase seen beyond. 2, the house from the south-west, showing the entrance on the left. 3, a general view from the shore.



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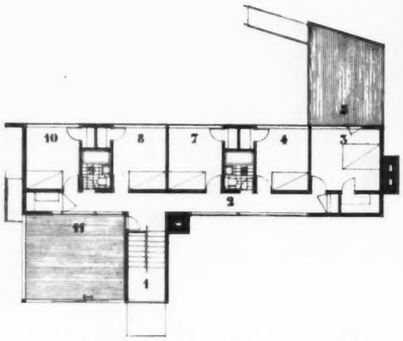
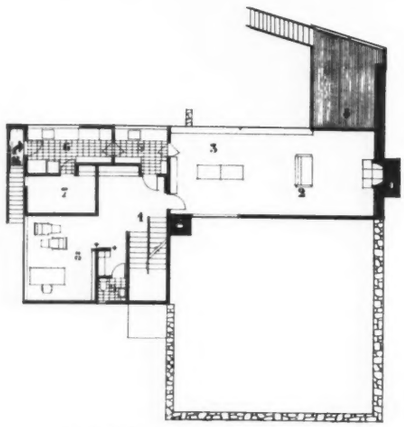


SECOND FLOOR PLAN

KEY TO PLAN

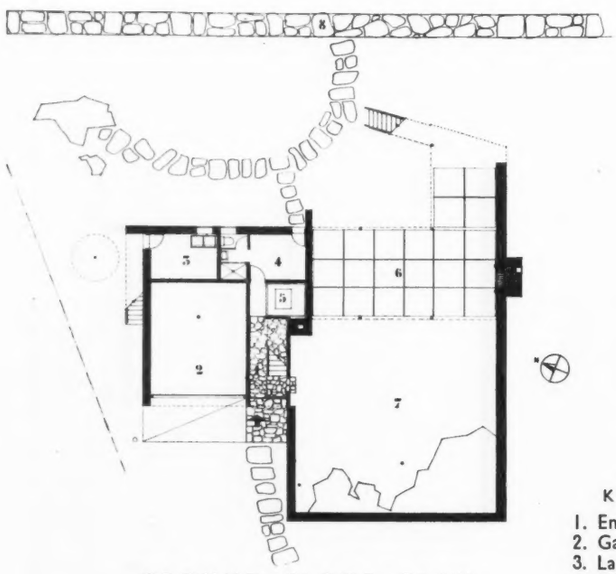
1. Stair Hall
2. Corridor
3. Principal Bedroom
4. Bedroom
5. Terrace
6. Bathroom
7. Bedroom
8. Bedroom
9. Bathroom
10. Bedroom
11. Terrace



FIRST FLOOR PLAN

KEY TO PLAN

1. Hall
2. Living-room
3. Dining Space
4. Verandah
5. Pantry
6. Kitchen
7. Maid's Room
8. Study
9. Lavatory



GROUND FLOOR PLAN

KEY TO PLAN

1. Entrance Hall
2. Garage
3. Laundry
4. Cloakroom
5. Heating
6. Terrace
7. Garden
8. Sea Wall

An interesting feature of the house is the use of the local stone in the form of rubble walling for the ground and some of the first floor walls and for the chimney-stacks. The stone wall forming the south end of the living-room wing is extended to provide a windscreen to the verandah. Construction is otherwise wood-framed, according to customary American practice, the walls being faced with painted boarding. Cast-iron columns are, however, used on the ground floor to allow greater spans. The principal living-rooms are at first-floor level, the ground floor being occupied by a garage, heating chamber and laundry. A small walled garden forms part of the ground floor plan, serving as an extension of the terrace beneath the living-room. In the original scheme the shape of the first floor plan was the same as that of the second floor, namely, one long block with the staircase projecting at right angles as an independent unit, but another room (the bedroom numbered 8) was subsequently added to fill up the angle, and the west wall carried up further to screen a second-floor terrace above it. This screen wall, with a horizontal aperture carrying on the line of the window of the top flight of stairs, is seen on the left in 4, a general view from the south-west which also shows the walled garden. 5, a detail of the entrance showing the effective use of vertical boarding in contrast to the rubble stone walling. See also the frontispiece to this issue.

I HOUSE AT COHASSET, MASS

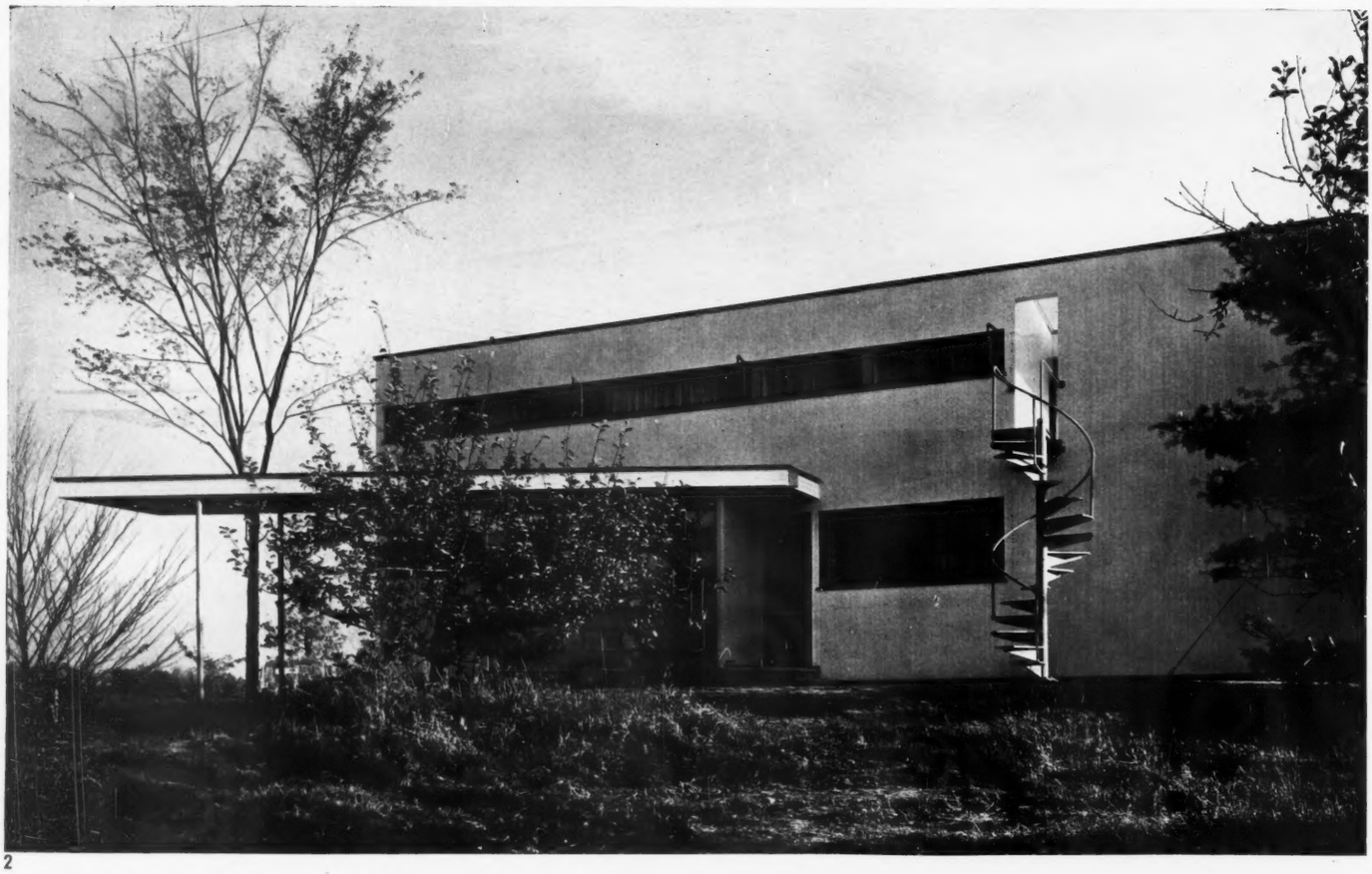
5

2 HOUSE AT LINCOLN, MASS

WALTER GROPIUS AND MARCEL BREUER, ARCHITECTS

Right, an elevational view of the south (or garden) side.

1



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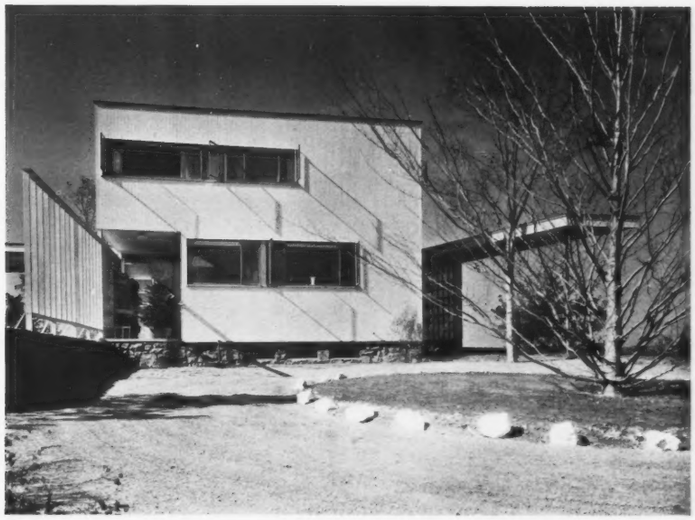

4

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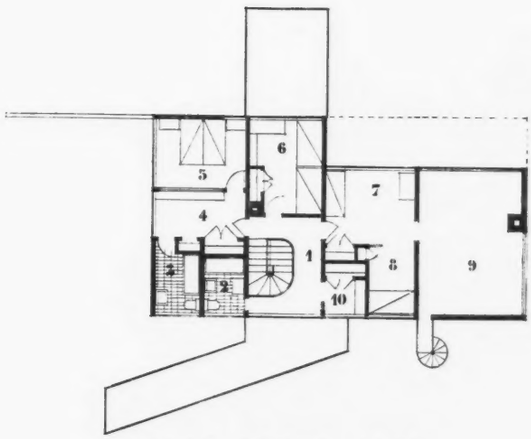
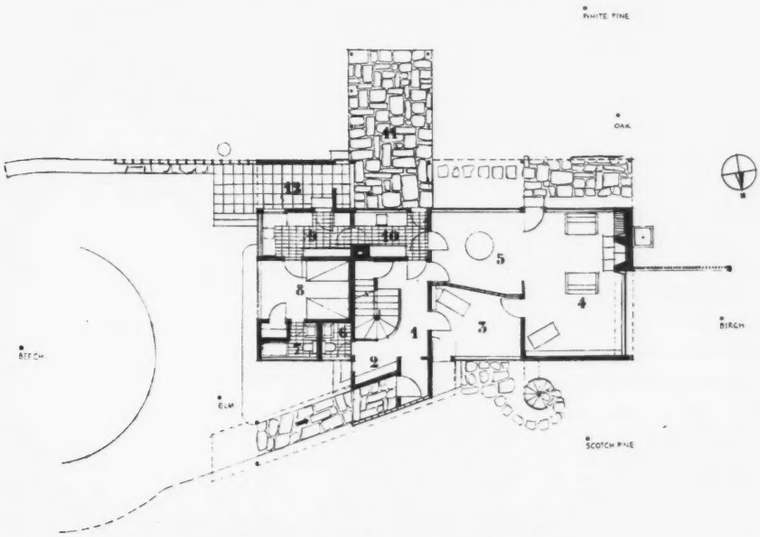
This house has been designed and built for Dr. Gropius's own occupation. Like nearly all New England houses it is of wood frame construction, the external wall surface being narrow wood boarding, painted, but there is also moderate structural use of cast-iron columns, notably to support the entrance and garden terrace canopies. 2, the north (or entrance) side showing the narrow canopy marking the line of the entrance approach and the spiral staircase giving direct access to the first floor terrace, which on this side is screened from sight and protected from the wind by a solid wall. 3, from the south-east. On the south side the first floor terrace is open but has a projecting pergola roof to give partial shade. The large front member of this roof is carefully placed so that it shades the ground floor living-room window from the high summer sun, but lets sunlight into the living-room when the southern sun is lower in winter. 4, from the service courtyard on the east side, which is screened from the garden by a trellis. 5 and 6, night views of the south-west corner and the entrance elevation.



FIRST FLOOR PLAN

KEY TO FIRST FLOOR

1. Hall
2. Bathroom
3. Bathroom
4. Dressing-room
5. Principal Bedroom
6. Guest Room
7. Child's Room
8. Bed Alcove
9. Roof Terrace
10. Sewing-room



GROUND FLOOR PLAN

KEY TO GROUND FLOOR

1. Entrance Hall
2. Cloakroom
3. Study
4. Living-room
5. Dining-room
6. Lavatory
7. Maid's Bath
8. Maid's Room
9. Kitchen
10. Pantry
11. Terrace
12. Service Porch

6

2 HOUSE AT LINCOLN, MASS

7

8

9

7, the staircase, with its balustrade wall of polished metal rods, taken from immediately within the main entrance door. 8, the ground floor study, looking towards the open door of the living-room. One side of the room is entirely composed of glass bricks, forming a partition whose centre portion runs at an angle to the other walls (see plan on previous page). The opposite side of the room has a built-in desk fitment. 9, the double dressing-table fitment in the dressing-room (numbered 4 on the first floor plan). Above it is a glass panel through which the principal bedroom can be seen, a mirror being fixed to the surface of the panel.

2 HOUSE AT LINCOLN, MASS

3 HOUSE AT FISHER'S ISLAND

RICHARD NEUTRA, ARCHITECT
P. PFISTERER, ASSOCIATE

1

Situated on an island in the Atlantic Ocean about 20 miles off the Connecticut shore this house commands a magnificent view westward over the bay and its little islets as well as over the ocean, north and eastward. It occupies the highest north-southerly ridge of the site, and is planned on three floors, of which the lower two have level exits on to the grounds, while the upper floor opens on to terraces and balconies. A large porte cochère east of the lobby receives the curved entrance drive. According to the requirement of the owners, the principal room is the music room, in which social functions also take place. This room is entered from the stair lobby, and opens by wide sliding anodized aluminium doors on to a screened porch overlooking the terrace and lawn. The family living-rooms likewise face west. The dining-room with its terrace and the study face the east, surrounding a children's art gallery. The largest guest-room is also on this level. The upper storey is reached by the main stair rising from the lobby over the guest lavatory and by a rear stairway connecting the service and children's quarters. The principal first-floor suite consists of two bedrooms and two elaborate dressing and bathrooms, all on the southerly portion of the floor plan. Guest, tutors', children's, nurse's room with several adjacent bathrooms and covered and screened westerly sleeping porches extend along the glazed east gallery. The rear stairway continues into the under storey with a large playroom equipped for the showing of cinema films, the living quarters of butler and chauffeur, the laundry and ironing room, furnace,

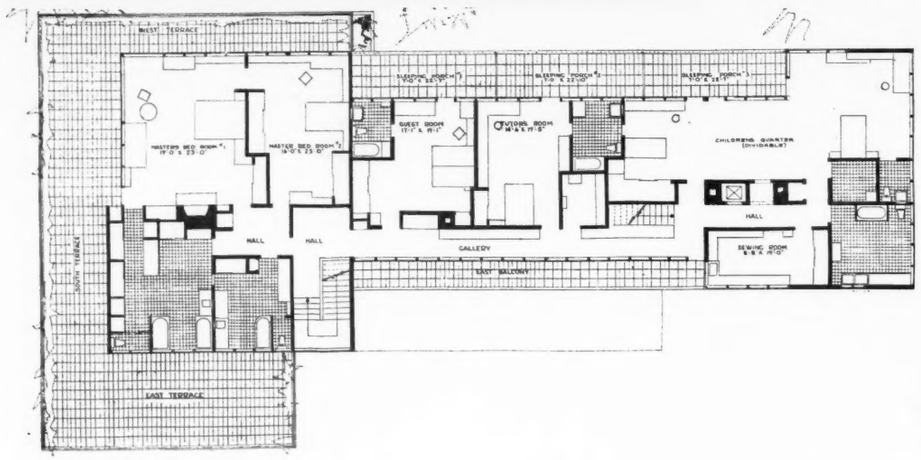
2

utility and storage room. The laundry yard connecting with the washroom is placed on the roof of the garage, which holds three cars and chauffeur's work bench and is closed by radio controlled overhead doors. The structural system consists of a unit type standardized steel and timber frame with exposed structural members in anodized aluminium. Heat absorbing plate-glass is installed in large westerly areas exposed to the glare of ocean sunsets. 1, the house from the east with the dining-room terrace in the centre and showing in the foreground the natural rocky landscape in which the house is set. 2, a perspective sketch from the west.

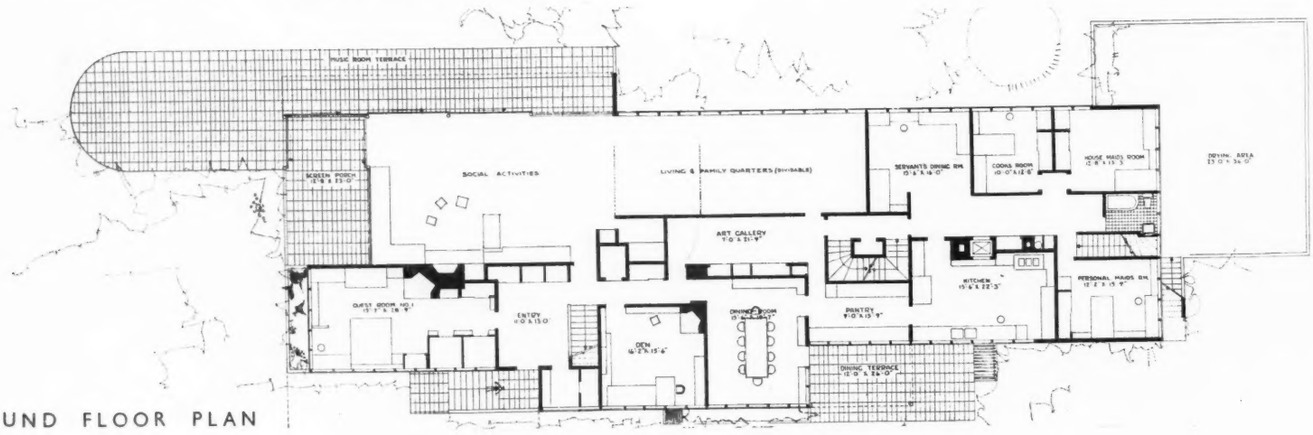
3

3 HOUSE AT FISHER'S ISLAND

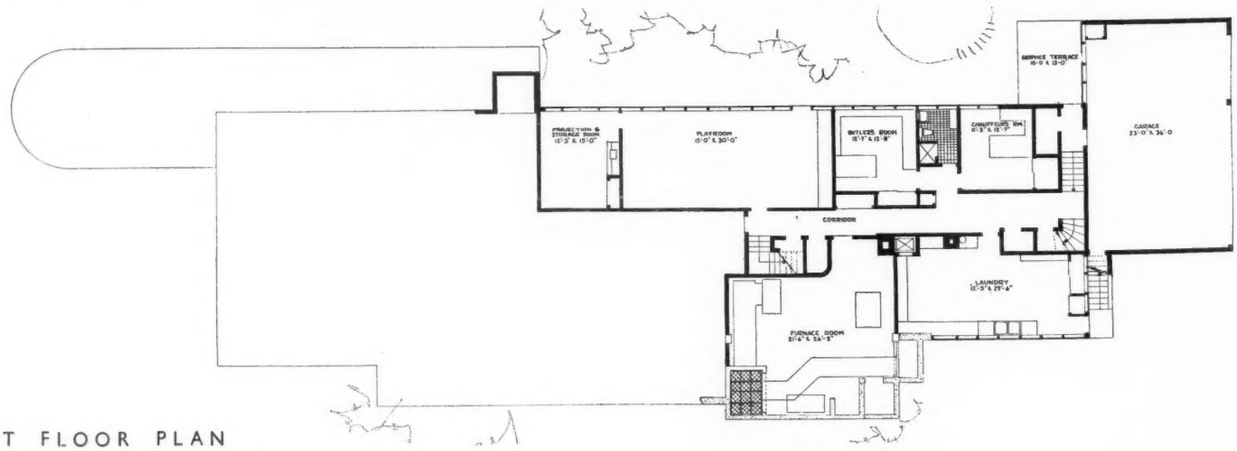
3, the house from the east showing the long range of the gallery windows. The external walls are cypress boarding, aluminium painted.



FIRST FLOOR PLAN



GROUND FLOOR PLAN



BASEMENT FLOOR PLAN

4 HOUSE AT TUXEDO PARK, N.Y.

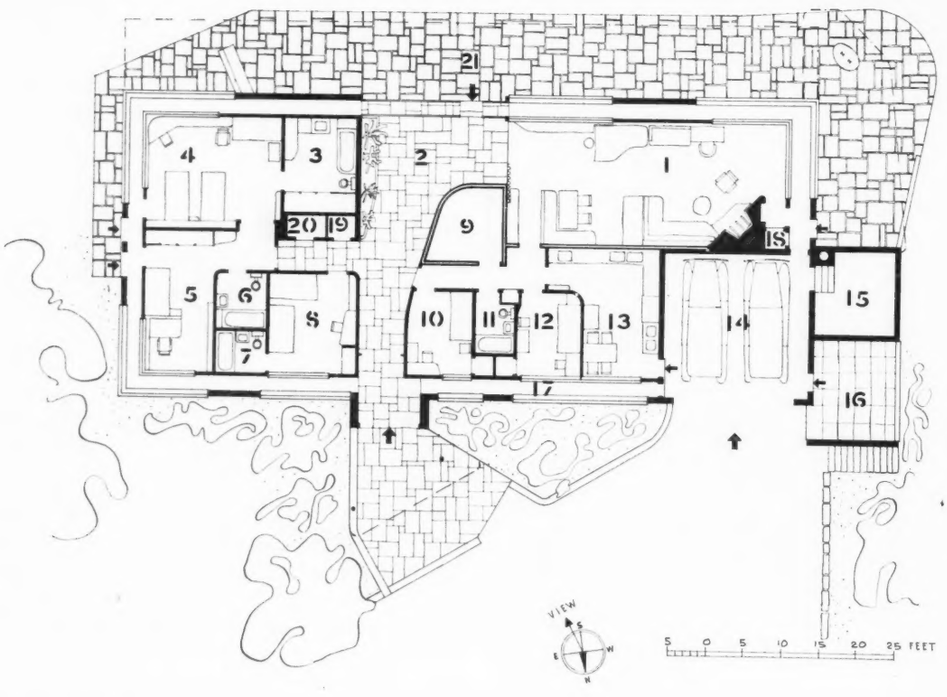
WILLIAM LESCAZE, ARCHITECT

1

2

This single-storey house is of remarkable, and probably unique, design, being planned with double exterior walls and roof, so that in effect it consists of one house built entirely within another structure. The object of this arrangement is to regulate the interior temperature and humidity as described on the next page, and to enable the owner, Mr. Alfred Loomis, to conduct various experiments in heating and cooling methods over a longer period than laboratory research allows and in ordinary living conditions. He has worked out this experimental design in conjunction with the architect and Mr. Leslie J. Hart, consulting engineer. The general construction of the house is a combination of brick wall with light-section metal frame. 1, from the south-west, showing the corner of the living-room and the terrace canopy supported on converging steel struts. 2, from the south-east, showing the garden terrace in front of the living-room windows, overlooking the garden and the view.

