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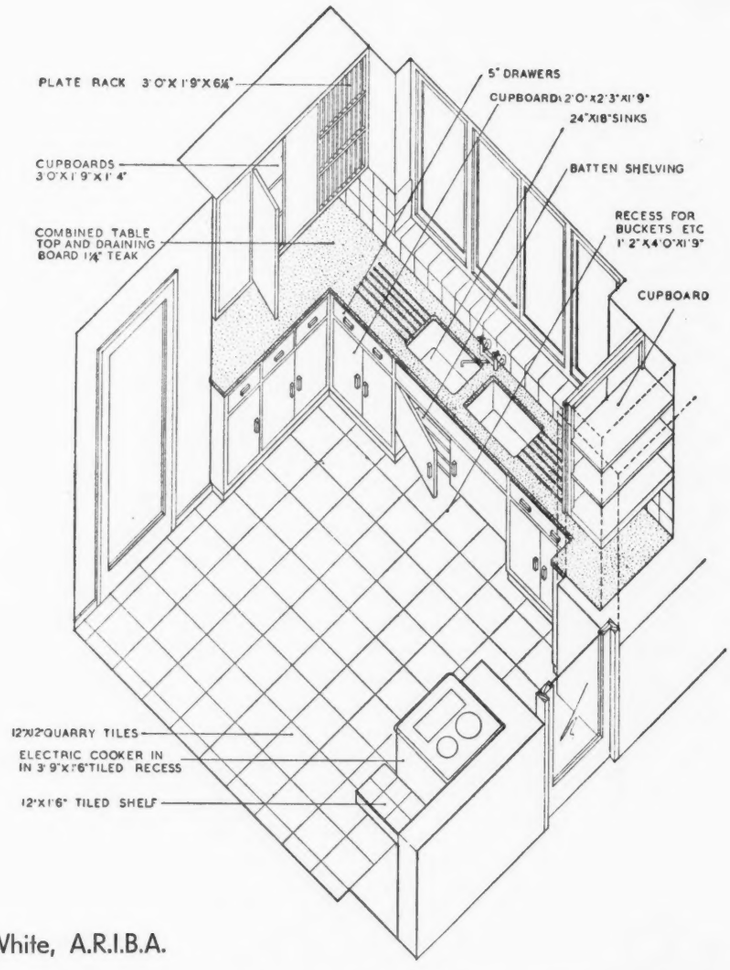

Edited by
Mildred W. White, A.R.I.B.A.

The purpose of this series is to illustrate by fully dimensioned working drawings and photographs, various types of contemporary construction and built-in equipment, and to show how a large number of the new materials and finishes have been satisfactorily employed by many well-known architects. The present volume is confined to domestic work and comprises a collection of the most interesting Details in this field which have appeared in "The Architects' Journal." The subjects dealt with include Structure (Walls, Roofs, etc.), Windows, Doors, Staircases, Kitchens, Furniture (built-in and movable)—Balconies, Corridors, Loggias, Fireplaces, Bedroom Fitments, Bathrooms, etc. The book contains 144 pages, size 12½ by 9 in., bound in cloth covers by the "Wiro-O" process, so that the leaves lie flat when opened. Price 10s. 6d. Postage 6d. inland.

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THE
ARCHITECTURAL REVIEW
A Magazine of Architecture & Decoration