3



KEY TO PLAN

1. Living-room
2. Conservatory
3. Bathroom
4. Principal Bedroom
5. Dressing-room
6. Bathroom
7. Guests' Bathroom
8. Guests' Bedroom
9. Air Conditioning Room
10. Maid's Bedroom
11. Maid's Bathroom
12. Maid's Bedroom
13. Kitchen
14. Garage
15. Boiler-room
16. Porch
17. Air-space
18. Wood Storage
19. Coat Cupboard
20. Linen Cupboard
21. Terrace

This is a one-storey building with double exterior walls and ceiling space. The space between the double walls is approximately two feet wide. The shell space (that is, the space between inner and outer walls) can be heated independently of the inner house, or if no heat is added it will come to a temperature where the heat loss from the inner walls to the shell will equal the losses through the outside shell walls. Due to the fact that a considerable percentage of the side walls are glass, the temperature of shell space, if no heat is

added, will be only slightly less than halfway between the outdoors and indoors. It is therefore possible to maintain a high humidity within the inner house without condensation on the glass areas, and it is one of the objects of the experiment to investigate the effect of living in such an atmosphere during the winter season. The house is equipped with a special air-conditioning system consisting of an all-year unit for the inner house and a heating unit for the shell space. The interior unit consists of a motor-driven fan, water coils, humidifier sprays and air filters. The room in which the unit is located is almost directly in the centre of the house and acts as a plenum chamber in which the return air and fresh air are mixed. Separate supply ducts lead to each room and there are thermostatically controlled mixing dampers in the branch to each room, the dampers being operated by double synchronous motors controlled by room thermostats. For the shell there is a unit consisting of a motor-driven fan, water coils and air filter. This unit takes air from the ceiling space, heats it and discharges it into the shell space. Registers in the ceiling of the shell space permit the re-entering of the air into the ceiling space and thus back to the unit. In addition to the above two fan units, direct radiators have been provided in the garage and kitchen. The two units and the direct radiators are connected by flow and return piping to an oil-burning system water-heater and water-cooler, which in turn are connected to a motor-driven refrigerating machine. Circulation of the warmed or chilled water is maintained by a centrifugal pump. With this arrangement the same piping and coils serve for both summer cooling and winter heating, although it is intended that only the inner house unit will be used for cooling. Owing to the double wall construction the inner house is extremely quiet. Wind and rain are barely audible within the building. It was therefore necessary to take every precaution to reduce noises from the mechanical equipment to a minimum. All duct work is lined with sound deadening sheets and the ducts are insulated on the exterior with mineral wool. The chamber housing the inner conditioner unit has the stud space filled with glass wool and is lined with cork.

3, a view taken on the threshold of the window giving on to the terrace from the living-room, clearly showing the double wall construction. On the right is a portion of the living-room. 4, 5 and 6, three views inside the conservatory which occupies the centre of the garden side of the house. 4 and 5 show the wide sliding windows opening on to the terrace, and 6 shows the other view, down the tapering entrance hall towards the front door.

4

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6

4 HOUSE AT TUXEDO PARK, N.Y.

7

8

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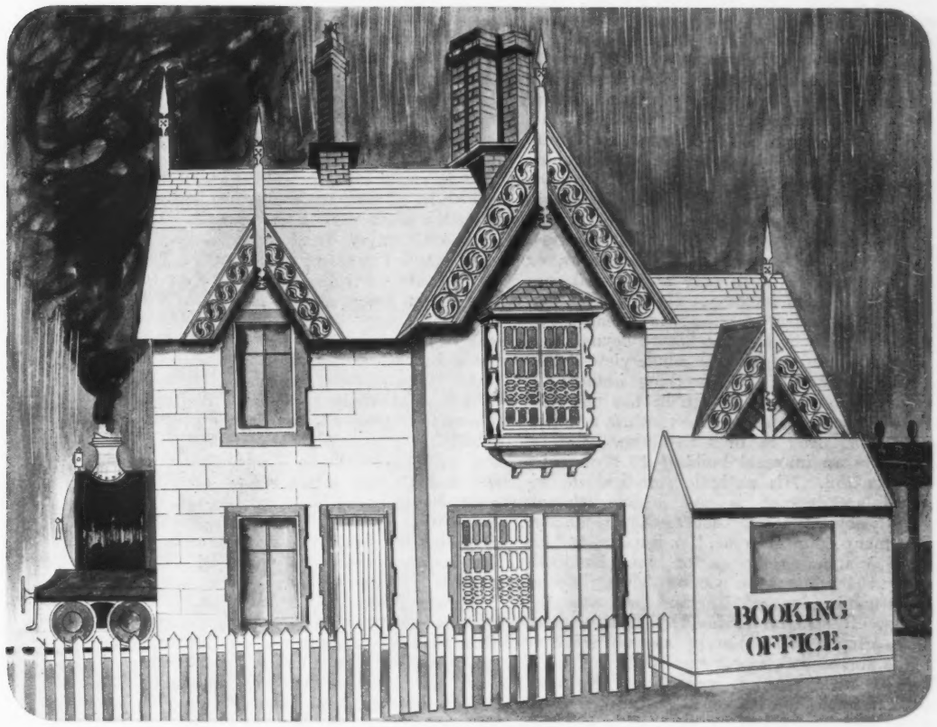
7, looking out from the sheltered sun-porch on the west side of the house (numbered 16 on the plan) showing the distant view. 8, the corner of the living-room, with the V-shaped struts of the canopy outside. This photograph shows the effect of looking through the two windows of the inner and outer walls. 9, the principal bedroom (numbered 4 on the plan), showing the corner window and the built-in furniture in front of it. 10, the bathroom, leading off the principal bedroom and lighted through a circular glass panel in the ceiling. 11, the kitchen.

THE SEEING EYE

or How to Like Everything



Right, the railway station at Whittington, Salop.

By John Betjeman

illustrations by John Piper

A TRAIN waits for a long time at Whittington Station, Salop. Many people in their compartments do not use their eyes at all. Though they have the gift of sight, they might as well be blind. One drums with his fingers on an attaché case, another whistles and taps his feet on the floor, a woman stares straight across at the Photochrome view of Bala until it swims out of focus: she dare not shift her eyes in case she should seem to be getting off with one of the men in the carriage. And the fourth member of this unwilling group may be you or me, not necessarily a reader of THE ARCHITECTURAL REVIEW, but someone who takes a look at buildings. I think I am putting the proportion rather high. Suppose there were four a side in this compartment one might say, fairly safely, that one out of the eight present notices his surroundings. Only one out of 300 will be in the least critical of what he sees.

The train still waits at the Station. The barge boards hang over the booking office; the geraniums flourish against the stucco walls. There are several ways of dealing with the sight. To the small number that look out of the window with any perception, I will give names, in order to help us later on.

Mr. Squinch is a clergyman of the Church of England. He knows architecture as far as Perp and he regards all later than the earliest Perp as debased. The station building means nothing to him. He sees it for a moment, realizes that it is not Norm, Trans, E.E., Dec or Perp nor even a correct revival of one of those styles, so he dismisses it from his mind. Such a building might as well not exist. He thinks of his own church, of the remarkable squint he was able to reveal by clearing away the ugly old eighteenth century three-decker pulpit, of the pale green covers of the English hymnal, the unstained oak of the new choir stalls, the powder blue of the altar hangings and the mats for the kneelers, and here and there a touch of gold on angel and poppyhead to give a luxuriance to the general scene. And since the train has been waiting at the station for half an hour, and since it is four hours since he had breakfast, he is in the mind for visions. He sees England once again as a righte fayre launde with hauberks and crossbows, banners and banner poles, strong castles and stately churches (where the Faith is fully taught and practised) rising above the apple trees, contented peasants tilling the long fields with oxen and knights who go pricking by. The whole thing is in very good taste, subdued colours and of sound craftsmanship. Small wonder then, that he does not see the station for what it is and turns the chimney pots in the background into the points of knightly lances, and the blue smoke makes an exterior incense for a cathedral, not of barge board and stucco, but of goodly carven stone.

Mr. Quantity is a more practical man. He is an artist, yes, but primarily a professional man. Indeed he is an architect. He is catholic in his tastes with a small "c." He disapproves of vulgarity and is a member of the C.P.R.E. and has been able to give that body sound, and sometimes indirectly lucrative, advice. His knowledge of architecture is wide but sketchy and he is sounder on the Orders than he is on Gothic. Nevertheless he was able to make a nice little job in unstained oak of Mr. Squinch's choir stalls: a man in his office ran up some quite decent panelling in a late Dec manner. Where are we waiting now? Whittington. Ah, there's the booking office. A vulgar piece of work, probably by some provincial man. Why didn't he use the local stone? What *is* the local stone? All the surrounding houses are red brick. A pity. He was continually advising the use of local stone so as to harmonize with the neighbourhood. A cottage should look as though it grew out of the earth. None of this modernism is necessary. A sense of what is appropriate, restrained and tasteful, be the style demanded Gothic, Queen Anne or even a few years later. Mr. Quantity has had no lunch and he permits himself to replan Whittington as he sits in the train looking out. That station could be trimmed of its fussy detail fairly inexpensively. With a little skill it could be made to look quite passably neo-Renaissance and with a little pale green paint and some Empire timber inside, the interior could be brought up to date. These

houses beyond will have to go of course. Only two storeys high and in these days too ! A few six storey blocks of flats in a traditional style and in warm brick would house most of the people and the rest could be arranged in plain semi-detached cottages among hawthorn trees around a good sized recreation ground. The cottages might be of local stone. He would like to submit a scheme to the Council, if only he weren't so busy with this A.R.P. work.

Young Camshaft is quite another type. For years he has read periodicals with no capital letters, and looked at photographs bled out beyond the margin. Le Corbusier and Tecton are as familiar to him as piscinae are to Squinch and the Brothers Adam to Quantity. He has studied the linear city, town planning, national planning. He has attended lectures at the London School of Economics. He has learned to dispense with æsthetic considerations, or rather to regard them only as a moral consequence of right building. He sees Whittington Station as bad planning, the wrong use of materials, and he sees the houses beyond as a moral stigma. In fact the whole view strikes him as immoral, and anything immoral is bound to be ugly. Though he has not read Ruskin, young Camshaft has much in common with him. And he does not allow what he considers an immoral building to strike him as beautiful. His æsthetic standard in immoral architecture is not unlike, though slightly higher than, that of Mr. Quantity. It is many hours since he, too, last ate, and his mind is spinning fancies for him. He looks beyond the carriage window view, beyond Whittington, beyond England and sees the world. It is a brotherhood of Man, a place of soaring crystal towers among spacious parks dotted with motor cars while the sky is flecked with noiseless aeroplanes. Switches work miracles of labour saving; men have wings and float about to Mars. The world is one enlightened Garden City a hundred storeys high. Materials are used to their fullest extent, minds spread to their widest; cleanliness, bodily fitness and enlightened literature walk hand in hand. Young Camshaft sees such a brotherhood of precision, technical and mental efficiency as is otherwise only dreamed of by Mr. Wells. In this world Whittington Station can play no part. It is as remote as from the world of Mr. Squinch.

More practical than young Camshaft or Mr. Squinch, more sensitive than Mr. Quantity is Mr. Piper, the artist whose illustrations accompany this text. For Mr. Piper knows Whittington Station is there and has understood the mind of its architect and the age which built it. He has not been troubled by the ancient, by financial advisability, by a future social order. Here is Whittington Station; it has barge boards painted white : warm yellow stucco walls and white glazing bars to the windows and a touch of Tudor about the chimney stacks.

Mr. Piper, being an artist and a practical man, has got out of the train to stretch his legs and has enquired of the guard how long the train is likely to be held up. He has found the time to walk round and select the best view of the station building.

We see in Whittington Station the heyday of steam architecture. Such a building as this might have come straight from Bassett Lowke and the locomotive puffs as proudly away as did that on the cover of *The Wonder Book of Railways*. When the line to Oswestry was first opened, people went to church on Sunday, manor houses rose from calceolaria beds and the local printer had an assortment of Georgian types : and the model branch line station in the district was Whittington " where are the remarkable ruins of Whittington Castle, said to have been the birthplace and residence of Fitz-Gwarin, one of the barons who opposed King John. The village is picturesquely situated."* As though aware of Fitz-Gwarin and the picturesque nature of the village, the architect of the station adopted the Tudor style and to keep it neat and up-to-date he cased the building in stucco. Mr. Piper has set again on paper the happy, hopeful mind of the architect and we see in our literary way the scene of Walter Evson's arrival at Fuzby-le-Mud station, where poor Kenrick met him, in *St. Winifred's* " when the train uttered a despairing scream, and reached a station which the porter announced as Fuzby-le-Mud. Walter jumped down, and his hand was instantly seized by Kenrick's with a warm and affectionate grasp.

" ' So you're really here, Walter, I can hardly believe it. I half repent having brought you to such a place; but I was *so* dull.'

' I shall enjoy it exceedingly, Ken, with you. Shall I give my portmanteau to some man to take up to the village ? '

' Oh no; here's a—well, I may as well call it a *cart* at once—to take it up in. The curate lent it me, and he calls it a pony carriage; but it is, you see, nothing more or less than a cart. I hope you won't be ashamed to ride in it.'

' I should think not,' said Walter gaily, mounting into the curious little oblong wooden vehicle.

. . . Unknown to Walter, Jones was in the train; and, after a long stare at the pony-chaise, had flung himself bank into his seat to indulge in a loud guffaw, and in anticipating the malicious amusement he should feel in retailing at St. Winifred's the description of Kenrick's horse and carriage."

Horse, Kenrick, carriage, Walter, social stigmas and even Jones are gone. Only the little railway station remains to tell us of the age. And Mr. Piper has resurrected it.

In all these pictures is illustrated the architecture which we have all seen, but not bothered about—the doctor's italianate house in the suburb, the model dwelling on the edge of the village, the Gothic gate-lodge, the Baptist chapel, the decaying Victorian terrace in the Spa where, as the old ladies and the gas go out, the flats, the orange paper and the electric light come in. There are many clever pasticheurs and less clever ones who can recreate Victorian Regency or eighteenth century life in a far from Wardour Street manner. But this is comparatively easy to do. Mr. Piper has turned the neglected styles into something beautiful and peculiar to himself. Instead of despairing of what we have always been told is ugly and meretricious, he has accepted it at its façade value and brought it to life. He has made us look a second time, without any sense of satire, moral indignation or æsthetic horror. He has done the job of an artist.

For goodness knows how long now we shall be stopping at Junctions for hours on end, billetted in decayed Corn Exchanges, gazing out of a workless office on to the backyard of a Co-operative Stores. We will have to go further than good taste, Norm and Perp, Queen Anne and the Orders and genuine modern, if we are to retain our senses. By following Mr. Piper, and by taking scenery as it is and not what we have been told it ought to be, we will be getting all the good we can out of the war. Perhaps at the end of it, those of us who are alive will emerge with a deep sense of jazz-modern and a genuine desire to preserve the bogus Tudor of the new industrialism. I hope so. In any other direction madness lies.

I have appended as captions to each of these illustrations the reactions of Mr. Squinch, Mr. Quantity, Young Camshaft and Mr. Piper. They may serve as first steps in how to become fond of everything.

* The Official Tourists' Picturesque Guide to the London & North Western Railway. Edited by G. Shaw (c. 1860).

Villa near Wantage

Mr. SQUINCH : It certainly reminds one of a Rectory and is no doubt solidly built. But I am not really interested in that kind of thing. There is a fine Trans arcade in Wantage Church.

Mr. QUANTITY, F.R.I.B.A. : Hideous. Worse than modern speculation. With a little money spent it could be turned into quite a decent job. Remove the ridge tiles; take off that needless barge-boarding; square off the pointed windows and wash the whole thing over the colour of the local stone and it would look quite well. Put in electric light. There should be a sundial of tasteful design in place of that ridiculous plant in the garden.

YOUNG CAMSHAFT : Immoral and beneath contempt. It stands for all the pretentiousness of the bourgeoisie.

Mr. PIPER : The result of careful selection from builders' catalogues. Built probably as a result of conversations on the part of the builder with Mr. G. E. Street when he was restoring Wantage Church. An original design and the exaggerated detail gives emphasis to the high points. Inside, plenty to eat for tea, japanese fans, a yellow-keyed piano, beautiful-leaved plants and a regular attendance at a place of worship.

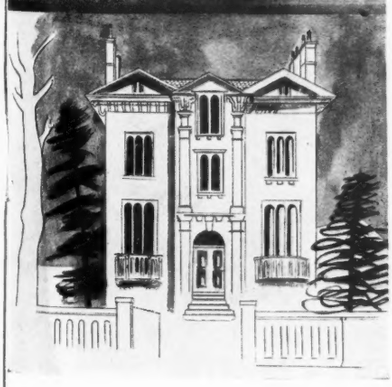
Italianate Houses at Reading

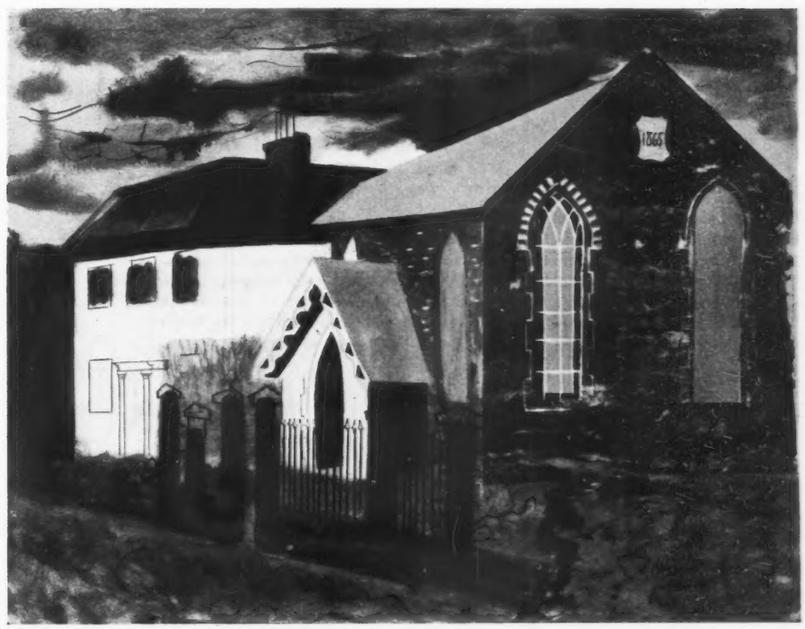
Mr. SQUINCH : Pagan. Reading Abbey is interesting.

Mr. QUANTITY, F.R.I.B.A. : Too late. These houses have lost the simple dignity and good taste of the Queen Anne and Regency Periods and they have not the daring and practical utility of the modern.

YOUNG CAMSHAFT : Useless, except as social clubs, now-a-days. Cumbersome planning. Vulgar use of materials.

Mr. PIPER : It is their uselessness I like and their over-richness and their proportion all their own. These villas are the result of lithographs of Italy. They illustrate Sherlock Holmes, for it was in a house like these that the Norwood Builder lived. Verandahs which are never sat in; gas light in stained glass halls; under servants; murders in the basement; death on the first floor; plaster ceilings that the uninitiated might think were seventeenth century, and a great plaster chrysanthemum for the gasolier. Geraniums in urns in the garden, " In " and " Out " on the front door and a gravel sweep for the Brougham and a hot house for the orchids. Sunday dinner and well established firm in the town. Tea and Croquet.





Chapel at Longparish, Hants.

Mr. SQUINCH : A chapel.

Mr. QUANTITY, F.R.I.B.A. : Not funny.

YOUNG CAMSHAFT : Why draw it?

Mr. PIPER : Not meant to be "funny." An attempt to show that methodist chapels, always execrated, have a part in the landscape. They are often humble but more living attempts at architecture than the most expensive churches of their date. In Wales they are an architecture in themselves. Look at that window at this end. Isn't it preferable to 1865 Early English plate tracery in a church? It is the difference between a vigorous old inn sign and an uninteresting Academy oil painting.

Upper Brailes, Warwickshire

Mr. SQUINCH : The fine church at Brailes is sometimes called " The Cathedral of the Feldon." One Robert de Fitzcustard rented the manor from the Abbot of . . .

Mr. QUANTITY, F.R.I.B.A. : What a hotch potch ! Mediæval, classic, and no proportion in particular. Too tall for a village. No, my dear fellow.

YOUNG CAMSHAFT : At least there is an hygienic amount of daylight let through the first and second floor windows.

Mr. PIPER : Gothic, yes, and classical, and plate glass let in later except in the gable window on the left. Columns of the porch probably added later. A suitable house for a schoolmaster or retired person in a middling way. Garden a bit overgrown but with a fine Wellingtonia. Rough cement texture. Date about 1850 with 1890 alterations. Strong character of a man who had done well in Leamington and retired to Brailes with a desire to show Brailes what Leamington is like.

Matlock Bath, Derbyshire

Mr. SQUINCH : There is nothing of interest in Matlock.

Mr. QUANTITY, F.R.I.B.A. : The hills are fine, but I fear our artist has chosen rather a dull subject.

YOUNG CAMSHAFT : The houses are fairly plain, but no one is justified in making people live on such steep declivities—imagine what it must be like to return home here tired from work.

Mr. PIPER : Domestic use of the Picturesque for the North Country. Smedley's Hydro is the Cathedral of the cult. Bleakness of the North Country and the conifer edging that symbolises retirement from the city to gas light and distant views. A little adornment here and there, which we all like to see on the cakes when we have passed through the bread and butter stage. This could not be in the South of England. The shapes, the proportions, the forestation and the angles are North Country.

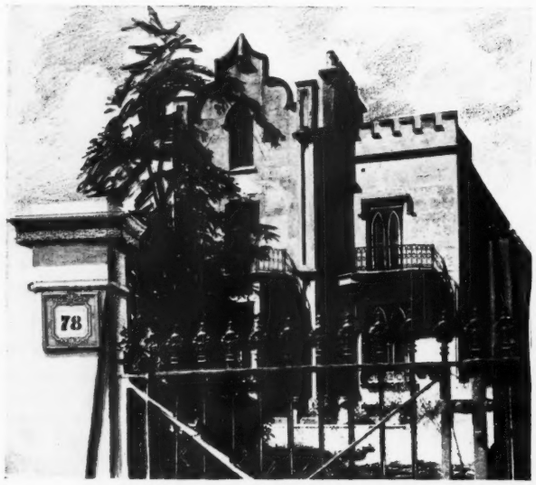
Leamington Spa

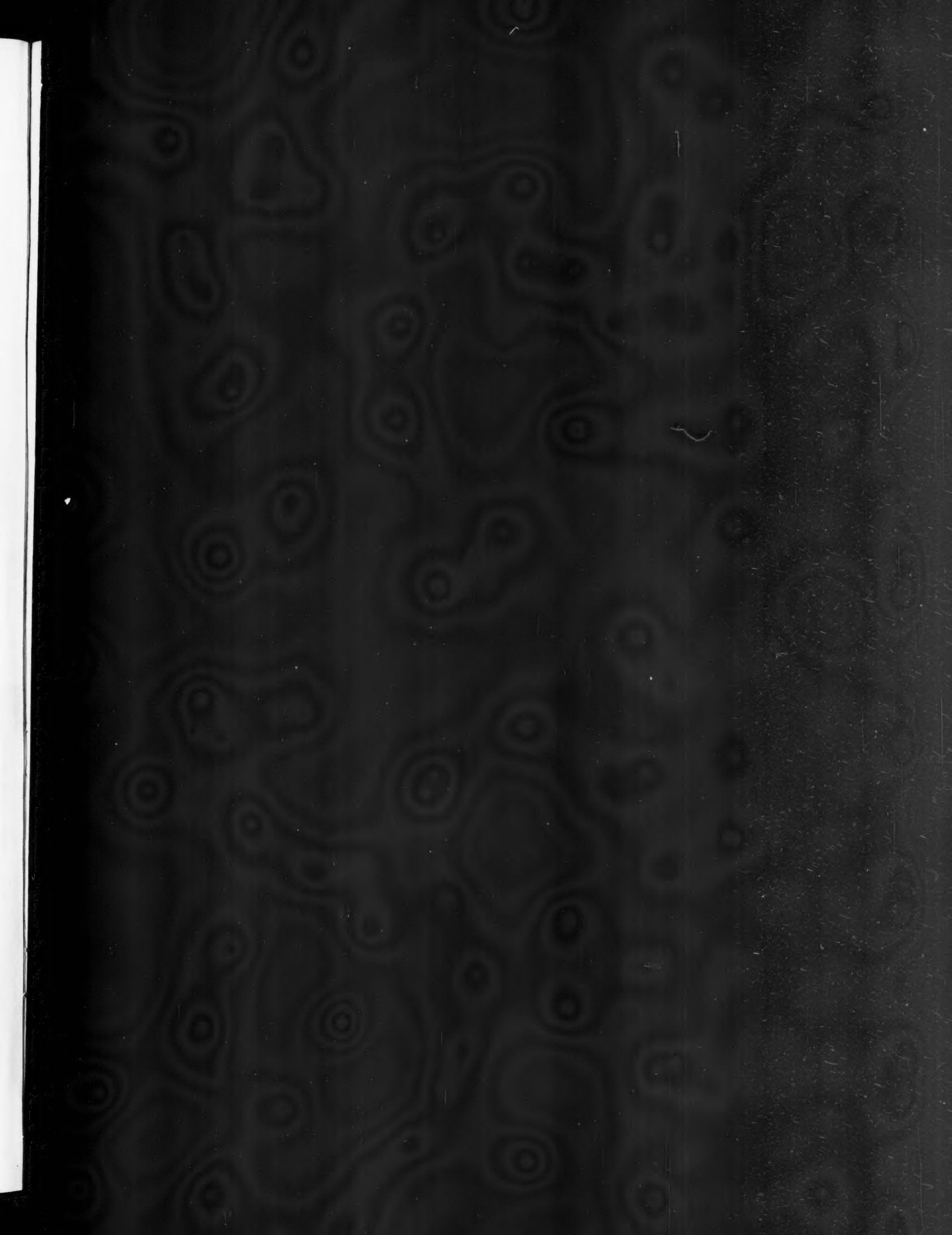
Mr. SQUINCH : Have you seen Kenilworth Castle ? It is quite near.

Mr. QUANTITY, F.R.I.B.A. : Why choose Leamington ? These houses are too late to be amusing. It is a pity that our artist has had to rely on the camera as well as his own pencil. The railings are merely cast iron.

YOUNG CAMSHAFT : This is sentimental architecture.

Mr. PIPER : This stucco Tudor which sometimes has an echo of the Swiss is found in Devon, St. John's Wood, St. Leonard's, Tunbridge Wells, Cheltenham and on the inner outskirts of many provincial towns. It is really classic architecture with Gothic adornment, like the Houses of Parliament. It contains in its glazing bars, cast iron railings, cornices and castellations early examples of mass-produced decorations from factory and kiln. It is the architecture of the Waverley Novels.





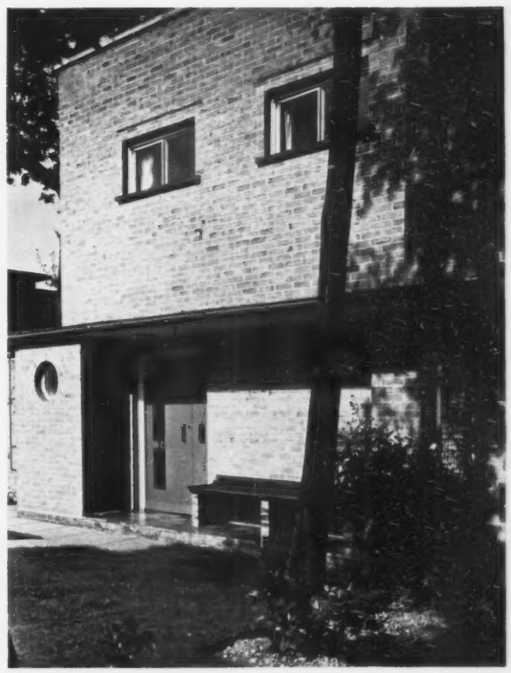
HOUSES

EUGEN C. KAUFMANN

1

THE SITE The site is of triangular shape with the apex pointing towards open meadows framed in the distance by wooded heights.

PLANNING The house has been placed as far north as possible leaving garden space to the south, south-east and east. A number of large trees on the site determined, to some extent, the layout; for example, an old oak tree on the northern part was made the central feature of a paved courtyard between house and garage. This yard is closed off from the street by a 7 ft. high brick wall. A covered terrace has been provided adjoining the dining-room in the south-east corner to have both the view and as much sun as possible.

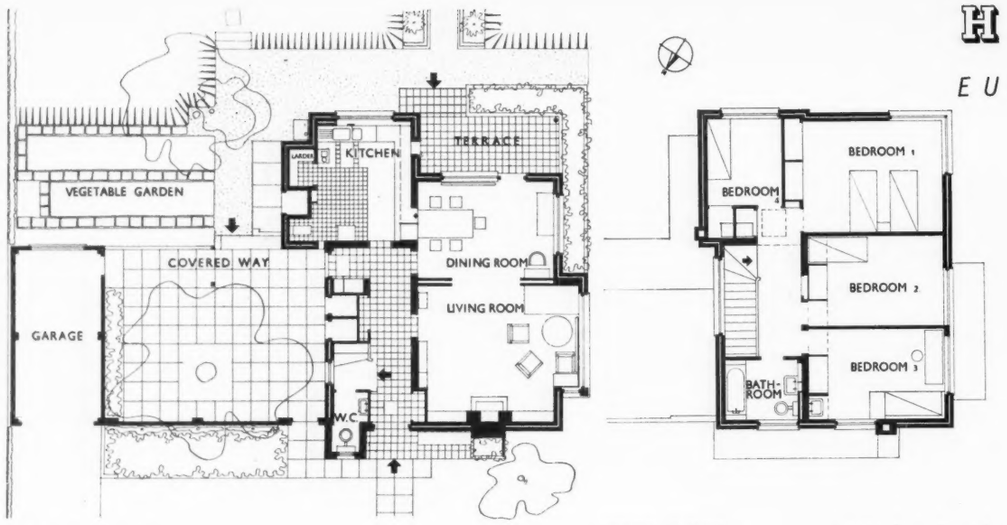


2

1, the house seen from the street. The existing trees on the site have been preserved. 2, the main street entrance.

HOUSES

EUGEN C. KAUFMANN



GROUND FLOOR

FIRST FLOOR

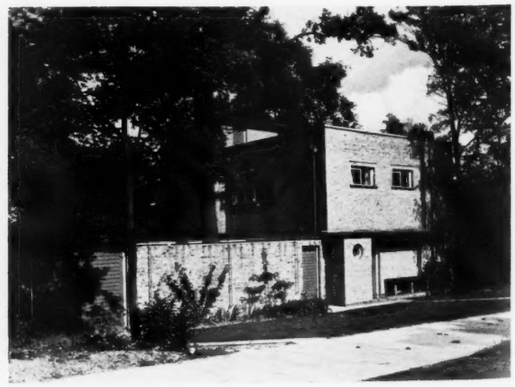
3, from the south-west, showing the terrace which overlooks the garden. 4, the living-room and dining-room. Sliding doors between the two rooms open to a width of 7 ft. 5, another view from the street. The brick wall running from house to garage screens a paved courtyard.

3

CONSTRUCTION AND MATERIALS The house is of brick construction with a flat roof covered with 3-ply bitumen with half-inch macadam on top and surrounded by a 2 ft. high parapet.

EQUIPMENT AND FINISHES The house is centrally heated with an alternative electrical immersion heater for summer use. All wardrobes and cupboards are built in. A hatchway is provided from the kitchen to the terrace and to the dining-room, and there is a delivery hatch for tradesmen and a sliding hatch to the coal bunker.

4



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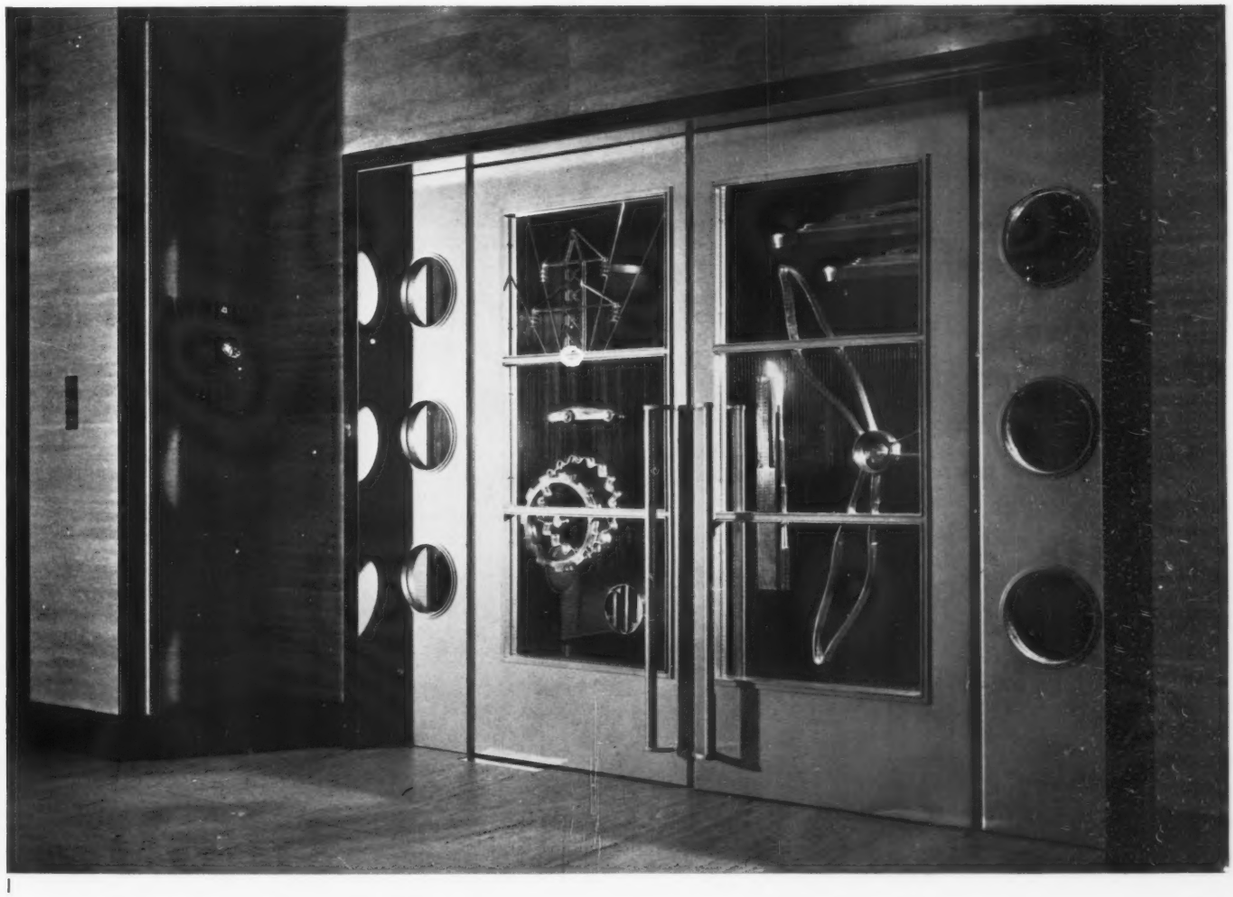
6, the paved courtyard overlooking the garden. 7, the adjacent lobby in which muddy shoes can be changed before entering the house.

OFFICES 1

MICHAEL RACH'LIS



1

1, the main entrance doors with symbols designed by Sigmund Pollitzer illustrating uses of aluminium.

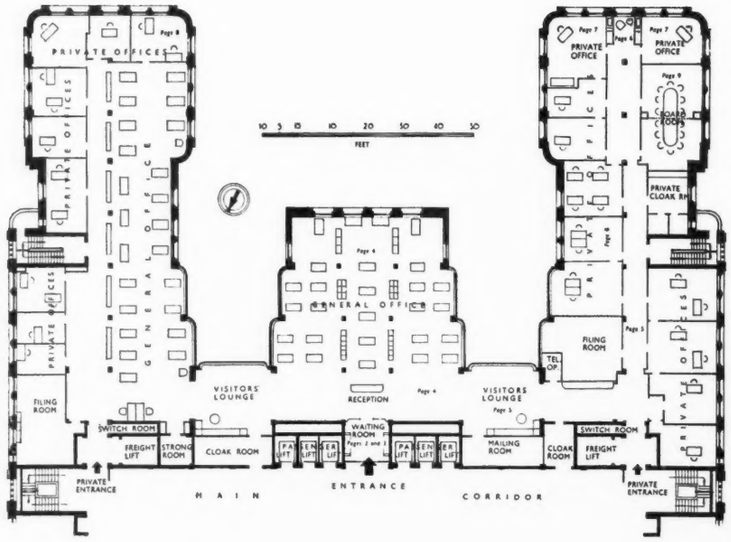
OFFICES 1

MICHAEL RACHLIS

THE SITE These offices occupy the whole of one of the upper floors of the new Adelphi building overlooking the Thames.

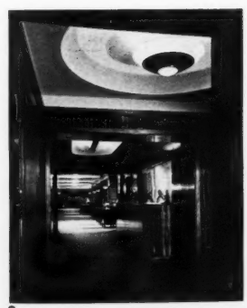
PLANNING The west wing of the E shaped floor space is devoted to private offices and the board room. The east wing and centre portion contain the general offices. Waiting rooms and a visitors' lounge are immediately inside the entrance.

EQUIPMENT AND FINISHES The firm occupying the premises are suppliers of aluminium and the possibilities of aluminium as a material are consequently exploited throughout the interior. Amongst other elements in this material are the entrance doors, radiator grilles, desk and wall lighting fittings, picture rails and door furniture. Colour is introduced by the anodising process.



2, looking towards the entrance doors from the reception desk. The panelling is in courbaril, a reddish coloured wood with a strongly marked grain. The barrier is pastel gold anodized aluminium. 3, looking towards the general office. 4, the corridor through the executive offices, lit by reflector ceiling trough.

2



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6

9

5, and 6, two executive offices panelled in peroba which has a warm yellowish tone. 7, the general office passage. 8, another view of the executive office shown in 6. 9, a visitors' lounge adjacent to the main entrance panelled in courbaril.

OFFICES 2

JOSEPH KONRAD

THE SITE In a main shopping thoroughfare in Bratislava, Czechoslovakia.

PLANNING The building is designed partly as offices for a business organization and partly as flats. Separate access by staircase and main entrance is provided for the office and flat accommodation. The office accommodation occupies the ground, first and second floors, the remaining floors containing two flats each. The office floors include an assembly hall seating 300 used for annual company meetings.

CONSTRUCTION AND MATERIALS The building is of reinforced concrete construction with hollow tile floors. Partitions are of hollow brick. The street façade is faced with light grey stucco. The ground floor, the frames of the casement windows and the pillars in the centre are of white marble. The large window on the first floor consists of two steel casements which slide so as to open the complete length of the window.

EQUIPMENT AND FINISHES Central heating is by low temperature water system. The assembly hall is air-conditioned, outlets being distributed in the ceiling. By day the hall is lit through a double glass ceiling, and at night by electric reflectors between the two layers of glass.

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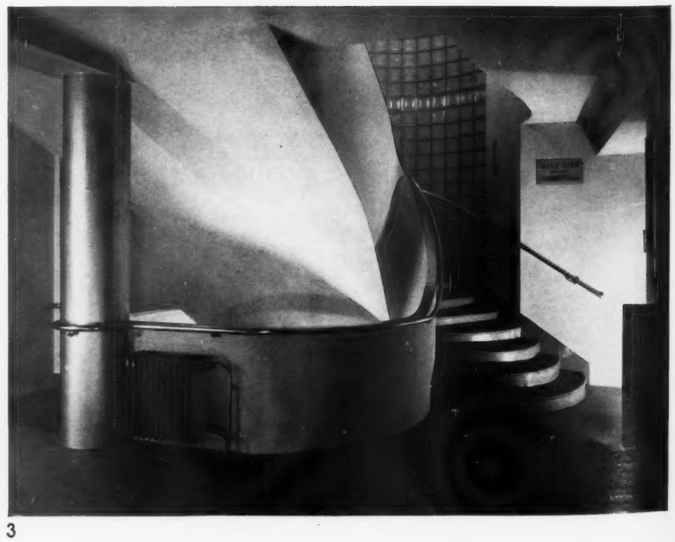

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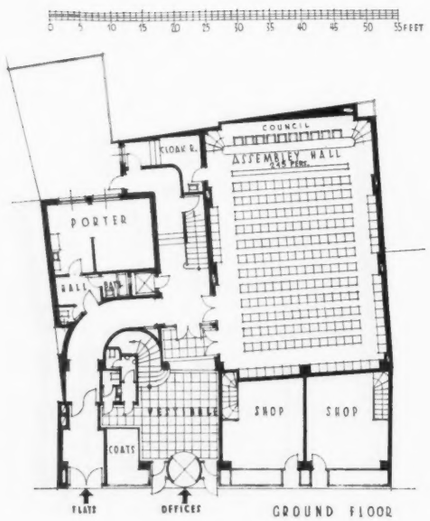
1, the street elevation. 2, the assembly hall on the ground floor. 3, the separate staircase connecting the first and second floors, occupied by offices.



A Corner Motif in Romanesque Capitals

3, the Persian base of a column showing the use of one head for two bodies; a forerunner of those at Moissac Abbey illustrated on the next page.

1, the Assyrian profile bulls with one human head from Sargon II's palace at Khorsabad dating from 722-705 B.C. 2, a Chinese bronze base for a small object, of the Han period. Both these examples from Eastern sources, although representative of widely differing cultures, exhibit the one-headed motif of the Moissac Abbey capitals whose origin is traced in the accompanying article.

1

2

THE conjunction of two animals with one head, often used to form the corner of a capital in French Romanesque buildings, is a fantastic or magic-religious motif of very great antiquity originating in the East. The Louvre has a cup ornamented with goats in relief joined by a single head (forming the handle) which was found at Susa and is ascribed by archæologists to approximately 3000 B.C. In the case of a small object of this kind the motif may be presumed to have been a semi-decorative semi-functional allusion to some earlier monumental sculpture with magic, religious or symbolic meaning. And we find something very closely allied to the motif on the monumental scale with magic-protective and dynastic-symbolic significance in the famous Assyrian profile bulls conjoined with one human head, 1, which come from Sargon II's palace at Khorsabad and date from 722–705 B.C. From the Mesopotamian regions the motif entered the minor arts of the Greeks, and archæologists record representations of two lions, sphinxes, and so forth with a single head on Greek vases, gems and coins ascribed to various regions and dates; as far as I know there is no sculptured example in any Greek object in the round, and it is therefore perhaps presumable that the Greeks used the motif purely as a fantastic decoration without symbolism or significance. Some surviving objects ascribed to the Han period (A.D. first and second centuries) show the motif translated into Chinese terms; a rectangular bronze base (for some small object) in the Stoclet collection, 2, consists of two horned winged animals with one head at the angle, and confronted lions or dragons with one head appear in the incised decoration on a Han tomb dated by inscription as A.D. 114 The Persian base of a column reproduced herewith 3, is an obvious ancestor of the capitals at Moissac Abbey (Tarn et Garonne) which are shown in my photographs 4–7, and archæologists have chronicled other ancestors in Byzantine remains and in Indian capitals of the Gupta period (A.D. 300–500). In mediæval times the motif was brought to Western Europe by the Moors and it appears with other Persian traditions in Moorish-Spanish textiles, ivories and so

forth. The twelfth-century French sculptors of Moissac had occasions to encounter it through contacts with Spain and they were also no doubt familiar with textiles and other objects imported more directly from the East. In English Romanesque sculpture we find the motif in various places; on a capital of a column at the entrance to the church at Avening, Gloucestershire, for example the heads of two horses come together at the angle to form one lion's head resembling the French and Persian prototypes; and the rectangular base of a font at Stafford, 8, ascribed to the twelfth century, has eight profile rams with four heads at the angles.