VOL. LXXXV No. 509 APRIL 1939

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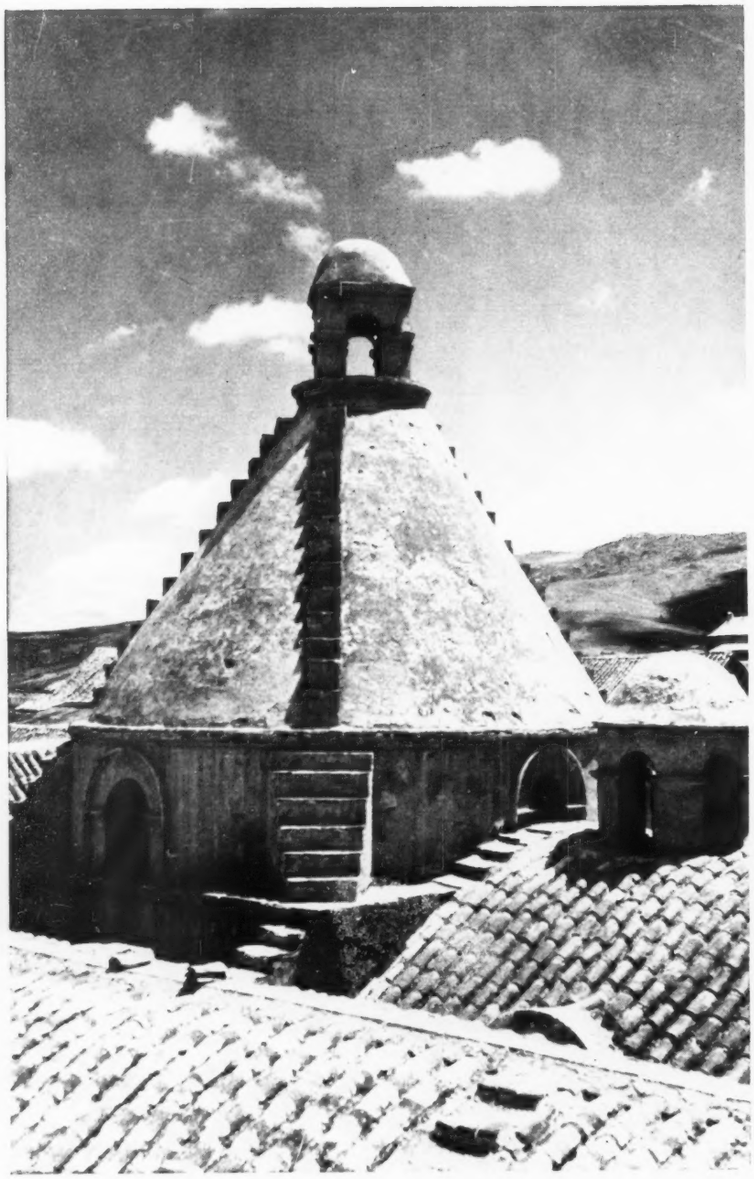


The Imperial Mint in the Spanish Colonial city of Potosi. Owing to the position of the city—it is the highest of its size in the world, and lies far above the tree line—the chief building materials were adobe and stone. The roofs of the larger buildings are of adobe used in the form of vaults and domes, with stone dressings and covered with pantiles. The photograph shows one of the lanterns on the barrel vaulted roof. The Mint was the commercial centre of a mining city which, in its time, sent more gold and silver to Europe than all the other mines of the world put together, and which provided the greater part of the money for the building of the Armada.

The Spanish Baroque architecture of Mexico is well known, but less attention has been paid to that of the South American Continent. In this article the author describes the city of Potosi (pronounced with the stress on the last syllable), in Bolivia, which is probably the best preserved Spanish Colonial city in existence. It owed its presence in an inaccessible situation high up in the Sierra of the Andes to the rich hill of silver and gold, in whose shadow the city was built, which was discovered in 1539 and proved to be the nearest approach to Eldorado ever found by the Spaniards in South America. A peculiarity of its baroque architecture is the degree to which the Indian craftsmen who built it imposed their own tradition of ornament on the European forms imported by their Spanish conquerors. The drawings that accompany the article are by the author.

The Rich Hill of Potosi

By W. A. Henderson

" The topographical aspect of the country is very remarkable. A strip of land, rarely exceeding twenty leagues in width, runs along the (Pacific) coast, and is hemmed in through its whole extent by a colossal range of mountains, which, advancing from the Straits of Magellan, reaches its highest elevation, indeed, the highest on the American continent, about the seventeenth degree south . . . This is the famous Cordillera of the Andes, or ' copper mountains ' as termed by the natives, though they might with more reason have been called ' mountains of gold.' "

(Prescott : HISTORY OF THE CONQUEST OF PERU).

THE Cordillera of the Andes rises so abruptly, that in one day's flying from the coast of Peru it is possible to cover almost every extreme of climate in the world. To the west are the waterless desert valleys of the Pacific coast; to the east are the tropical jungles of the Amazon basin. Between the two the mountain range rises to a height of twenty thousand feet. From the southern boundary of Bolivia to the centre of Peru this range is divided and, between its parallel rows of peaks, encloses the Sierra, a narrow mountain tableland of about the area of France but with an average altitude of twelve thousand feet.