R. H. WILENSKI

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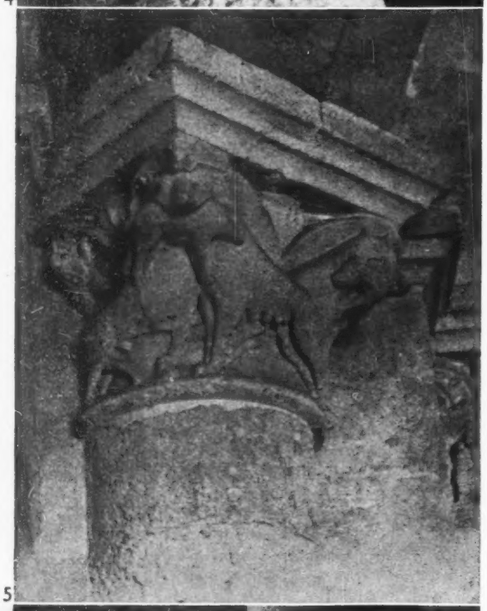

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4-7, capitals at Moissac Abbey (Tarn et Garonne) in which the bodies of two animals are joined by one head at the corners. In 6, a decorative variant of the motif, we see the heads of two birds gripped in the animal's teeth. 7, is believed to be a representation of Daniel in the Lion's den. 8, one of the few English examples of the one-headed motif, on the rectangular base of a font at Stafford.

7

BOOKS

A Regional Study

RHODE ISLAND ARCHITECTURE. By Henry-Russell Hitchcock, Jr. Providence (Rhode Island, U.S.A.). Rhode Island Museum Press, 1939.

THIS volume, second in a series published by the Rhode Island Museum Press, is not, as Mr. Dorner admits in the preface, "a formal history of architecture in Rhode Island." It is the catalogue issued in connection with an exhibition of the same subject arranged by Professor Hitchcock for the Rhode Island Museum. For some reason this fact is not mentioned and Mr. Dorner, the Director of the Museum, is forced to apologize for the book's somewhat episodical and occasionally abridged treatment. As a catalogue it needs no apology. It is a brilliant condensation into sixty pages of three hundred years of American architecture as seen in the microcosm of one State. Eighty-one full page half-tone plates are more than lavish, but one can condone the occasional detailed descriptions of certain buildings, apparently referring to an illustration where none exists, only if one realizes that this is the reference book of an exhibition. Actually the virtues of this volume are enhanced by admitting its function. Concealing it transforms its necessary limitations into faults.

Rhode Island is peculiarly adapted for such observation. It is, with Connecticut and after Virginia and Massachusetts, one of the oldest States in the Union and therefore eminently suited for a study of native architecture *depuis les origines*. Its early panorama includes agriculture, shipping and commerce. In the 18th century, its Slater Mill of 1789 marks the introduction of cotton textile manufacture. Unlike Virginia, whose architecture is more popularly appreciated, Rhode Island's characteristic life was not abruptly terminated by the Civil War. In Newport, the resort of the over-famed "four hundred," it preserves a Gilded Age of super-bourgeois follies from before the Civil War until today. It is, therefore, a field rich in examples of the three aspects of architecture in which, according to Professor Hitchcock, American achievement is most widely recognized: industrial architecture, commercial architecture and suburban middle-class architecture.

Equally felicitous was the choice of Professor Hitchcock for the double responsibility of arranging the exhibition and writing the text. Although other architectural scholars may equal his knowledge of any single period, few possess his encyclopædic range, and even fewer his alert interest in contemporary problems, sociological, technological and æsthetic. In addition, Professor Hitchcock understands the attractions of *expertise* and handles an extensive technical vocabulary with such bravura that even the lay reader is seduced by his sonorous architectural idiom.

Having chosen to limit his view to a single State, Professor Hitchcock still never permits us to lose sight of the relation of each phase to the rest of the American scene. The outline is handled horizontally as well as vertically and its value is thereby immeasurably increased. He is not afraid to refute traditional classifications, and his analysis of successive influences and styles does much to clarify and amplify accepted versions. His close study of derivations, particularly in the early periods when the inspiration was mainly English, should accent interest in the book here.

As for the architecture itself, there are many buildings of intrinsic excellence. One is, however, forced to accept some of the objects of Professor Hitchcock's enthusiasm as having the special quality of beauty that the femur of a dinosaurus no doubt possesses for the archæologist who is attempting its reconstruction. This is a tribute to, rather than a criticism of, the force of Professor Hitchcock's argument, which, always conscious of the relation of past to present, leads with gentle inevitability to modern architecture. So plausible are his transitions that one overlooks the fact that his most impressive modern example (the John Nicholas Brown house* by Richard J. Neutra) is not in Rhode Island at all. Mr. Neutra's work in this as in other instances is so good that one agrees that it obviously must be included, even if it involves a slight extension of boundary lines.

The success of this experiment in concentrating on a single locale makes one wish to see it repeated not necessarily only in America, but perhaps in England where regional interpretations and developments of stylistic doctrines would well merit such attention.

ERNESTINE CARTER

London Without Tears

LONDON FABRIC. By James Pope-Hennessy. London: B. T. Batsford. Price 10s. 6d. net.

THIS is a very personal book. It is frankly about such aspects of famous London buildings as move the author to reflection or enthusiasm, and about such moments in their history as he happens to find interesting. The book was inspired, the preface announces, by the war scare of September, 1938: "During those tense autumnal days I wandered round the city, wishing both to distract my mind and to view, as it then seemed, for the last time the places I like. From this sombre tour emerged a conviction that if one was to try to write about London it had better be at once." So it is now even more topical than the author knew. Though no excuse is really needed for a book which is both admirably written and sensitively compiled: there is always room for fresh interpretation even of hackneyed subjects. Nor, indeed, is his excuse for writing such a book entirely logical. For the elusive and shifting atmosphere of buildings, and their sense of still existing in the period of their most intense history, which is what particularly interests him, have surely of all qualities the most chance of surviving bombardment—short of complete destruction. Indeed these very qualities are due to the number of historic crises they have already survived. Nor does his preoccupation with crypts in the opening chapter help to convince us of the urgency it has pleased him to assume. Crypts surely will survive if nothing else does. However, we are soon disarmed, as his chapter on crypts in general and the crypt of St. Paul's in particular is the best written in the book.

His method is that of a conducted tour, he being the very knowledgeable and determined guide and his party of one being a character called Perdita, who acts obligingly as what on the music-halls would be called his "feed." Thus, at Hampton Court:

"Said Perdita 'you must come here a lot.' 'Yes,' I said, 'I used to.' 'Shall we ignore Wren and William III today then,' she suggested, 'and stick to the sixteenth century? You could tell me about it as we went along.' 'Very well, lets do that,' I answered, as we paid our entrance fee at the door." And then we learn about Tudor history and the relics it has left until a timely remark by Perdita is required to set the author off on his next tack.

This method is not as irritating as it sounds. Its very frank naiveté, even its priggishness, has charm; and it has the advantage of allowing the author, prompted when necessary by his "feed," to tell just the stories that interest him and ignore what bores him, and to interject personal reminiscences, as for example a childhood partiality for Harrison Ainsworth, whenever it seems relevant to him. Moreover one accepts this convention with surprising ease, and then reads willingly with only an occasional pang of sympathy for the long-suffering Perdita.

The author is confessedly more interested in the Tudor and Elizabethan periods than in any other. He barely tolerates the Stuarts and has little but contempt for the bourgeois Hanoverians. But although he looks at architecture always as the expression of its period, he does not try to explain why it is that of all the full-blooded qualities the Elizabethans and Jacobeans can boast, it is their vulgarity that comes out strongest in their architecture; while the dominant qualities of discipline and good order make the architecture of the Georges finer perhaps than the general character of that age merits. Perhaps it is because of architecture's reliance on control—even in the most romantic architecture it must be a controlled romanticism. Before the Renaissance established itself in England as a native culture its very character of boisterous independence deprived it of the discipline essential to good architecture.

However, it is refreshing to find frank preference given to a period that is at the moment rather unfashionable, and as the author of this book is

* See pages 195–196 of this issue.

An eighteenth century print from a drawing by John Carter (1786) of funeral effigies of the Kings and Queens of England stored in Henry V's chantry in Westminster Abbey. An illustration from "London Fabric" by James Pope-Hennessy, reviewed on this page.

THE STATE PROCESSION & FUNERAL CAR.
OF THE LATE DUKE OF WELLINGTON. NOV.R 18TH 1852.

An illustration from "London Fabric" by James Pope-Hennessy.

concerned with the overtones of architecture rather than with buildings themselves, he does not find it a handicap that this unfashionableness, at any rate as far as the early Renaissance is concerned, is backed by much solid reason. But he does find himself writing with less gusto when the respectable eighteenth century is his background. As an essay in nostalgia his book is remarkably successful, and it is of added interest in belonging to a class of literature which, if the author's worst fears are realized, will itself in the future become the subject of nostalgic regret.

J. M. RICHARDS

Guide to A.R.P.

CIVIL PROTECTION. By Felix J. Samuely and Conrad W. Hamann. London: The Architectural Press. Price 8s. 6d. net

JUDGING by the information and discussion published during the last year there is a very large amount of technical and general knowledge in existence on different problems in A.R.P. In this position the large majority of architects have found it quite impossible to keep pace with all the new developments which are continually taking place. Handicapped generally by his lack of scientific or technical outlook, the architect has found that A.R.P. is becoming more and more an engineer's job. This situation will probably continue if the knowledge so far acquired remains unused, that is if raids do not occur. The situation will change very radically however the moment bombs begin to give practical demonstrations of their theoretical capabilities. It is here that architects must show that their profession in collaboration with engineers should be in a position to organize and control A.R.P.

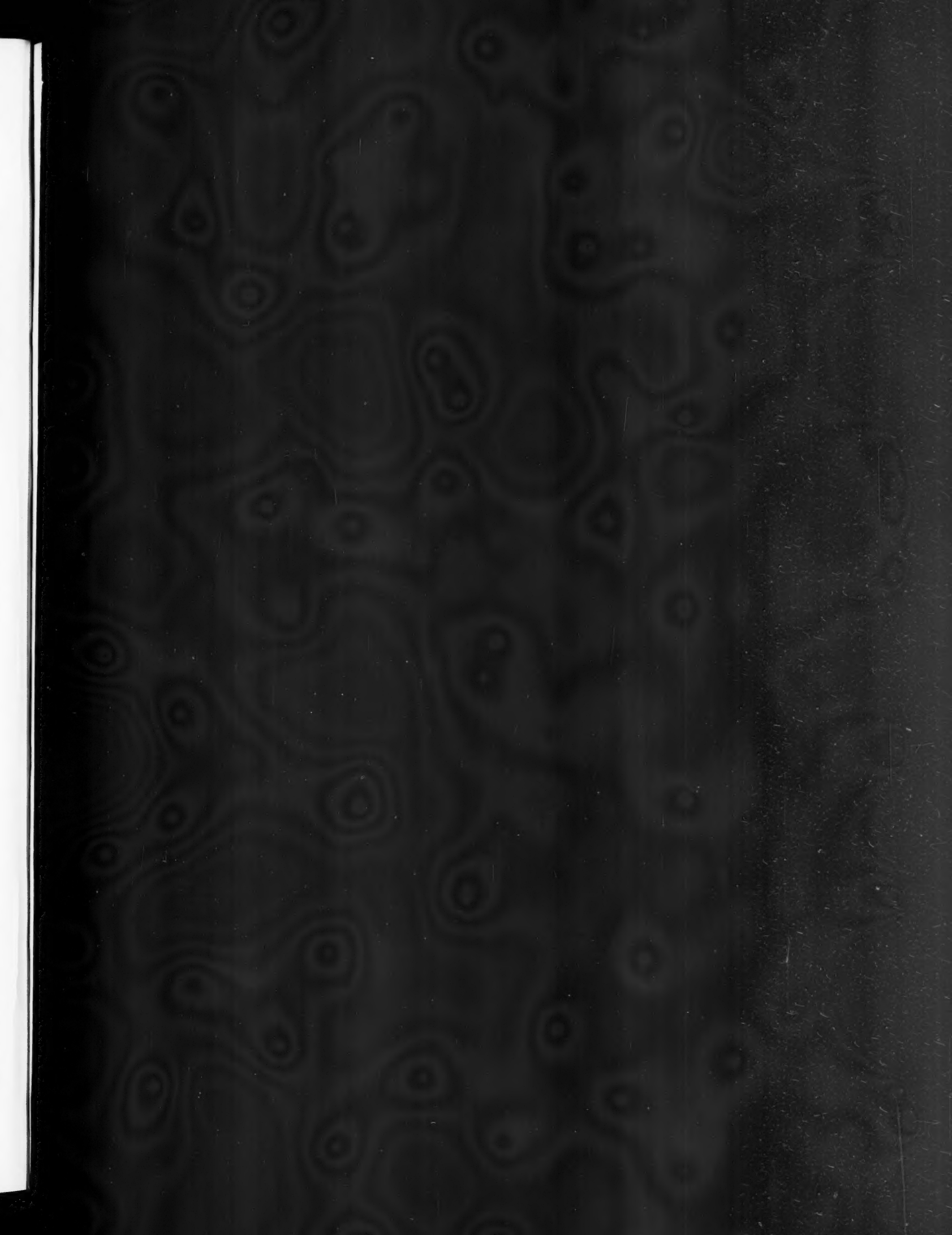
Whether there is sufficient co-ordination of A.R.P. will remain unknown until the raids start. That it is not sufficient seems probable. The architect who will be able to undertake schemes embracing the planning and co-ordination of the whole problem is going to be in a strong position to give the general public the degree of planned protection which the government will be forced to undertake. To be in a position to do this, however, the architect must have a competent working knowledge of the technical problems involved, not individually but as a profession. That such a desire exists is proved by the amount of public discussion which takes place and the course recently organized by the A.A.S.T.A. in technical A.R.P. The publication of government handbooks on technical subjects for the general public (and therefore for the professions concerned) raises a problem. With little or no such knowledge as a basis for either understanding or criticizing, it is difficult to get a clear view of all the questions involved. This becomes all the more acute when, whether the individual agrees with the government policy in question or not, the mass of public and press opinion has done much to undermine his faith in the competence or adequacy of the measures suggested.

Several books on various problems on A.R.P. outside the government handbook have already been published. These have corroborated the opinion generally felt that the government precautions are inadequate. Against these the somewhat bald statements of the government hand-books, with little or no explanation of the standards on which precautions are designed, cannot be altogether convincing; and where standards have been set up, they do not seem to increase the public confidence.

Early last summer *The Architects' Journal* published for the first time an analysis of government publications up to that date. The present volume incorporates these articles and has been substantially added to, to bring the information up-to-date. The book is divided into a number of sections, each containing a reprint of the text of one of the hand-books. This is arranged on one half of a page; opposing it is an analysis, and more important, an enlargement by the addition of further technical details known and experimented with. These are all fully illustrated by diagrams and plans. This gives not only a clear idea of the government standards of protection but also what further research and knowledge generally exists in the particular field.

The whole problem of A.R.P. was badly in need of a co-ordinated analysis of this sort: a survey the government themselves should have initiated and published. Architects and engineers who are already experts in A.R.P. will find statements with which they are not in agreement. None the less the book as a whole is the most valuable and in fact the only clear explanation of A.R.P. up-to-date. For this it certainly owes much to the various earlier publications (such as the A.A.S.T.A. report) which were pioneers in the subject. The clear layout and exceptionally low price makes the book understandable and obtainable by the majority of the profession.

R. FURNEAUX JORDAN



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RUBBER

A REVIEW BY PHILIP SCHOLBERG

This is the eighth of a series of supplements each dealing with a different material. In these supplements emphasis is laid on the decorative possibilities of the material, but they are also planned as a continuation of the special issues on materials that have been periodically published by THE ARCHITECTURAL REVIEW during recent years.

"Look here, papa! I believe this is either india-rubber or elastic gum."

"What do you say? What do you say?" I cried. "This will be a most important discovery for us. Give it to me, that I may examine it." "But, Papa," continued Fritz, "what good will it do us, even if it be india-rubber? as we have nothing to draw here, we have no pencil marks to rub out; so, of what use can it be to us?"

"Oh, my goodness!" I said, "what a number of questions all at once! Do give a little breathing time, and I will endeavour to answer them all. The caoutchouc is a gum which exudes from certain trees, and particularly from the plant which bears its name. It escapes from incisions made in the bark, and runs into vessels which are placed at the foot of the tree to receive it. In Switzerland we get a portion of it through Portugal and France, because it comes direct from the Brazils, Guiana, and Cayenne. It reaches us usually in the form of black bottles of a greater or lesser size, and for this reason: the natives who collect it make earthen bottles of different sizes, and leave them to dry. They afterwards permit this flexible gum to spread itself in repeated layers over these bottles; they then suspend them over the fire until the gum is completely dry and hard, the smoke giving to the india-rubber the dark colour which it usually possesses. Then the earthen bottles are broken, and the pieces carefully extracted from the mouth of the india-rubber bottle. In this manner the india-rubber shapes are obtained soft and flexible, and ready for exportation."

"This way of making it by the natives," said Fritz, "appears to me to be extremely simple and easy. We shall be able to make some bottles which will be extremely useful to us in our hunting expeditions and excursions."

"Not only that," I added, "but we shall now be able to make boots and shoes when our others are worn out. You did not understand at first why this discovery pleased me so much, but it was because I foresaw a number of uses to which we could put it. In case of necessity it will serve us instead of silk, wool, felt, etc.; but its waterproof qualities render it particularly appropriate for boots and shoes."

"Oh, papa," exclaimed Fritz, "it is enough for one day, surely, to have discovered this caoutchouc—it is splendid."

from "The Swiss Family Robinson" (1813)

Historical Note

While the natural reaction of children of little Fritz's age may be to think of motor car tyres, the fact remains that rubber is very widely used in almost every industry. Not so very long ago it was estimated that there are no less than 40,000 distinct uses for rubber, and the list receives every day new additions. Yet it is only one hundred years since the rubber industry can be said to have started.

The existence of rubber was first reported by European observers rather more than four hundred years ago, when the men of Columbus's second expedition discovered that the natives of Haiti played a game with surprisingly resilient balls made from the gum of a certain tree. In the sixteenth century, however, the Empire-bonding effect of ball games was not understood, and like the Swiss family the Spaniards were more interested in the fact that this gum, smeared upon their cloaks, would keep out torrential rains. The result of this was apparently not very satisfactory, for the material was not made known to European scientists until the middle of

the eighteenth century, when a number of workers experimented upon it, so far as is known with very little result. But at the beginning of the nineteenth century William Murdoch's experiments led to the introduction of coal gas, and this provided coal tar naphtha as a by product. This proved to be the comparatively cheap rubber solvent for which scientists had been searching, and the process of waterproofing fabrics was developed by Charles Macintosh. This was in 1829; and the rubber was used still in its raw state, so that it was very much affected by changes in temperature. Its use, therefore, was rather restricted until, ten years later, the process of vulcanization was discovered by Goodyear in America. It is from this date that the growth of the rubber industry can be said to have started, for allied with vulcanization is the kindred question of compounding, which allows the manufacturer to produce a rubber with the physical characteristics appropriate to any purpose. In just the same way that steel may be alloyed with various other materials to give greater resistance to heat, greater elasticity, or almost any other property, so may rubber be compounded with sulphur, clay, carbon black and a host of other materials which will alter its strength and elasticity. This process of compounding has been developed to such an extent that the use of raw rubber, with one or two exceptions to be considered later, is comparatively rare.

The Raw Material

The source of rubber is the tree *Hevea Braziliensis* which grows wild in the forests of the Amazon, and if incisions are made in the bark of this tree a white milky fluid or latex flows out. This latex is not a sap, and nobody quite seems to know what use it is to the tree, for while some maintain that it is a means of retaining moisture, others claim that it is a form of plant food. The fact remains, however, that the bark of the rubber tree is provided with a system of tubes and vessels which are not present in other trees, and it is these vessels which contain the latex. Other plants such as dandelions contain small quantities of latex, but the main source is *Hevea Braziliensis*, which is now cultivated in plantations in the East. There are various Oppenheimish tales about the perilous smuggling of seeds from Brazil to the East, but the truth of these is comparatively unimportant, for plantation rubber has inevitably ousted wild rubber, the tapping of closely spaced plantation trees being much simpler than in an impenetrable forest, while proper cultivation does much to keep down insect pests and there is some continuity of supply and a reasonable uniformity in the raw product.