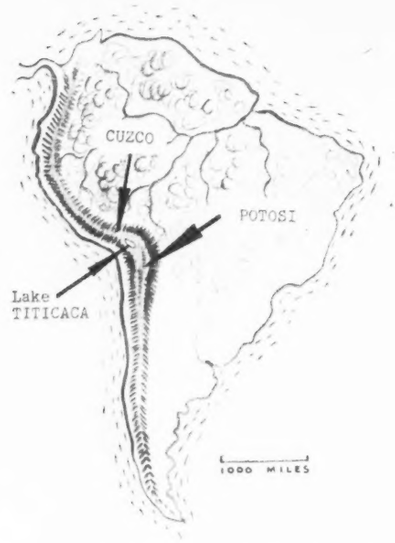
On this high plateau the greatest of the early civilizations of the American continent arose, first on the desolate shores of Lake Titicaca, and later moving down to the fertile valleys around Cuzco, which became the central seat of Government under the Empire of the Incas, the dynasty who ruled for the three hundred years before the Spanish conquest, and whose empire stretched from Ecuador to Chile, from the Pacific to an unknown boundary in Brazil, an empire bound together by four great roads converging on Cuzco from the four points of the compass.

The highest stretch of the Sierra is the Bolivian Altiplano, lying south of Lake Titicaca. The Incas called this country Taciman—the World's End. Here at a height of nearly 14,000 ft. stands the Spanish Colonial City of Potosi, the highest city of its size in the world.

To the European who goes there the physical reaction is strange enough. If you are unlucky you get *saroche*, a peculiar splitting headache, and have to retire to lower altitudes : in any case your lips swell and go blue, you have to breathe fast and walk slowly, while sleep is full of nightmares, broken a dozen times a night to gasp for breath. But the country and its people are stranger still, so remote and melancholy, that they seem in retrospect to belong to a country of the moon.

The train which leaves Autofogasta, on the coast of Chile, for La Paz and Potosi, climbs 16,000 feet in eleven hours to the Condor pass of the Western Andes, and from there travels a day's journey across a desolate country, a sea of volcanic land stretching out to the mountain tops on all sides. Rough saffron-coloured grass, grazing which only a llama will stomach, and whiskered cactus plants, are the only vegetation among the red rocks which stick up in twisted pinnacles over the hills. The air is intensely clear : every detail of the blue mountains eighty miles away can be seen There is no life in the land, no time, only an infinity of space.

At intervals along the line Quechua Indians appear from nowhere to stand motionless gazing at the train. Their woven cloaks are of every colour, standing out, out of all proportion to distance, against the cold land. A herd of grazing llamas is scattered over a hill, brown and white and black—below in a stony valley are a few huts and a patch of hillside terraced in the ancient tradition to raise a few rows of corn.



The city of Potosi is built on a hill and to the north east, rising another thousand feet above it, is the red cone of the Cerro Rico, the "rich hill." It dominates the town, changing shade with the weather, at sunset a deep blue.

The history of Potosi is founded on this rich hill. Vast quantities of gold and tin and over one thousand million ounces of silver, were extracted from it, and a record of the Treasury in 1773 shows that the production of these mines from 1545 to that date exceeded the estimated total metal currency of all the European countries.

The discovery of the New World had produced dreams of infinite wealth in Spain. The conquest of Mexico, the immense treasure raised for the Peruvian Inca's ransom, still failed to satisfy the dreams of an elusive El Dorado. But the discovery of the rich mines of the Sierra provided something far more definite. By 1535 Francisco Pizarro had conquered Peru. The mines of Potosi were discovered in 1539—as the story goes, by an Indian who, on pulling a bush out of the ground, found its roots covered in beads of silver. The discovery of an even richer vein in 1545 left the other mines of the Sierra comparatively deserted.

By the colonial system then in force, Charles V, King of Spain, himself the happy recipient of the "royal fifth" on all proceeds, dealt out the grants of land as well as grants of labour. The Indians of the surrounding villages, bred to an ordered pastoral life under the Incan Empire, were rounded up as slaves and put to work in the mines. Many were kept in the workings perpetually, as a precaution against their possible escape. There they died in great numbers, but—*que importa*—was there not an endless supply?

For the first twenty years the ores ran so high in silver that only primitive smelting furnaces were needed, but by 1566 these richer ores were exhausted and twenty thousand Indians were assigned to build a great system of thirty-two lakes in the surrounding hills in which to store the summer rains. A canal connected with these lakes supplied water power to the mills of the city. By 1573 the population had risen to 120,000 : Charles V christened it the Villa Imperial, and on its coat of arms are the words, "I am the rich Potosi, the treasure of the world, I am the king of hills and envy of all kings." The city was as splendid as the finest of Castille, and the Spanish miners became rich.

But they had many difficulties owing to their isolated position. The country is dry and barren and unsuitable for crops. They had to rely largely on the mule and llama trains which brought supplies from beyond the mountain passes, and when the passes were blocked there was famine. The hills were rich in gold, and silver, and copper, but all iron had to be brought from Spain, so that at times an iron horseshoe was worth more than its own weight in silver, and prices soared out of all proportion.

Besides this there was always the chance that the loads of metal which left the great gate of Potosi for the long journey down to the Pacific coast would never reach home, for the Pacific port of Arica, which linked Potosi with Lima, Panama and Spain, was a rich hunting ground for the English buccaneers, and it was not infrequently that the treasure which had been transported so laboriously on the backs of llamas and mules over the passes and down to the sea, was loaded on to a Spanish galleon only to be taken again a few miles out at sea. Letters from Potosi of about 1570 speak of these fears and uncertainties, of famines and plagues, the threat of the English on the Pacific coast and the advisability of shipping from Buenos Aires instead, and, not least, of the suspicion that the private fortunes of the miners themselves were being commandeered on arrival in Spain for the purpose of building the Invincible Armada.

On a Sunday afternoon in 1626 one of the great dams of the Potosi lakes broke, washing away a quarter of the town, including many of the mills, and drowning four thousand of the population. Miners are notoriously superstitious and even in this catastrophe they saw a sign, since the waters divided miraculously in front of the church of San Francisco and left it untouched. The damage was repaired, but the fortunes of the city had already reached their peak. During the next three hundred years they gradually declined. The flight of the Spanish royalists followed the long war of Independence. In 1825 Potosi became part of the new republic of Bolivia, a republic which has been stricken since its formation with more strife and confusion than any other in the continent.

The days of the Villa Imperial were over. The devaluation of silver at the end of the nineteenth century left the city almost derelict. For these reasons it stands today, much the same as it stood four hundred years ago, one of the most complete and unaltered examples of a Spanish Colonial city in the whole of South America.

The Spanish architecture of Peru and Bolivia differs from that in the rest of the continent in that the Indians, who had to build it, imposed strong traditions of their own. The history of those traditions and of the civilizations which produced them is a matter of archeology. Their origins are as obscure and mysterious as the legends of the country. But the races are the same as those of today —the Aymaras, the people of the Altiplano, who, thousands of years ago, erected the archaic temples and monoliths which lie on the shores of Lake Titicaca, the sacred lake which forms the starting point of all South American mythology; the Quechuas who lived in the more fertile mountain valleys, and built the early city of Cuzco with the network of megalithic fortresses which guard it on all sides; and the coastal civilization, which, in a rainless desert, built the huge military city of Chan Chan with aqueducts to bring water from a distance of two hundred miles.

The mountain civilizations were advanced in the use of stone, in carving and metal work.

The outstanding characteristic of the Spanish Colonial architecture described in these pages, that which distinguishes it from similar architecture elsewhere, is the perseverance of the native tradition that preceded it. This is partly due to the indestructibility of the native masonry, which the Spaniards were forced to retain as the foundation for much of their own work. These two photographs, both from Cuzco, show an Inca wall of large stones, closely jointed (as described on the facing page), serving as a basement to a Spanish superstructure, and a number of Spanish balconies built out over this old stonework.

THE PRE-SPANISH ARCHITECTURE OF THE ANDES

1

2

3

The photographs on this page show the Incan and pre-Incan architecture of the Sierra, which formed the local building tradition before the advent of the Spaniards. As explained in the accompanying article, this strong tradition of masonry craftsmanship influenced the Colonial architecture that was superimposed on it.