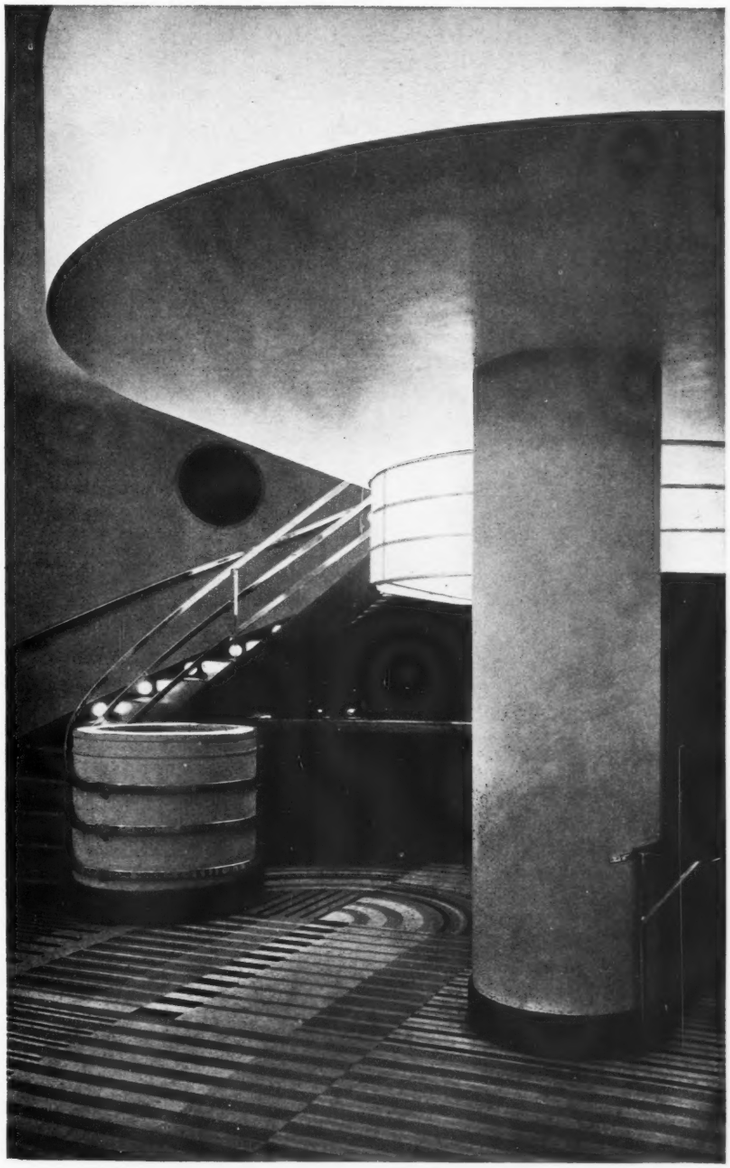
When it is drawn from the tree, the latex is an emulsion of small rubber globules, just as milk is an emulsion of butter fat globules. If dilute acids are added to the latex the whole mass sets like a junket, and this mixture is put through rollers which squeeze out surplus moisture, after which it is hung up in smoke until it is dry. This is the smoked rubber sheet of commerce. A rather more elaborate rolling and no smoking gives the crêpe rubber which we know in the form of soles for shoes.

In the next step the raw rubber sheet is milled between heavy steam heated rollers to make it more plastic. During this process the rubber loses its tensile properties and its resiliency, but these are recovered by the vulcanizing and compounding processes. Why not make the rubber goods direct from the raw rubber? The answer is that it is perfectly possible, but that the only way of doing it would be to use a large quantity of expensive solvents, most of which are difficult to recover. Alternatively, the operation can be carried out direct from the liquid latex, which is allowed to set in the required shape, but only recently have the difficulties of transporting liquid latex to this country been overcome, added to which most of the machinery in this country is arranged for dealing with solid raw rubber. Of this direct from the latex process more will be said later, but most of the rubber goods of today are manufactured by the vulcanizing process. If it should be thought that milling and subsequent vulcanizing, the elaborate destruction and subsequent restoration of the elastic properties of the raw rubber, is a somewhat roundabout method, it should be pointed out that the final product, vulcanized with sulphur alone, has an elongation and a breaking load far in excess of the raw rubber. There is no need to describe the vulcanizing process in detail here. It is enough to say that when a mixture of rubber, sulphur and other ingredients is heated (generally to a temperature of 120 to 150 degrees C.) the change in properties is brought about. If small quantities of accelerators are added the temperature and the time of heating can be reduced, and it is possible to vulcanize satisfactorily at 100 degrees or less. There are also the "cold cures," which are extremely important because they allow animal and vegetable products to be incorporated with the rubber and vulcanized without damage. As an example of this, brushes can be made with the fibres or bristles set in rubber, with the result that the newer solvents used in the paints do not loosen the hairs, while substances such as wood pulp, ground cork or leather waste can be incorporated to give a soft, noiseless and heat resisting carpet.

Mineral compounding ingredients are roughly of three types. There are the coarse powders such as barytes and chalk which do little more than dilute the rubber; in this group the tensile properties remain good, but become inferior as the percentage of rubber is reduced. The second group forms an intermediate class and includes such ingredients as refined china clay; the clay particles are small and give what is known as a reinforcing effect, the rubber becoming harder and stiffer without losing its character. For many purposes, such as flooring, the rubber is improved. The third group includes the most effective reinforcing pigments such as carbon black and gas black. Other reinforcing pigments such as magnesium carbonate and zinc oxide reduce the tendency for rubber to tear, and there are numerous organic pigments such as glue, bitumens and fatty oils, all of which have their specific effect on rubber and allow the manufacturer to vary his product as required. As an example of the difference made by varying amounts of the compounding ingredients, five per cent. of sulphur will give the ordinary soft rubber, 30 to 40 per cent. and prolonged heating produce hard vulcanite, while with carbon black breaking loads up to about 4,000 lb. per square inch are obtainable.

Rubber in the Building Industry

While the most obvious building use for rubber is in flooring, a full list of the possibilities would fill at least a page of small type. Starting at foundation level the first application would be the rubber composition dampcourses, while the halyards of the flagstaff at the top might quite well be rubber impregnated so that their weather resistance was improved. Between these two levels its applications vary from the small fittings such as door stops and chain pulls to the more structural aspects such as rubber roofing compounds, waterproofing solutions for damp walls or rubber mats for the insulation of machinery or floors, not to mention the various adhesives for fixing tiles and other materials, and the very large field of electrical equipment employing large quantities of rubber for insulation purposes.



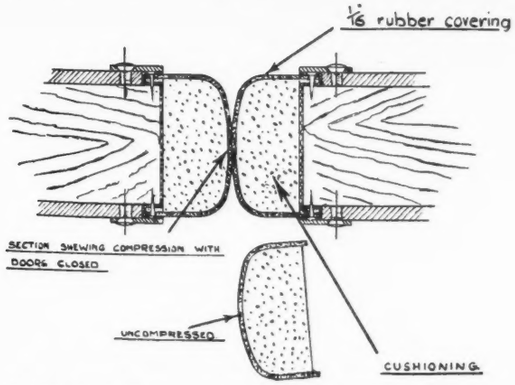
Rubber floors are durable, easily cleaned, and give a pleasant resilience, but from the designer's point of view the great variety of pattern obtainable is an additional advantage. Left, a floor in Fischer's restaurant (Raymond McGrath, architect) covered in $\frac{3}{16}$ inch inlaid rubber in grey, red, buff and black tones, which shows the possibilities of an intricate pattern.

1, in Construction

As a means of providing a good key for rendered finishes on concrete walling, or for producing a texture which will allow the concrete to be left untreated, rubber has been widely used as a form lining, and has a reasonably good life. Specially shaped strips or tubes are tacked to the inner face of the shuttering, and remain embedded in the wall face when the shuttering is struck. When the rendering is to be applied the rubber strips are flexible enough to be easily removable and an undercut groove is left to provide a key. Used in sheet form as a shutter lining rubber can be made to produce a light texture in the wall face and thus save expensive bush hammering and other treatments. The various tars and bitumens used for waterproofing purposes often contain a certain percentage of rubber, while latex is also used as a binder for asbestos and other acoustic materials. For decorative plaster work where there is a considerable amount of repetition it is often worth while to make a rubber mould, which will last a great deal longer than the more usual gelatine type.

2, as a Flooring Material

From the point of view of the user perhaps the greatest advantage of rubber flooring is its high resistance to abrasion. Under standardized tests rubber comes out very nearly top of the list with only a few materials such as vitreous tile above it. Nearly all technicians concerned with the rubber industry will readily admit that laboratory tests do not always give reliable results, but in one bathroom in this country there is a piece of rubber flooring which has been walked over by at least six million people, this figure being authenticated by the fact that the rubber in question was first used at the turnstiles of an international exhibition. Rubber manufacturers claim that, under normal conditions, a good quality rubber floor, properly laid, will last for anything from twenty to forty years, and that though the initial cost may be somewhat higher than for other coverings, rubber will show a saving over a period of years. For the architect the chief advantage of rubber is that it gives him complete freedom to design the sort of pattern he wants, and that colour variations are almost unlimited. Although it is obvious that a floor which consists of a uniform area of some standard colour will be cheaper, there is no practical limitation in pattern. Intricate curved shapes and narrow strips of different colours naturally demand greater skill in laying, and there will probably be a larger amount of cutting to waste, but, given good workmanship, there is no reason why a floor laid in the most complicated pattern should ever lift in use. Reliability depends not only upon skilled laying but also upon the sub floor, which must



Latex sponge cushioning used for swing doors. The slight compression of the rubber makes the doors draughtproof, and there is still sufficient resiliency to prevent any damage to trapped fingers.

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TYPES OF RUB-

be firm, level and dry. Rubber should never be laid direct on screeded concrete floors in direct contact with the earth; at least half an inch of asphalt is necessary for damp proofing. Wood and jointless floors are quite suitable provided that there is adequate air circulation beneath them, and the same applies to open concrete floors, where the screed should be three to one finished smooth with a steel trowel. Old boarded floors, provided that the surface is smooth, are better than new boards which may be liable to warp. Uneven floors, if they cannot be levelled off with a planing machine, should be covered with plywood or laminated board screwed to the old floor.

A typical specification for solid rubber flooring, drawn up with the approval of the India Rubber Manufacturers Association suggests that the minimum thickness of the rubber should be $\frac{3}{16}$th inch for general purposes and $\frac{1}{8}$th inch for light duty. "The rubber used should be uniform in composition, free from ground vulcanized rubber or other forms of ground waste, with a minimum content of 25 per cent. by volume of high grade new rubber." This is not an absolutely first grade specification, but it at least ensures a standard which will prove satisfactory in use.

Apart altogether from questions of durability, rubber has definite advantages from the point of view of cleanliness and silence. Its smooth surface cannot harbour germs or vermin, it does not absorb moisture, and it can easily be cleaned with soap and water, while for hospital use disinfectants can be safely added to the washing water. Various special cleaning compounds for rubber floors are on the market, most of them perfectly satisfactory, but ordinary soap and water is probably the simplest method. If the traffic on the floor is not too heavy the rubber may be kept polished, though it is essential to avoid any polish containing turpentine which will make the surface sticky and will ultimately cause the rubber to perish.

Apart from the sheet rubber floors, other types such as sponge and plastic rubber are available, while it is not unusual to find combinations with other materials such as asbestos cement, which can be used to form the rigid core of a rubber covered tile. Sponge rubber carpeting is useful if an even greater degree of resilience than ordinary rubber sheeting is needed. Most of the sponge carpets on the market have an upper skin of tough rubber sheet with a sponge rubber backing, the thickness of which can be varied within wide limits. Another type of carpeting is made with the same surface but with a backing made up of rubber and wool fibres. As an underlay for ordinary carpeting sponge rubber is widely used, and here again any necessary thickness can be obtained, while a similar underlay is also made from the whisked-up latex used in upholstery work. One other aspect of rubber as a flooring material should be mentioned here. In the ordinary woven carpet a sizing compound is used; if rubber is used for the same purpose this has the effect of locking the weave and making it impossible for the pile to pull out. Thus the carpet forms its own selvedge and needs no binding or sewing whether it be cut on the straight, curved or diagonally. The carpet can then be joined with special tape or strapping in such a way that the joint is almost invisible, and it is thus possible to obtain broad loom effects in any size or shape. Intricate patterns can be laid and any section which has suffered excessive wear can be cut out and replaced with a minimum of expense. This and other types of carpet can also be fixed to the floor with one of the rubber adhesives.

Rubber finishes can also be applied to staircases, and give a comfortable non-slip finish. It is important, however, that ordinary sheet rubber should not be applied to the staircase like a carpet for it will inevitably crack at the sharp bends where treads meet risers. Specially shaped units should be used with the tread and nose piece combined, with a separate flat strip for the riser. This method also allows any worn tread to be replaced.

Wall coverings are treated in much the same way as floors, except that the sheeting required is considerably thinner. It is sufficiently flexible to be bent round corners and window reveals and no particular difficulties crop up in practice.

Three further examples of the different treatments obtainable with inlaid rubber floors. Any colour can be obtained and it is possible to match existing colours if additions are needed after a period of years. 1, a display hall in the Empire Exhibition of 1938 at Glasgow. A repeating thistle motif in a lighter colour provides a simple decorative treatment. 2, a method of emphasizing space division by repeating the shape of an extended display table in the floor pattern. 3, a straightforward treatment in strips of different colours to suggest space in a kitchen.

3

3, as a Sound Insulator

The sound insulating properties of rubber flooring have already been referred to, but the same material is used in a multitude of ways, not only to prevent sound from being produced (rubber tyres on carts and trollies, rubber rims on dust bins, etc.) but also to prevent it from being transmitted throughout the building. Sub floors floating on rubber buffers considerably reduce the effects of impact noises, lift motors and other machinery is mounted on rubber pads, while transmission of noise along pipe lines can be prevented almost entirely if a sufficiently long length of rubber hose be inserted. About three feet would be required for an eight inch pipe, and it is interesting to note that the insertion of a rubber washer between pipe flanges make no appreciable difference to the sound transmission, even if the bolt heads and nuts are also provided with washers. A certain amount of sound is also liable to penetrate through cracks round doors and windows, and the familiar draught excluding strip will also serve to keep out noise. Where windows overlook a busy street the glass may be set in rubber channelling to reduce its rigidity and consequent high sound transmission.

4, for External Use

During the past few years much has been said in the popular press on the subject of the rubber road as a solution to the noise problem and to prevent damage to old buildings from traffic vibrations. Although the cost of rubber for this purpose is relatively high it seems possible that the cost may be offset by its exceptionally long life. Some difficulty was experienced in the early days as the blocks were inclined to creep under traffic movements, but this has now been largely overcome. Three sections of road are to be seen in London, one in Thurloe Place, one in Lombard Street and the third in New Bridge Street, while other stretches have been laid in Edinburgh and Glasgow. Apart from silence, the rubber road has the advantage that it is dustless and does not need watering, sanding or gritting, while its smooth surface makes it easy to keep clean. For entrances to shops, courtyards to flat blocks, and flat roof playgrounds rubber paving is as suitable as it is for internal use, while rubber-tar compositions are used for lining swimming baths. A comparatively small use is in expansion joints for outside concrete paths.

5, for Upholstery

Rubber for upholstery and mattresses is of four different types, latex sponge, rubber sponge, rubber treated hair and air filled cushioning. In the first three types the material can be made to any shape and is quite easy to fix. The shapes of the air containers are comparatively limited, and they need rather more finishing and covering, but they give a very

considerable degree of comfort and are useful if there is only enough space for a small thickness of upholstery. In public buildings and transport vehicles rubber has certain marked advantages for the owner, for with the more usual spring seating there is the danger that litigous passengers may have their clothing torn by springs projecting through worn upholstery. Apart altogether from considerations of extra comfort it is a considerable advantage to have a material which will not harbour vermin of any kind and which can easily be disinfected.

It was stated earlier in this article that the technique of moulding rubber products direct from the latex had only recently been developed. In this process a small percentage of alkali is added to the latex to act as a preservative and the water content is reduced centrifugally from about two-thirds to about a quarter. This is done before the latex is shipped to this country. To make latex sponge the appropriate vulcanizers and compounding agents are added, with the addition of others which stabilize the foam into which the mixture is then whipped. This mixture is then poured into moulds and vulcanized by placing the moulds bodily in tanks of hot water. Any shape and thickness is possible, and the resilience may also be varied in different parts of the same unit. Various standard shapes are kept in stock, but the delivery of special shapes to pattern does not take very long.

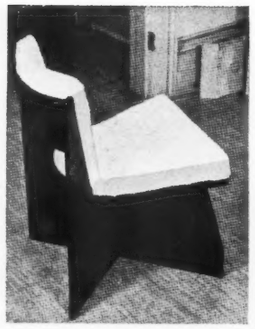
6, other Uses

"Other uses" covers such a multitude of applications that it is only possible to give a general idea of the extraordinarily wide field in which rubber is now used, even in the building industry: waterproof curtains for showers, rubber tops for tables and counters, lavatory seats, rubber covered plate racks, paints, non slip devices for carpets and rugs, baths and basins, sink linings, sponges, shower heads.

7, the Future and Synthetic Rubber

No consideration of the future of rubber can afford to ignore the possibilities of synthetic rubber, which has now reached a stage where it is definitely a practical proposition. Natural rubber is a tree crop and not an agricultural product. Provided that enough land and seed are available annual crops can be increased to meet next year's demand, but with the rubber tree at least a five year plan is required. The intense national feelings of the past few years have stimulated the production of synthetic rubber to a considerable extent, and there is also the argument that factory production enables the supply to be more closely adjusted to the demand. During the last two or three years the daily press has maintained a continuous derision of the German attempts to produce synthetic rubber, and has suggested that it is not only an extremely expensive product but that it is almost useless as a substitute for rubber. Both these statements are definitely false, for the Russian Sovprene, the German Buna rubbers and the Neoprene evolved by I.C.I. and Dupont in America all have certain very marked advantages over natural rubber, though it must be admitted that they are more expensive. Of the three synthetic rubbers listed the only one available in this country in any quantity is Neoprene, and this material shows a higher resistance than natural rubber to heat, oils, sunlight and corrosive chemicals, while it has a smaller permeability towards gases and a lower water absorption. So far from being a failure, synthetic rubbers are already used in a number of aircraft engine parts where natural rubber would not stand up to the conditions. Most important of all, synthetic rubber does not support combustion.

In spite of the fact that the I.G. Dye Trust in Germany has produced synthetic motor tyres with anything from 10 to 30 per cent. greater resistance to abrasion than natural rubber, it would be ridiculous to pretend that the era of natural rubber is at an end. Synthetic rubber is a new material which has certain definite advantages over the material which it imitates. Its development will no doubt lead to new types of rubber which will have characteristics far beyond the ideas of the present rubber manufacturer. Synthetic and natural rubber are complementary materials, and, instead of finding new uses for an already existing material, it should be possible to produce a rubber to fulfil a specified set of conditions.



1

2

3

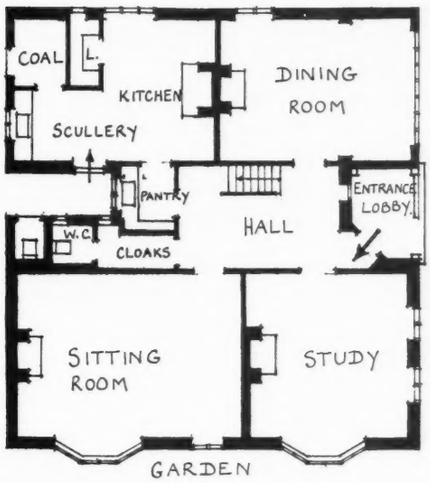
The advantages of latex sponge cushioning for upholstery are shown in these modern chairs. It is both lighter and easier to clean than other forms of upholstery and generally provides a greater degree of comfort. 1, a chair designed by Christopher Nicholson as a standard model for the Pioneer Health Centre at Peckham. 2, and 3, chairs designed by Messrs. Heal. The first by E. Maxwell Fry and Jack Howe and the second by F. R. S. Yorke and Marcel Breuer.

RUBBER UPHOLSTERY

REPLANNING OF A HOUSE IN HAMPSTEAD

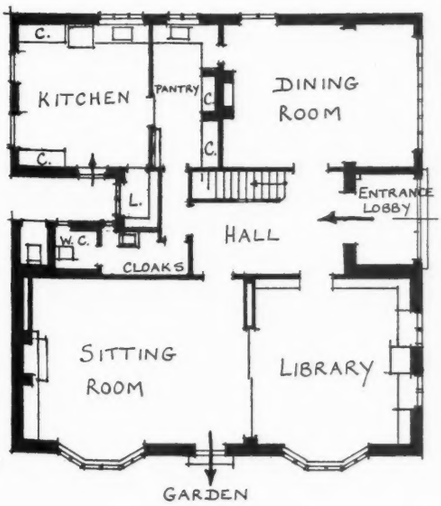
As can be seen in the plans below, the main task of reconstruction was the replanning and linking up of the two garden rooms. The entrance has also been straightened, the cloakroom widened and the kitchen quarters properly organized, built-in cupboards being provided. Sliding doors have been fitted between the old sitting-room and study covering two thirds of the width of the room.
The interior decoration of the two rooms has been carried out so as to maintain their essential unity while making them different in character. The fitted carpet runs right through both rooms. The same colours are used, but in different proportions ; e.g. the red tone of the sitting-room curtains reappears in the chair covers of the library, and the yellow of the library curtains in the sitting-room cushions. Both rooms have indirect lighting, reflected from the ceiling in the library and from the walls in the sitting-room. Furniture in the sitting-room consists of loose period pieces, while in the library, in which the walls are panelled, it is largely built in. 1, the sitting-room seen from the library, and 2, the library from the sitting-room.

1



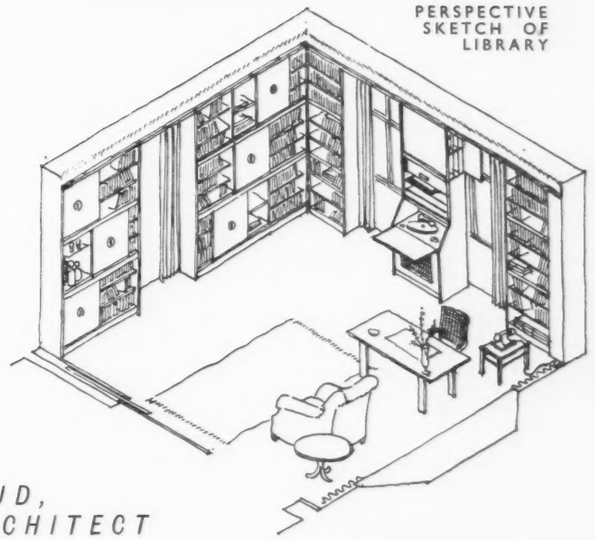
GROUND FLOOR
BEFORE RECONSTRUCTION

2



GROUND FLOOR
AFTER RECONSTRUCTION

PERSPECTIVE SKETCH OF LIBRARY

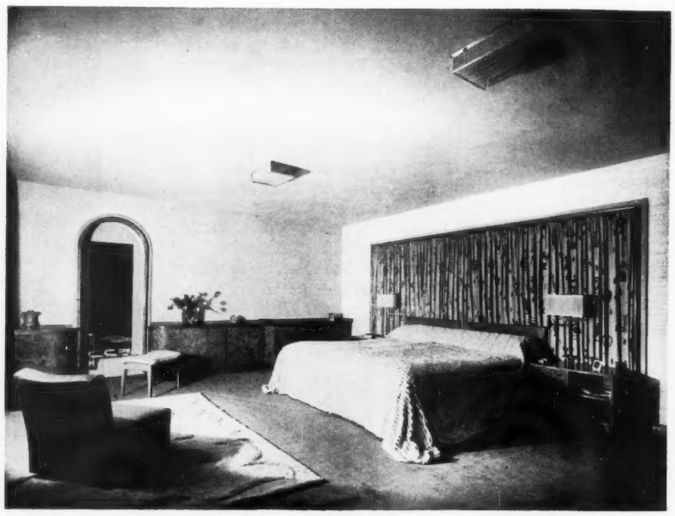


ERNST L. FREUD,
ARCHITECT

REPLANNING OF A HOUSE IN HAMPSTEAD

The sitting-room is close carpeted in a light green Wilton with a Samarkand rug in pale yellow, green and pink. The walls are off-white and the curtains designed by Marion Dorn are cherry-red and white. The chair covers are cream and green Chinese silk and the cushions red and yellow. The period furniture is mahogany. The wall decoration is by Hans Feibusch. In the library the same carpet is used with a dark Bokhara rug. The curtains are yellow in a heavy material also designed by Marion Dorn, and the chair covers are dark green and red. The built-in bookshelves are partly open and partly closed with sliding doors. There is a built-in radiogramophone with shelves for records. 3, another view of the sitting-room from the library. The bedroom, 4, is close carpeted in powder blue Wilton. The walls are covered in Japanese grass-cloth. The curtains are blue, grey and red on a light grey ground designed by Riette Sturge-Moore. The furniture is in burr ash.

3



4

BULLETIN OF STANDARD DESIGNS

These pieces of furniture designed by David Booth and R. G. France are to be included in a series to be produced by Messrs. John Lewis.

The prevalent taste for sideboards with all four sides flush is certainly expensive and not always functional. In this design the ends and back rail stand above the top to form a rim on three sides. In the cheapest woods the price would be £8 8s. 0*d*.

The Elizabethan drawleaf method is still generally used for dining-tables, but the pivotted leaf arrangement evolved for this design is simpler in operation and neater in appearance than other available designs. The price in natural colour oak is £6 6s. 0*d*.

English Houses through French Eyes

There is a general lack of stone in England. It is found in such small quantities and in so few places that it is a sign of magnificence to use stone for public buildings. Houses are generally built of brick or of plaster and timber and consequently are low in height and lacking in architectural distinction. At the same time their form is pleasing. The houses in a town or village are small, since they never accommodate more than one household; the general custom, when the children marry, is for them to take a house and to set up their own establishment, which leads to their marrying at a later age than in France.

But to return to the houses in the towns, the ground floor is always lived in since it contains the best rooms. The arrangement of an English house is roughly as follows: you enter by a small door over which is a small pediment (the door is never a large one, since there is no need for it), you find yourself first in an entrance hall which is always very clean and more like a room than one of our own vestibules which are always dirty; then you come to the dining-room, which is always large; above the dining-room is the drawing-room, which is always of the same shape and is reached by a spotlessly clean staircase; the hand-rails are of mahogany in beautiful condition; the stairs, like the floors, are made of boards of fir or pine-wood, fitted together as exactly as mosaic work; above the entrance hall is a bedroom and sometimes an apartment or two; the kitchen is always on the ground floor and at the back. It is a general custom in England, which would not be liked in France, to have the dining-room below and the drawing-room above; people find this more convenient for the servants and make no trouble of going up a staircase of twenty steps or so. What I find very inconvenient is the lack of an ante-room or something of the kind, since the dining-room door always leads straight into the hall and the drawing-room door straight on to the staircase, with the result that when they are opened one feels a considerable breeze round one's legs.

I particularly like the doors: they are always smooth and shut firmly; they are generally made of mahogany two inches thick so that the lock can be fitted into the thickness of the wood and is never seen; all that one sees are the brass bolts and the key is always beautifully made. The chairs and tables are also made of mahogany of fine quality and have a brilliant polish like that of finely-tempered steel.

The chimney-pieces are not made like ours with mantle-shelves and panels above, but are always square in shape. The grates are made of iron and are highly polished.

Three houses out of four have a little turret at one end which adds space to the dining-room and drawing-room. The rooms are thus given a very pleasant shape and more light is admitted, since it is possible to put three large windows in the curve of the tower where otherwise there would only have been room for two.

The country houses, known as castles, are usually built of brick. They are huge, but heavy and architecturally not attractive; it is seldom that one sees a handsome elevation. The internal arrangement corresponds in some measure with that which I have described in relation to town houses, for the English do not trouble about the pleasure of making a really satisfactory arrangement of their rooms. In an English house you never see a private door, a private room or a closet.

The cleanliness which pervades everything is a perpetual source of satisfaction. Houses are constantly washed inside and out, generally on Saturdays. People take the greatest possible pains to maintain the standard of cleanliness: you come upon mats and carpets everywhere; there is always a strip of drugget on the stairs, and not a speck of dust anywhere. At first I was quite astonished at all this and did all that I could to make sure whether this cleanliness was natural to the English and so pervaded all their activities, or whether it was a superficial refinement. I was led to see quite clearly that it was only external: everything that you are supposed to see partakes of this most desirable quality, but the English contrive to neglect it in what you are not supposed to see.

FRANÇOIS DE LA ROCHEFOUCAULD (1784).

MARGINALIA

Frank Lloyd Wright and Modern Architecture

Following Mr. Frank Lloyd Wright's visit to this country last summer, when he gave a number of lectures at the Royal Institute of British Architects under the auspices of the Sulgrave Manor Board, he has written the following account of his reactions to English architectural thought as he observed it.

TO THE FIFTY-EIGHTH

If printed reactions to my talks in London — no speaker really — which should have reached me there but now reach me at Taliesin mean anything, I have succeeded in getting myself misunderstood and well disliked, especially by those who should have been quick to understand me. I refer to the 58th variety—" the fruit of my own orchard "? For such pains as I took in the circumstances I am accused of disowning the " fruit of my own orchard " when I intended only to cut down saplings interfering with good fruit. Therefore certain intellectualists (saplings) are saying I am changed to " escapist." A bad word, their word " escapist "? Why call names? Why not go to work? *Do* something on their own that doesn't take refuge with the incompetent in a " universal " pattern for something that (should it abide with principle) ought to be as alive and various as human character is itself!

And have I " changed " or only smashed myself as idol? I intended to smash that idol but only to let idol worshippers a little closer than they now seem to want to go. Hero worship is sometimes pretty awful. That any of mine can now bear hide or hair of me would surprise me.

But, can't they be sports and smart as they, and I, think they are? Don't they know that every word of their own European creed, every form they use at least if not the every way they use it, came either directly or indirectly from my own " *escape* "?

Can they really believe Taliesin turning its face away from life because it refuses to see any pattern as " fit for the establishment of any contemporary vernacular " whatsoever and lives out in the country instead of some urban backyard or city slum? Can they believe that we at Taliesin advocate a " back-to-the-land " movement? Do they really imagine that I build self-indulgencies for capitalistic parasites in the name of esoteric philosophy and work for the rich, that my buildings are expensive, etc., etc., . . .? I would like to compare the cost of them with the cost of theirs. Is the idea that good architecture must be, first of all, good building and the architect a master-builder first and an æsthetician afterward—heresy? Is the idea that good community life is the life of the individual raised to the nth power rather than the life of the individual reduced to the lowest common denominator — idealistic hallucination? Cake? In this connection I ask M.A.R.S. . . . again . . . which came first—hen or egg? Well—if the egg is the *Idea* then the egg came first—and, just so—society. First the great Individual (the Idea or Egg) then Society (the Hen). After that what have you?

Do they advocate abandoning women and children to be bombed in English, German, or Russian slums? All great cities are slums now—communism or no communism. They like them. Why?

Are they so in love with intellectualizations they can't see any true surface, or see any surface true, because of obliterating reflections? Then what hope to escape some universal pattern for the individual human soul named after some European?

I could only prove to them that today my building is as far in advance of my building, 1893–1911, as my building of that period was in advance of that around about it at the time, by teaching them to put two and two together so they will not make just *one* " four " but make *infinite* fours?

Once and for all concerning this constantly repeated reference to my contribution to Architecture as a kind of romanticism: because any attempt on their part to establish a " contemporary vernacular " is defied by the revelations of principle eternally fresh and new in every building I build—they drag in the term " Romanticism " to conceal their own impotence whereas it really only explains it.

I love Romance as I love sentiment. But just as I dislike sentimentality I would dislike their " Romance." I suggest you put a gently sloping roof on any Le Corbusier or Gropius just to see what you have left of the so-called International Style after proper deductions have been made.

Boys, you are all going knowing *why* but not knowing *where*. Then why do you speak so much and so surely of *how?*

And I see some chance remark of mine led a few to draw the absurd conclusion that we at Taliesin don't keep in touch with " life as is " because we aren't newspaper addicts.

Have I " changed " because I used to say the machine is the artist's tool and now say that man should use the machine and not the machine use man? Believing that I see, now as then, the only way he can use it I took the idea to them. Amused . . . a little bored . . . I observe the fact that those who got the seed and raise the flowers now consider themselves creative-par with the seed they use. Is this why some form of imitation in their generation is more acceptable than the original? Is that why my own thought and work must go home by way of some derivative, not by me? I accept that backwash as European reaction on the way toward the " International Style ": a style that could never be Democratic because it is *the use of man by the machine*. Are " they " striving to perfect that? Why thus fail to distinguish between the economies of living and the forces of life? That distinction is only " *Romantic* " to them? Is it?

If " only they " would take as much pains to really understand me as I have in trying to justify their presence in the " orchard "—we might go places together . . . mutual help . . . first aid to a desperate world in dire need.

Well—what do " they " say?

. . . .

I began my work as architect by sensibly accepting the machine as the creative artist's inevitable tool believing that only where such as he had it in control could it prove a blessing instead of a curse. I saw the consequences of machinery: standardization, extreme urbanization, human life becoming more and more vicarious and so more and more removed from the ground. I saw that life might be made dependent upon push button and steering wheel—saw it without flinching. I saw human energy reduced to Ohms and K.W., germs and glands—saw life centralized until it was at the mercy of the push button and steering wheel—still believing salvation lay in creative artist control. I had faith in that.

I still have faith. But, *where is that creative force today?* The man is not using the machine! *The machine is using the man*, using him so he is losing himself . . . becoming a " thing " beneath his push button and steering wheel. Neither are *by* him or *for* him. Already he is started and steered by forces beyond his control, owing to feudal hangovers society will not yet give up.

I see now as I saw then—that the only way man can use the machine—not let it use him—is to get it as a working principle into work by way of the great human force we used to call creative-artist. Well . . . again, where is he?

If he exists now he will probably be found under some other name, because, as he stood, in no man's land the machine has already wiped him out as any constructive element in social life today. I foresaw this possibility. I did not accept it.

Le Corbusier, Gropius, et al, are yet where I stood in 1900. I do not recant nor resign the position I then took but I have *experienced* my own philosophy. I have seen it taking partial effect by way of the generations following me. What I started to do, with high faith, and confidence in human-creative forces, I see giving way to certain sterilizing factors in my original equation. Instead of mastering those factors on the side of creation, Europe has seen only a new æsthetic for academic consumption in a foolish effort to establish a contemporary vernacular. So, bid to England, I came with another " Declaration of Independence." This time one concerned, not with taxes, but with independence of any æsthetic whatsoever where this matter of *life as structure* is concerned—social, political, or artistic. I said that the only way man can use his machine and *keep alive what is best in him* is to go by means of it to the larger freedom the machine makes possible—go toward *decentralization* instead of continuing the centralization the machine exploits and, so far as any great human benefit goes, will soon explode.

Simple enough?

Do I continue to befog the issue? If so the Machine itself will prove me right. Meantime I can wait and work.

HOLLINGBOURNE CHURCHYARD

The curiously lifelike effect of the carved headstones of the Medway Valley and adjacent districts is illustrated by this photograph. The work of 17th and 18th century primitive carvers in this neighbourhood shows a surprising virility and a profound expression of the significance of death. It is dealt with in an article by Innes Hart on pages 185-188 of this issue.

Acknowledgment

We are indebted to Messrs. Gordon Russell Ltd. for the loan of the photograph No. 3 used on page 178 of the Fabric supplement in our October issue.

CORRESPONDENCE

Register of Designers

The Editor,

THE ARCHITECTURAL REVIEW.

SIR,

The Register is conducting an enquiry into the condition of employment among all artists and designers under the present circumstances and we should be very glad if you would grant us the hospitality of your columns in order to request designers, whether Registered or not, to enable us to make an accurate report on this matter by :—

(*a*) Informing us whether their normal occupation has ceased owing to the War.

(*b*) Whether they are engaged in other work which does not make use of their abilities as a designer, i.e., A.R.P. work, Military Service, etc.

We should be grateful if designers would supply us with this information at the earliest possible date.

Yours etc.,

T. A. FENNEMORE

(Registrar, The National Register of Industrial Designers).

THE GEORGIAN SCENE

Wisbech, on the River Nene, is both a market town and a port. Its period of greatest prosperity was the eighteenth and early nineteenth century, when river-born traffic made it one of the important trading centres of East Anglia. At that time it must have been a typical Georgian town but more spectacular than most because of its unique lay-out alongside its river. Today it preserves a good deal of its distinctive character and many of its Georgian buildings. But up till about 1860 it preserved them almost intact. This is proved by a collection of photographs of the town taken in the fifties and early sixties which is preserved in the local Museum. One of these, showing Cornhill with its elegant shop-fronts, is reproduced above. It is dated 1854.

This series of photographs, which provides most valuable evidence of what a country town looked like eighty or ninety years ago, was taken by Samuel Smith, an enthusiastic local amateur, who was born in 1802 and died in 1892 in his 91st year. He was a well-known local character and was known as "Philosopher" Smith. Gardiner's *History of Wisbech* says of him that, "he was a typical example of the encyclopædic amateur scientist so characteristic of the first half of the nineteenth century. He was an ardent numismatist and possessed a large collection of coins and tokens. Other pursuits were mineralogy, conchology and entomology, in all of which studies he formed extensive collections. He and his wife critically examined their various specimens with the aid of a powerful microscope made by himself. He was a skilled mechanic, even grinding and polishing his own specula. He was an early worker in photography . . ." Samuel Smith's photographs were taken by the Talbot-Type process, and the prints reproduced above and on pages 237–239 of this issue were specially made from the original paper negatives by kind permission of Mr. L. Curtis-Edwards, curator of the Wisbech Museum, where Smith's collection of shells and minerals is also preserved. His photographs are remarkably clear technically and also show that talent for pictorial composition so often found in the work of the early students of photography.

The Village College Idea

The fourth—and the most interesting architecturally—of the series of Village Colleges which have brought Cambridgeshire a new reputation as a pioneer in the field of education, has just been completed. It is illustrated in this issue. As it constitutes an entirely new architectural type the following brief account is given of the idea behind the Village College and the social needs on which it is based.

THE English village as a social unit is a relic of the middle ages and the pre-industrial age of the seventeenth and eighteenth centuries. It belongs to a time when there were no roads in the modern sense and no rapid transport, and when, from the point of view of industry and social services, it did not matter whether people lived in groups of two hundred, five hundred or a thousand. The economical provision of social services and amenities demands a social unit of many thousands; and this is the reason why not only the instrumental services, such as sanitation, water and light, but also the immense development of education, especially of the secondary and technical type during the nineteenth century, have taken place wholly in the towns of England. During the past thirty years, and even today, the countryside, if it desires educational opportunity, must seek it in the town. Since the industrial age began over a hundred years ago the countryside, not only culturally and socially, but in economic opportunity, has been increasingly dependent on our urban civilization. Modern motor transport, rapid, cheap and ubiquitous, is finally completing the process, so that the rural community of all ages, and especially the young, have their faces turned habitually to the town.

It is time we were more realistic and less romantic about the village. The village has ceased to be an independent social unit. The history of civilization, it has been said, is the history of progressive towns dragging in their wake a reluctant countryside. The village looked at from the Tudor manor house or the Queen Anne rectory or the weekend cottage has quite a different aspect from that of the village worker and youth. By itself the independent village cannot provide the fuller life both culturally and socially that increased leisure and facilities make possible and which the young are determined to have. One of the most disastrous of our social failures is the omission, in spite of our enormous wealth, to provide on a wide and imaginative scale communal facilities for every kind of cultural and recreational pursuit. Our towns are squalid and chaotic dormitories sicklied o'er with commercialized amusement; they should be and will one day be deliberately organized by the community for the art of living the full life. Is it possible for the countryside to realize this ideal independently of the towns? That is the problem. The independent village has gone for ever.

The only alternative to the complete subordination of the countryside to the town is the adoption of the rural region as a cultural and social unit, parallel to that of the town. The choice is no longer between village and town but between the rural region and the town. Unless we can interpose the rural region between the village and the town, the village is doomed and the victory of the town will be complete. This is the answer to those who imagine that they will preserve the village by resisting reorganization in rural education.

The modern transport that will otherwise transform our countryside into a vast and far-spread suburb can here be our friend—it can make the rural region compact and accessible from all points, and can weld it into a genuine social unity. Indeed, one type of rural region, namely the small country town of two or three thousand people and its adjacent villages, already exists as a traditional and geographical unit in the English countryside—transport will serve to reinforce it. The other kind of rural region, a group of villages centering round a large village can be made into a no less successful cultural and social unit.

The Hadow report has been published a dozen years; and educationists and administrators and the public are just becoming accustomed to the idea, which it initiated, of Senior Schools in central places for the education of the older children of the countryside. But the ideal is something much more comprehensive: not only a post-primary educational system for the older children, but also the fullest opportunities for adult education, including the countryside's own technical education in agriculture, and for recreation; that is, that there should be a cultural and social life for the countryside in its own right and independent of that of the towns.

To achieve this the rural senior school as such, in its strictly conventional conception, with limited buildings and accommodation, and with its peculiar adolescent ethos, is insufficient; it may, in fact, actually prove an obstacle, organize it as a night school as much as we may. We must start with the conception of a community centre serving the population of a rural region *at all points and at all ages*—a community centre on as generous a scale as possible which, while housing the senior school in the day time, will provide a theatre for the habituation of the adult community beyond the school leaving age, in science and the humanities and in health and the corporate life. We have been hearing much during the past years about the development of technical and adult education and of physical training and health education. We cannot provide technical institutes for small country towns, much less for groups of villages. But one way in which technical and adult education can be shared by the country towns and villages of England is by means of the community centre which houses the senior school in the daytime. Here we have a solution that is at once effective and economical.

Mr. Henry Morris, the Cambridgeshire Education Secretary, who is responsible for the experiments that his own county is making in putting such an ideal into practice, described his con-

Architectural progress in Cambridgeshire: above are the first three of the Cambridgeshire Village Colleges; the fourth, just completed, is illustrated on the following pages. In their architectural character they show a consistently growing appreciation of what modern architecture might do to provide an idyllic setting for modern education, from Sawston's symmetrical eighteenth-century pastiche through experiments in a non-historical style to the assured and sensitive modernity of Impington. Left to right: Sawston Village College, designed by H. H. Dunn and James Shearer and opened in 1928; Bottisham Village College and Linton Village College, both designed by S. E. Urwin, the Cambridgeshire county architect, and both opened in 1937, after a delay caused by the slump. Impington, on the facing page, was opened this autumn.

A sketch map of Cambridgeshire showing the four rural areas served by the four Village Colleges already built, each in a village as near as possible to the centre of its area. The complete scheme covers the whole county (excluding the Isle of Ely) in nine areas.

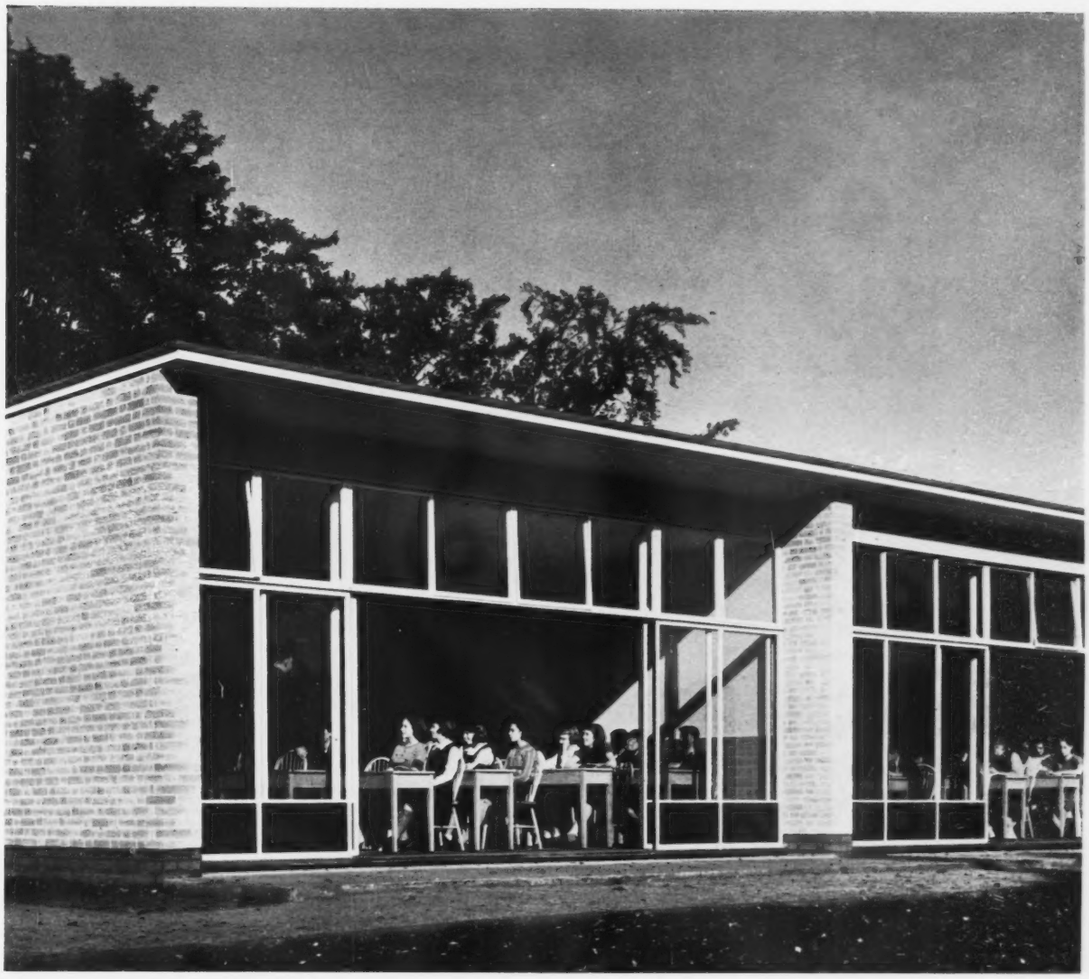
ception of the regional village community in a paper which he read last year at the summer conference of the Institute of Public Administration. After outlining the social mission such a community is needed to fulfil, as set out above, he went on to describe its physical embodiment as he visualized it; that is, its buildings. He first defined the assembly hall as the core of the scheme: it should have modern stage and film equipment and have a good kitchen attached to it. In the average rural region it would be by far the best hall for public purposes and would become the home of many activities: drama, music, meetings, dances and festivals—all this apart from its day-to-day school use. He divided the remaining accommodation into four groups: first the grounds, which should be of at least 12 acres, with a school garden and playing and recreation fields; secondly, the classrooms for the daily use of the senior school; thirdly, rooms for practical activities, for the use of the school but equipped for adult use in the evenings, including science laboratories, domestic science and art rooms, a workshop and a gymnasium and swimming bath; fourthly, the adult section, including library, common room, lecture room, reading room and games rooms. He also suggested, as further provisions, a club-room or hut for young people of fifteen or sixteen who have just left school, especially for the use of boy scouts and girl guides, and a simple observatory. He added that ideally the junior school of the central village should be incorporated in the community centre, as a self-contained unit on which the junior schools of the other villages could be modelled. Attached to it would be a nursery school and welfare clinic.

The important thing about these Utopian sounding ideas is that they are already to a considerable degree being put into practice. Under Henry Morris's administration the Cambridge education authorities have divided the rural parts of the county into nine regions, and already four of these regions have their community centres. First of all collective senior schools are situated in the central village of each region to which the scholars are brought daily in buses from the outlying region. This, of course, is the regular practice since the Hadow report initiated the system of grouped senior schools; the revolutionary innovation exemplified in the four completed Cambridgeshire schemes is that these schools are not merely schools, circumscribed by all the limitations of the classroom outlook, but are housed in carefully thought-out buildings designed to provide a community centre for the whole region. Here the school does not cease to concern the boy or girl at school-leaving age, but caters also for their adult life and interests, providing them with a club, a centre for their various co-operative activities, a branch of the County Library, and opportunity to continue their own education in the branch of study they may happen to be interested in or that their vocation demands. The village community has the chance of regaining that liveliness and corporate sense the lack of which drives its best members to the towns.

Of the four Village Colleges completed in Cambridgeshire, Impington is the most ambitious and the most enlightened architecturally. It includes most of the accommodation suggested by Mr. Morris in his paper already quoted, and has an interesting and valuable addition to the plan in the form of an open hall or promenade, alongside the assembly hall, which serves the purpose of an informal strolling ground during intervals when performances are taking place in the hall, of an exhibition gallery and of a bad-weather playground.

Impington is not entirely the fruit of official educational enterprise. The grant regulations of the Board of Education are far-reaching nowadays, and enable an enlightened local authority to go a long way towards putting into practice a full community centre system on these lines. Although accommodation specially set aside for adult use is naturally not included in the Board's recommendations for senior school building, suitability for evening use as a cultural and social centre is stressed as desirable and the necessity for a large hall, for a library and for practical rooms such as domestic science rooms is also stressed. The Impington Village College, however, has been enabled to approach closer to the ideal by private financial assistance. The total cost of the building and the lay-out of the grounds was £31,000. Of this, £1,200 was given by a group of subscribers so that a model rural community centre could be designed by Professor Walter Gropius and his English partner, E. Maxwell Fry, £1,000 was given by the Sir Halley Stuart Trust, £800 by the Carnegie Trust and £8,000 by Messrs. Chivers, whose factory is in the adjoining village of Histon. The Chivers family also gave the land on which the College is built in memory of the late Mr. John Chivers. The remaining sum, £20,000, has been contributed half by the Government and half by the Cambridgeshire County Council.

The photographs of Impington Village College on the following pages are a series specially taken for THE ARCHITECTURAL REVIEW by M. O. Dell and H. L. Wainwright, its official photographers.



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1, a close-up of the end of the class-room wing, showing the sliding windows, facing south-east, that can be thrown open to the garden. 2, a general view from the north-east with the library block on the right.

IMPINGTON VILLAGE COLLEGE

WALTER GROPIUS AND E. MAXWELL FRY, ARCHITECTS

This is the fourth of a series of Village Colleges to be built in Cambridgeshire. The idea behind them has been outlined on the preceding pages. The Impington site is one of seven and a half acres and was formerly Impington Park. It contained many fine trees, and the College has been planned so as to take the greatest possible advantage of them and to preserve as many of them as possible. It is principally a single-storey building, but with a two-storey block at the back of the large assembly hall which, together with the " promenade " or crush-hall, forms the centre of the plan. The rest of the accommodation is contained in two wings, running approximately north-east and south-west : a class-room wing housing the senior school, and the adult recreation wing, used chiefly in the evenings and consisting of common room, games rooms, lecture room and library. It has a separate entrance at the library end. The school portion was planned for 240 pupils (boys and girls) aged 11 to 15 years, though the number was increased to 280 after work on the building had begun. Each section of the building is directly accessible from the " promenade," which serves also as a

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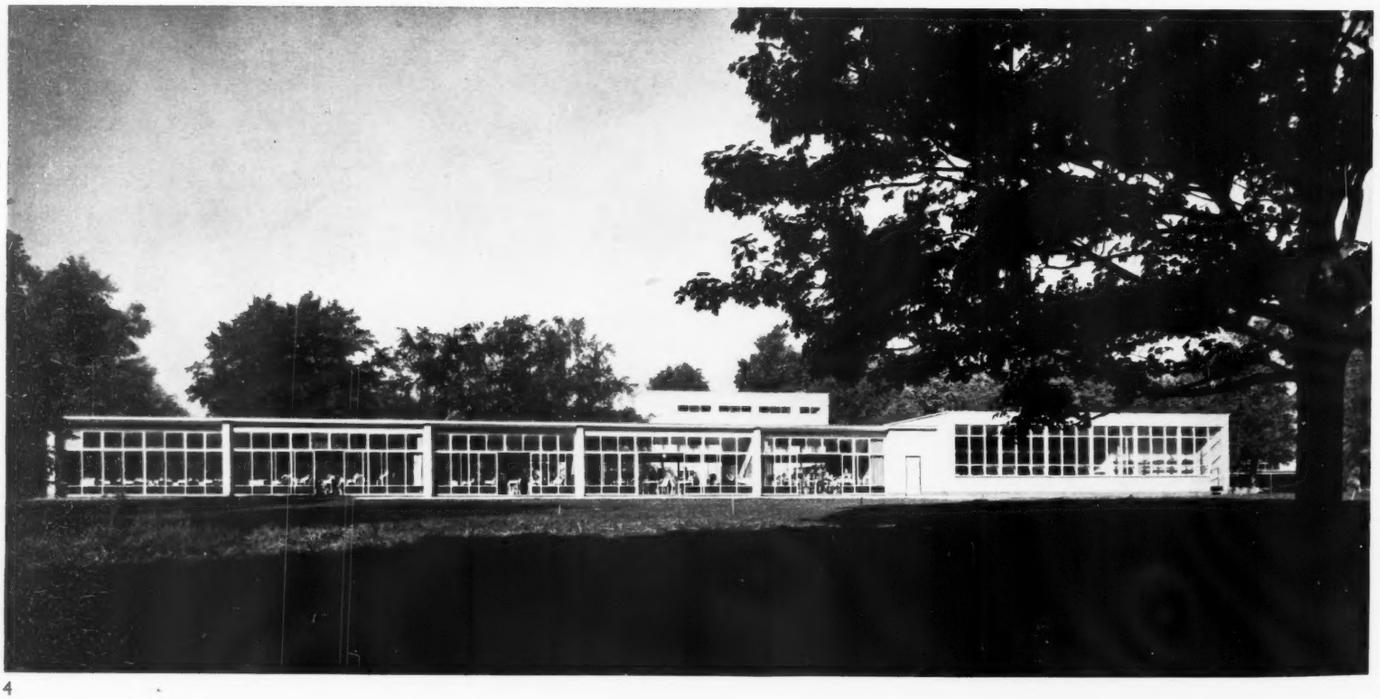

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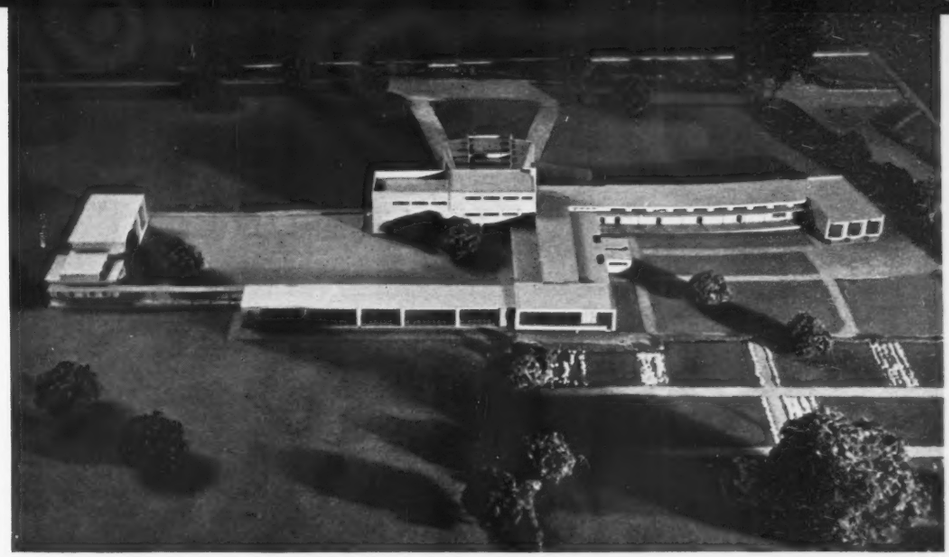
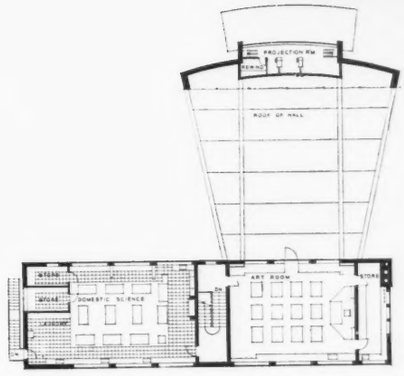
mid-day dining hall for the school. The class-room wing is served by a covered way along one side. This allows a very open character to be given to the rooms by forming two of their walls entirely of glass—see illustrations 1 and 4. This wing contains five class-rooms and a science laboratory. Only two of the former are general subject class-rooms, the others being specially furnished as follows : one for history and geography, with large tables for reading and drawing maps, illuminated glass tracing table, plan and map chests and equipment for modelling in clay and plasticine ; one for needlework, with special extending light fittings, dressing cubicles with full-length mirrors and hanging wardrobes and cupboards ; and one for English and drama, with a small stage provided with curtains and stage lighting, a radiogramophone and space for record storage. In the two-storey block (seen on the right in the top photograph above), reached from the other end of the promenade, are a domestic science room, a workshop and an art room. These latter, though designed for the use of the school in the daytime, are also fully equipped so that they can be used for more advanced teaching of adults in the evening.

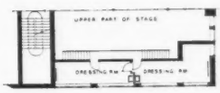
3, *A general view from the west, showing the assembly hall with its canopied entrance and the two-storey block containing the workshop and the domestic science and art rooms.* 4, *the class-room wing and science laboratory from the south-east. External walls are of a rough-textured yellow brick.*



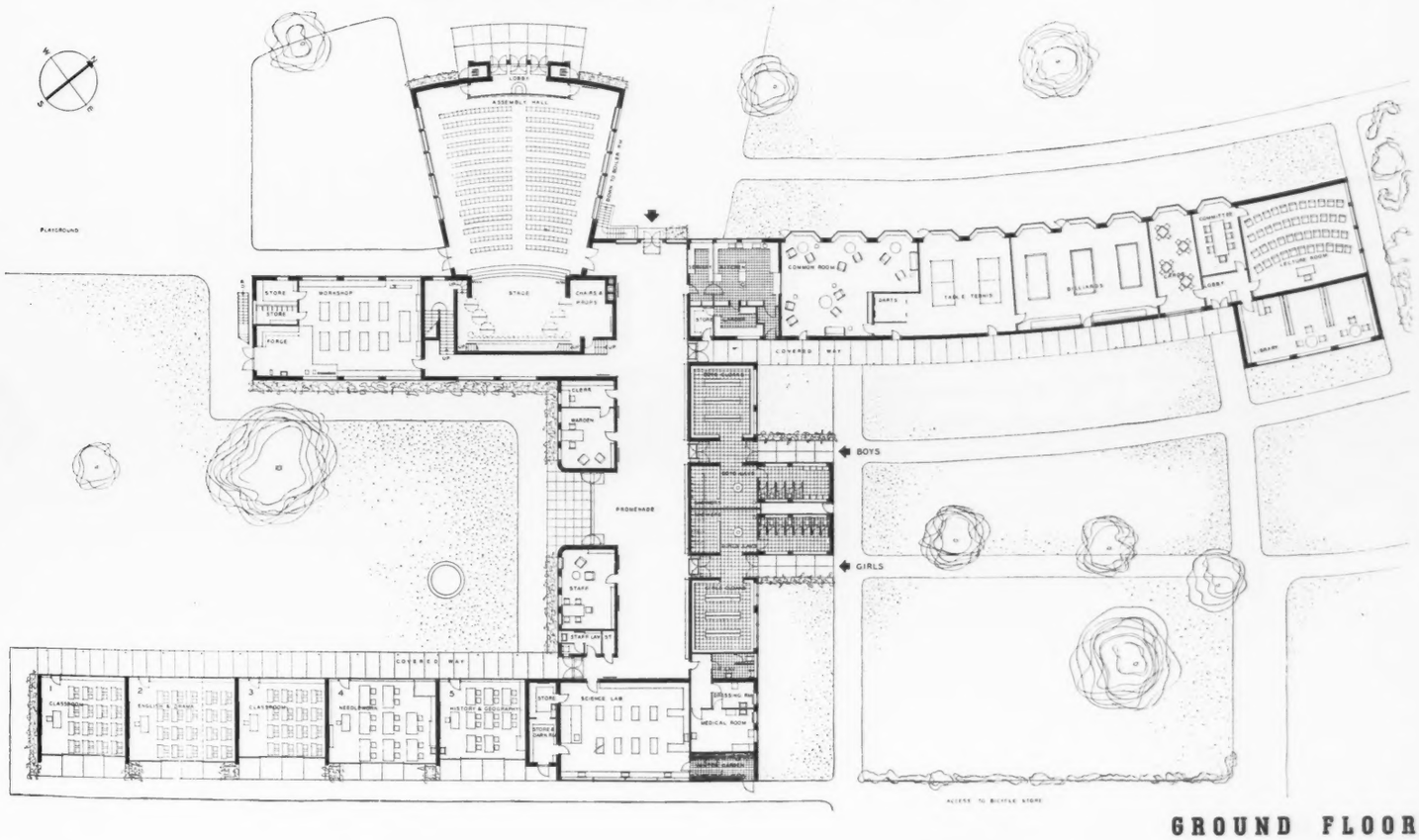
The above photograph of a model of the whole scheme shows, on the left, the gymnasium block which has not yet been built owing to the shortage of funds. It is to be linked with the main building by an extension of the covered way which runs alongside the classrooms, and will contain changing rooms and shower baths. In the present building, to meet the needs of physical training for which the assembly hall is temporarily used, a reduced number of shower baths have been provided in the lavatories.



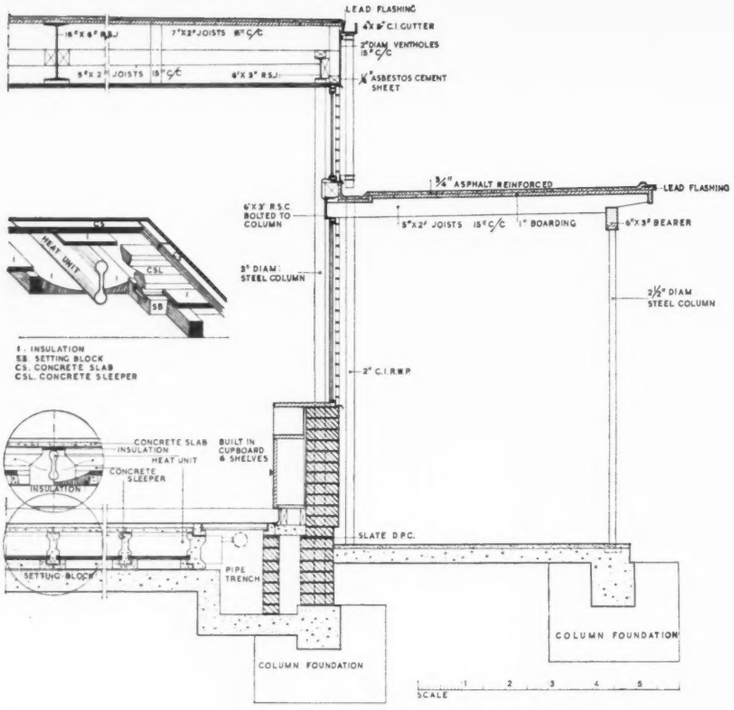
FIRST FLOOR



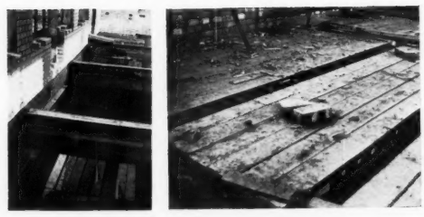
MEZZANINE FLOOR



GROUND FLOOR



SECTION THROUGH CLASS-ROOM SHOWING TYPICAL CONSTRUCTION



The two progress photographs above illustrate the system of underfloor heating used throughout the building. It is shown also in the ground floor class-room section adjoining. Left, the first floor under construction, showing the beams with flanges to take the concrete floor units. Right, the pre-cast concrete floor units, with holes through which the heated air circulates. The heating pipes run parallel to the floor units in the spaces shown in the photograph.

Construction and materials

Generally the construction is of weight-bearing brick walls, with steel used to a limited extent for roofing and in the construction of the assembly hall. Fourteen inch external brick walls are faced with rough textured yellow bricks, with dark brown bricks for the plinths, chimney stacks and the piers carrying the steel girders which span the hall roof. Roofs are of timber covered with boarding and asphalt. The class-rooms are divided by fourteen inch structural walls which carry the steel joists supporting the roof. This enables both sides to be completely glazed. On the south east side horizontally sliding windows give an opening of 50 per cent. When these windows are open the remaining windows at the sides are of two thicknesses of glass, providing excellent sound insulation by preventing sound shadow passing to the next room, a disadvantage difficult to rectify when folding sliding windows are used to give 100 per cent. opening. All windows are of steel. In as many cases as possible ceilings are covered with fibre board in V-jointed panels. This not only reduces reverberation but reduces the surfaces liable to crack. With this latter end in view plaster on walls was eliminated wherever possible. In many cases sand lime bricks, of a light grey colour, pointed with yellow cement, are used. Typical construction is shown in the diagram above.

Heating

In class-rooms and in the whole of the adult wing and the two-storey block underfloor heating is employed. Floors here (and in the promenade) are finished with compressed wood and composition blocks. This form of heating as carried out at Impington solves the old problem invariably experienced in the past in connection with floor heating in that the actual floor surface became too hot, in order to obtain the required temperature in the room, for comfort. In the case of the system used here the floor never gets hotter than 72 degrees to produce 65 degrees air temperature. In special rooms such as the workshop and domestic science room, where wall space is so valuable, the further advantage of eliminating radiators is obvious. In the case of the class-rooms it would be impossible to have effective radiator heating with large sliding windows down to the floor.

Sewage

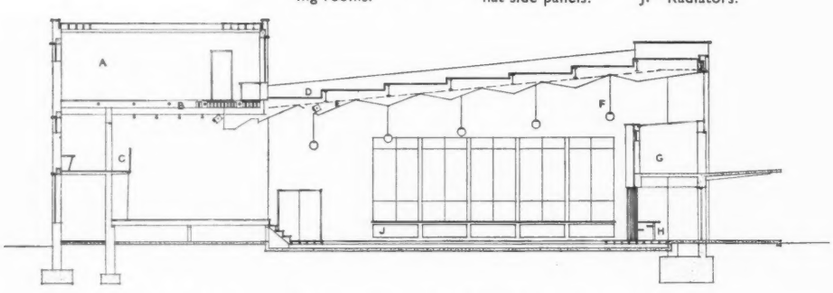
A sewage disposal plant is provided consisting of a septic tank and a filter fed by capillary wires attached to distributing troughs. This type of filter has the advantage of having no moving parts and the noise often objected to in the case of the tipper type of distributor is absent. From the filter the purified effluent is pumped up to ground level and disposed of through the soil by means of open jointed drains.

Cost

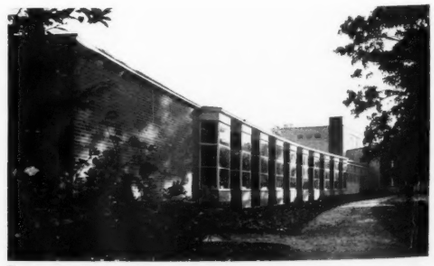
The total contract cost, excluding the laying-out and levelling of playing fields, was £26,656, which sum was not exceeded in actual building. This works out at 1s. 1·9d. per cubic foot including site works, and 1s. 1·2d. for the building only.

KEY TO SECTION

A. Art Room: with access to Assembly Hall.
B. Underfloor heating units.
C. Stage balcony used as access to dressing-rooms.
D. Main steel girders.
E. Ceiling reflector hung from cross beams.
F. Lights hanging from flat side panels.
G. Projection and rewind rooms on reinforced concrete "T" to balance cantilever of canopy.
H. Pay desk and light wood screen.
J. Radiators.



SECTION THROUGH ASSEMBLY HALL



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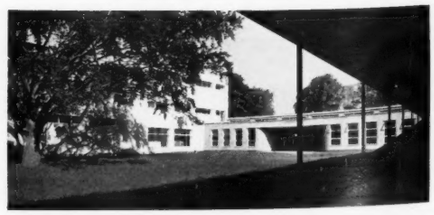

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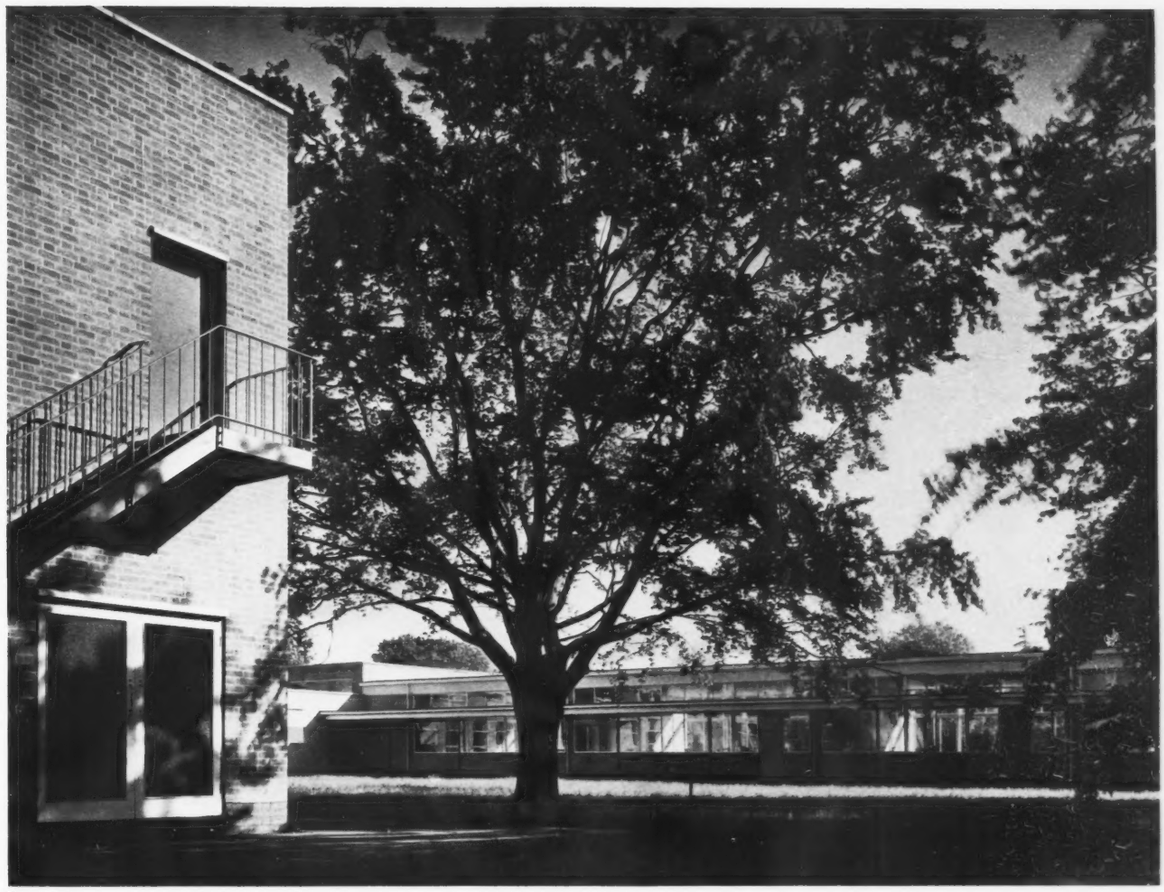

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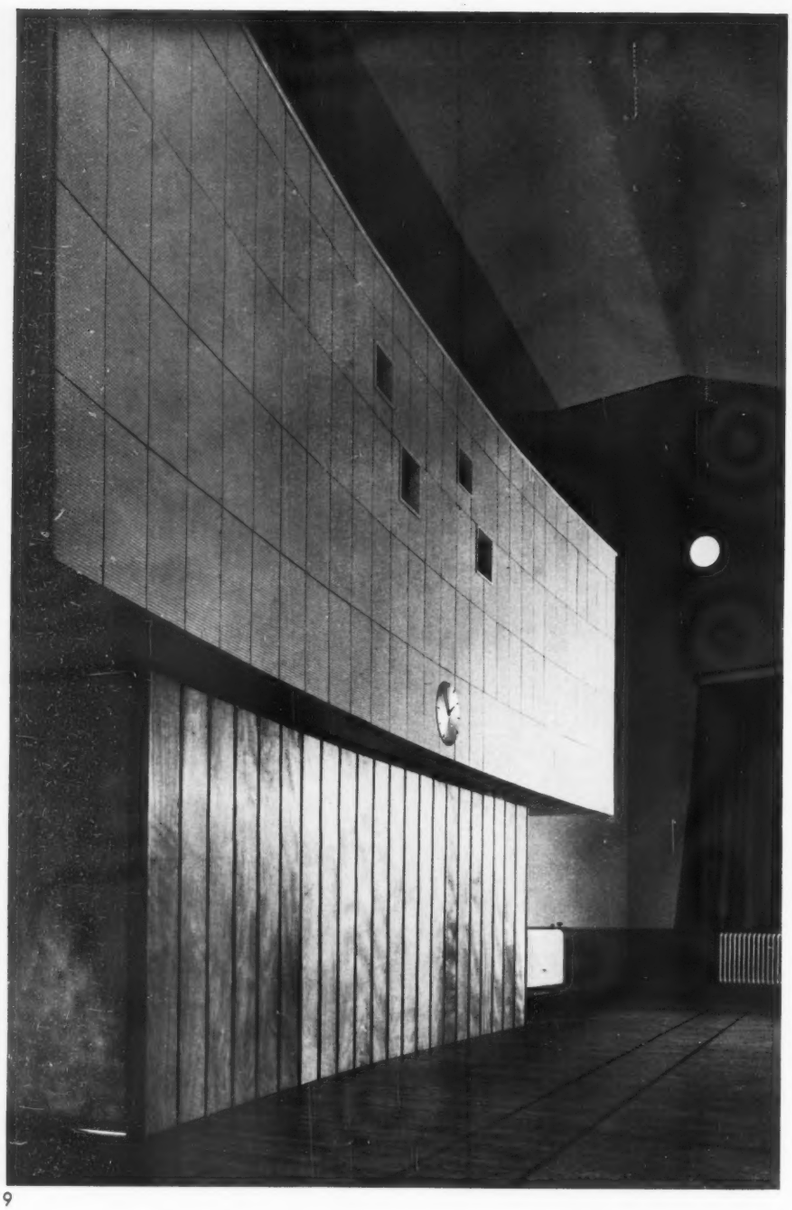
5, the west side of the adult recreation wing, which is curved in plan. The bay windows, which are designed to give a more intimate character to the interiors, light the committee room, the suite of games rooms and the common room. 6, a view taken from the covered way alongside the class-rooms, looking across the grass court towards the two-storey block and showing the windows of the staff rooms either side of the entrance to the " promenade." 7, a detail of the public entrance to the assembly hall. The three glazed doors lead to a small vestibule containing pay-boxes. The reinforced concrete canopy counterbalances the film projection room which is cantilevered on the inside of the wall. The piers at either end, which are in a purple-brown brick, contrasting with the light toned yellow brick used elsewhere, carry the main plate girders which support the hall roof. Beneath the canopy the wall is faced with glazed tiles in two shades of blue. 8, a portion of the class-room wing, with its covered-way approach, with the escape stair at the corner of the two-storey block on the left.



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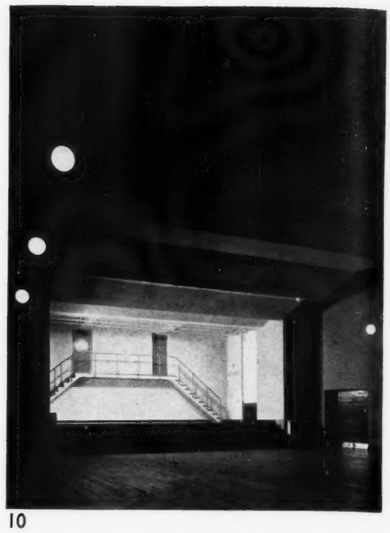

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ASSEMBLY HALL

The assembly hall has been designed for use as a cinema—it is wired for sound films—a concert hall for chamber music or a small orchestra, a repertory theatre and lecture hall. Two dressing-rooms are provided on a mezzanine floor at the back of the stage, approached by staircases and gallery which can be used in conjunction with curtains to form stage settings if necessary. A cyclorama is included and a system of back stage curtains in reversible sections on swivels and tracks will give opportunity for a large number of different setting arrangements. A minimum three colour stage lighting system has been provided by one batten of 300 watt floods plus five 500 watt front-of-house spots recessed in the ceiling. Outlets are provided for further battens and stage lamps should they be required. The lights are controlled both from the stage and from the hall. The hall, which seats 360, is fan shaped on plan with a sloping ceiling, the centre portion of which consists of a hard plaster reflector the width of the stage opening, and of zigzag section from front to back. This is painted white. The triangular portions of flat ceiling on each side of this reflector are faced with V-jointed fibre boards distempered blue. The projection room wall, 9, is faced with 1½-in. thick acoustic panels left in their natural colour. The walls are painted light grey.. The screen below the projection room is faced with mahogany plywood. Adjoining the projection room is a re-wind room : both are reached by stairs from the entrance vestibule.

THE PROMENADE

The promenade is the spine of the scheme and consists of a covered space 20 ft. wide and 140 ft. long from which all rooms in the building are approached. The provision of such a generous free space is of considerable psychological importance. The children congregate here before going to their classes and at other times during cold or wet weather. In connection with the entertainment side of the hall the promenade gives the essential but seldom attained freedom to wander before and during intervals of performances. Cloakrooms and lavatories open from one side alongside the boys' and girls' entrances. On the other, doors lead to staff, medical and wardens' rooms. Clerestory lighting is obtained over these rooms and a glass screen in the centre of one side gives a view of the grass court with its beech tree. The ceiling is faced with V-jointed fibre board distempered sulphur yellow. The walls are of sand lime bricks with yellow joints. Along one side are 280 lockers, fixed to the wall at a height easily reached by all children. They are painted blue and grey with polished aluminium handles running the length of the door. It is proposed that the promenade shall also be used for art exhibitions. The kitchen is situated between the promenade (where children's lunches are served) and the adult

12

9, *the cantilevered projection room at the end of the assembly hall.* 10, *looking down the assembly hall towards the stage, photographed without the curtain to show the permanent set provided by the double staircase at the back.* 11, *the "promenade."* 12, *looking into the science laboratory from the plant room. The latter, which is reached direct from the garden, is provided for the practical study of agriculture and botany.* 13, *the domestic science room.*

common room where refreshments can be had in the evenings. Sliding hatches open into the common room and the promenade.

LABORATORIES AND WORK SHOPS

The science laboratory, which occupies the end of the class-room wing, is fully equipped for physics, chemistry and electrical experiment. The centre benches are removable to facilitate group working. The doors at the far end lead to preparation and cloak rooms, which are also equipped for micro-projection. On the upper level of the two-storey block is the domestic science room. It includes a laundry, larder and kitchenette. Walls and floors have white tiles except in the centre of the floor where compressed wood blocks are laid over underfloor heating. Below it is the workshop, which contains a forge and large doors to allow a complete car chassis to be brought inside.

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14, *the library at the end of the adults' wing. It has three large windows facing south. Walls and ceilings are pale grey green, but the window wall is white. The bookshelves are painted white and are raised clear of the ground on tubular metal supports. The subdued colouring of the room gives proper prominence to the bright colours of the books.* 15, *the lecture room, next door to the library, facing north. It is used for small meetings and debates, and reverberation has been controlled by facing the ceiling with fibre board and the walls with Gaboon mahogany plywood. Chairs are covered with terra-cotta fabric. The windows have sulphur yellow curtains.*

Cambs

river port and Georgian market town

By J. M. Richards

This is not a history of Wisbech, nor is it a guide to the architectural beauties of Wisbech. It is a character study. The character of Wisbech is of course partly given to it by its beautiful Georgian buildings, but these are not remarkable so much for their independent worth as for their effect. Every town has its own personality, sometimes a vivid and unique one, more often nowadays one that can hardly be identified beneath the debris left by the mindless development and the stereotyped taste of recent years. But Wisbech is a town that has been fortunate in preserving a remarkably definite personality; not probably through any will of its own, but because there has not been much occasion for change since the town reached its peak of prosperity and, as it were, crystallized its form early in the nineteenth century, and because of the accidents of leasehold and property values.

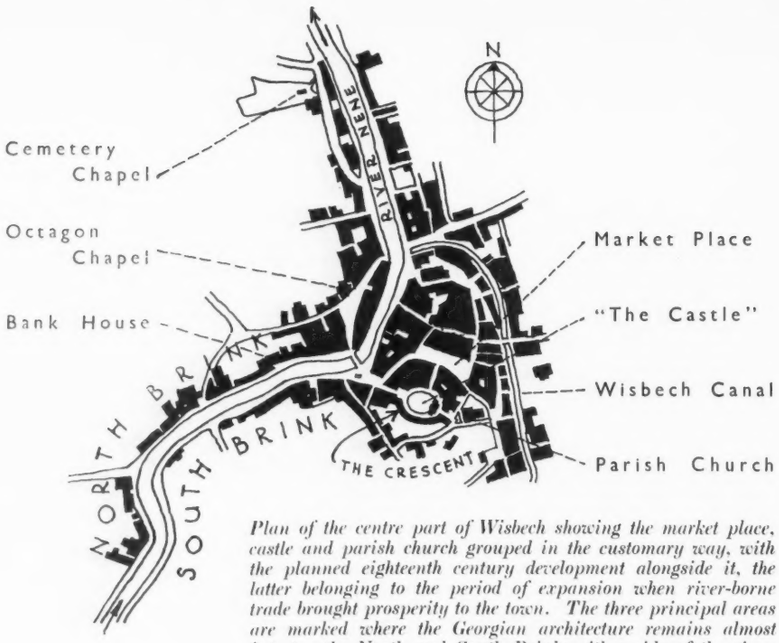
A year or so ago a more conscious effort was made to ensure the preservation of the best local buildings when the Wisbech Preservation Trust was formed by some local architectural enthusiasts. Its efforts are welcome. One can have nothing but sympathy for the aims of such a body, but only so long as it does not become merely antiquarian. For the shape and quality of Wisbech *qua* Wisbech are more valuable than all its monuments. A town can sedulously preserve a large proportion of these and still lose everything that makes them worth preserving; that which makes it different in character from other towns. England—particularly the South—is already losing this differentiation of character so fast that today you could be dumped down almost anywhere and not know in what kind of place you were—except somewhere in that universal Croydon towards which the townscapes of England are tending and which is the topographer's nightmare.

So this is an attempt to define, with the aid of photographs of the town as it was eighty years ago and as it appears today, the peculiar personality of Wisbech, with a plea that future development shall maintain it. Some description is added of the best of the buildings that contribute to that personality but are at the same time dependent on it for their worth as anything more than museum specimens. The town is looked at in these pages as it appears to a stranger, to whom its personality is perhaps the more startling because of its unfamiliarity and whose ignorance of the details of the town's history compels him to take notice of it only where it is evidenced by external character, and to ignore the dead letter of antiquarian fact and fable. The latter kind of information, essential in its place, can be found in the forthcoming Cambridgeshire volume of the *Victoria County Histories* and in several other works.

It is perhaps worth mentioning, however, as an indication of the town's antiquity, that it was the scene of one of the favourite episodes in our popular histories of England: King John's loss of all his luggage and regalia in the flood waters of the Wash. In those days the Marshland (which for some reason is the correct name for this, the eastern portion of the Fens, the word Fenland applying strictly only to the portion stretching up northward from the Isle of Ely) more literally deserved its name. The importance of Wisbech and other similar towns derives, however, from the later reclamation and drainage of the Marshland, which was to bring civilization to the region and make it, with its black alluvial soil, the richest arable land in England.

Wisbech had, and still has, a dual function, as a market and as a port. It grew up round its river and its chief glory is its river front. The river is the Nene, which is now part of the great fen drainage scheme, taking the water of the South Bank half-a-dozen miles above Wisbech and that of the North Level Main Drain at Foul Anchor half-a-dozen miles below, forming with these a system parallel to that of the Ouse, the Old Bedford River and the Hundred Foot Drain, though on a rather smaller scale. It flows into the Wash about eleven miles from Wisbech after taking leave of human society and all contemporary things at Sutton Bridge where it is crossed by the Spalding-King's Lynn road.

At Wisbech the river forms a bend. Exactly at the bend is a bridge, and the town has grown round it on either bank. The three elements that form the nucleus of nearly all towns are, in the case of Wisbech, grouped close together on the south side; that is, on the outside angle of the bend: the castle, or rather its site intelligently replanned—more about this later—the parish church and the market place. On the side away from the river this central portion of the town is bounded by the now disused Wisbech canal. At the bridge-head is the site of the old Butter Market. Facing the



Plan of the centre part of Wisbech showing the market place, castle and parish church grouped in the customary way, with the planned eighteenth century development alongside it, the latter belonging to the period of expansion when river-borne trade brought prosperity to the town. The three principal areas are marked where the Georgian architecture remains almost intact: the North and South Brinks either side of the river, and the Crescent built around the site of the old castle.

north end of the bridge is the later Town Hall and Corn Exchange, dating only from the end of the eighteenth century, and along either side of the river, below the bend, are the quays and warehouses that represent the real business of the town. For up the river from the sea came, and still do come, barges and other vessels fetching and carrying produce from this centre of the rich agricultural fenland: a land which throughout the eighteenth century and for much of the nineteenth, when Wisbech rose to prosperity, was the most go-ahead territory in England. Along the quays also are several great breweries of the same period, representing a local industry that also relied on water-borne traffic; and further down river once were ship-building yards and slipways, but these have now gone.

All this is the pattern of any river port of the fen country and indeed, but for the varying confluence of their rivers, might be a description of Boston or Holbeach, Spalding or King's Lynn; but the glory of Wisbech is its riverside above the bridge. Here, where in the main the shipping did not penetrate, the crowded warehouses give way to the residences of the merchants and other prosperous citizens. Along each river bank is a wide roadway—not only wide by the modest standards of the country town, but really wide, as the fen landscape is wide compared with that of the Home Counties. And the roadway is lined with a cliff-like terrace of buildings, following the curve of the river bank with consistent alignment though with varying skyline and pattern of façade. These two terraces are known as the South Brink and the North Brink. The former stretches for about four hundred yards, the latter, on the outside of the curve, for over half a mile, ending in the oblong pedimented block of Elgood's brewery. They are unique. The only thing they can be compared with is Brighton front. They have the same nautical robustness and the same sense of being a barrier, walling in a world of their own. Also, they can be looked at from sufficiently far away, for example from across the river, to give them the same panoramic scale. But they belong to the fens, not to the sea. Their flat façades, viewed like everything in the fens from a common level, giving them a low skyline with a high arch of sky above, have a quiet solidity in contrast to the more ebullient character of Brighton's bay-windowed terraces, which are best seen from below, towering up as a bulwark against the sea. Although in the most approved taste of their period, they are respectable and a little provincial, not knowing and raffish as at Brighton. They show their practical business-like nature by the small granaries or stores which adjoin several of the houses. From these stores produce could be loaded direct into small barges moored in front of the houses, sailing up river above the bridge on a high tide. One of these small brick warehouses, where one is told that mustard, a famous East Anglian commodity, used to be handled, can be seen in Plate ii, adjoining the third house from the left, in which lived the merchant to whom the warehouse belonged. Business was never far out of sight or mind in this serious community.

An eighteenth or early nineteenth century warehouse on Nene Quay, typical of the tall brick warehouses of the marsh and fen lands. A nautical character extends far inland.

Keeping company with these are one or two grand mansions, which share the river front equally with terraces of humbler cottages. For unlike most eighteenth century planning that of the Brinks has no class basis. All line up shoulder to shoulder: a democratic cross-section displaying many types along the one river front. In recent years even some Tudor-gabled villas have elbowed their way in, to make the collection of types more complete—up near the brewery end where the built-up urban character, so far from the centre of the town, was not very clearly defined.

Elgood's brewery itself, figure 1, which terminates the North Brink, is a fine example of that industrial functionalism of the early nineteenth century which yet paid tribute to the decencies of architectural taste in its controlled proportions, its pedimented roof lines and its keystoned entrance archways. East Anglia is rich in this type of building, to which the warehouses along the riverside in the centre of the town with their characteristic Dutch flavour also belong. It is one of the best developments of the fine brick tradition of the region. The brewery still works, though served by road transport instead of water. On the near side of it the architecture is not very distinguished, or would not be if its setting did not make it so, and numerous stretches of garden walls and fences interrupt the regular terrace effect. Here the somewhat grim square block of the Girls' High School gives the first indication of imposing urban scale. But beyond the corner of Chapel Road, the cliff-like sweep of the Brink begins in earnest, though the architectural variety is still considerable within the frame-work provided by its consistent alignment and pictorial relationship to the river-bank in front. Water is well known to have a unifying effect on architectural dissimilarity: perhaps only because reflections in the water introduce the element of symmetry into at least one axis.

The most striking building here is a row of tall Gothic houses dating presumably from the eighteen-fifties, in yellow brick with steep crow-stepped gables. They have a pleasing drama, and it is a tribute to the overwhelming character of the Brink as a unity that so unorthodox a piece of design should play so happy a part in a predominantly Georgian scene. The peculiar rôle played by this building may be recommended in parentheses to the members of the Wisbech Preservation Trust, for careful observation. It is Georgian neither in style nor in date, and therefore might seem to lie outside the orbit of their watchfulness, but it holds as much of the essence of Wisbech in spite of—perhaps because of—its unorthodoxy. It can be seen in the centre of the headpiece to this article. It is an object lesson in the relative values of effect and style. However a little further along is the most truly distinguished building on the North Brink, and one that without any difficult exercise of taste is clearly all that the Georgian enthusiast could desire. Bank House, the noblest of the grand mansions already referred to, is eminently orthodox. It is a square Georgian house in red brick, set back a little within its own forecourt: a solid aristocratic house, once the residence

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