1, The fortress city of MACHU-PIJCHU (old peak) overlooks one of the river valleys leading from the Amazon jungle up towards Cuzco. It is situated in an impregnable position, perched on the top of a mountain with a sheer precipice falling two thousand feet to the cataract below. At the top the climate is cool and sunny; in the valley it is tropical. The Spaniards never dared explore this ravine, and the city above it was only discovered in 1911, by the Bingham Expedition. Machu-pijchu was probably built either as a garrison town to guard Cuzco, or as a retreat for an independent ruler of this district. The buildings are of megalithic construction, walls finely battered, with trapezoidal openings, similar to those of Egypt. The town planning is magnificent; the buildings are grouped on successive platforms, connected by staircases, which take the place of streets. Each group is dominated by a temple or palace. The sides of the mountain are terraced for crops, and water, which comes from the distant peaks, is distributed through the city by stone aqueducts, fountains and waterfalls, flowing side by side with the staircases.

2, The Fortress of SACCSAIHUAMAN (Eagle's Nest) was the stronghold of Cuzco, the capital of the Quechua Empire, which culminated in the Inca dynasty. The lines of battlements face a high plain, enclosing a triangle, of which the other two sides are defended by precipices. The city lies in the valley directly below these, and was connected with the fortress by an underground tunnel. Within the triangle were quarters for the garrison; outside it, and scattered over the surrounding high ground, were other buildings connected with religion and ceremonial, forming together an Acropolis to the city. The three serrated lines of fortifications are designed according to the best traditions of those of medieval Europe, though probably built about a thousand years before them. The construction is the most massive in the country; some of the stones are calculated to weigh 150 tons; all were brought by man-power fifteen miles from their quarries and up the precipice, and then laid without any sort of mortar to a hair joint.

3, A detail of this massive stonework in Cuzco. It is calculated that the earliest civilizations built in the largest sizes of stone—the fortress has some which measure 10 ft. by 10 ft. by 6 ft. The masonry of the next period was of smaller units but with the same shapes and jointing (as on the right of the photograph). The yet later type is altogether less ambitious (as on the left). These photographs are reproduced by courtesy of Martin Chambi of Cuzco.

POTOSI : A SPANISH COL-

4

5

On this and the following pages are a series of photographs of the Spanish Colonial city of Potosi, taken by W. A. Henderson, the author of the accompanying article in which the city is described. Potosi is situated 13,800 feet up in the Sierra of the Andes, in the shadow of the hill from which a large proportion of the silver and gold exported from South America to Spain was mined. 4 and 5, views over the roofs of the city showing the towers and domes of its many churches. The roofs are of pantiles and the barrel vaults and domes of adobe. 4 is taken from the roof of the Imperial Mint in the centre of the city (see frontispiece). 5 is one of the derelict churches; on the right can be seen the slope of the " rich hill."

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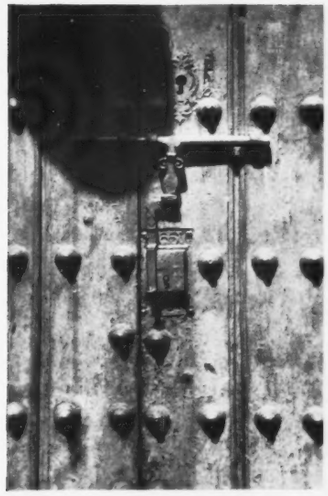

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6 and 7 (facing page) are typical street views. The streets are cobbled, steep and narrow, and on either side are two-storeyed adobe houses of every colour, with pantile roofs and balconies, some coloured and latticed, others of wrought iron from sixteenth-century Spain. Today Indians live in the houses, which their ancestors, as slaves, built for the Spaniards. The house in the centre of 6 is coloured dark red; that on the right is pale green; others are yellow or pink. Even the church bells are coloured.

9, the tower of the church of Santa Rosa, built in the local pink volcanic stone with a white dome. All the churches and public buildings of the city are built in these materials, the porticoes and towers being carved in increasing richness as the Baroque demand for decoration gave the Indian craftsmen more opportunity to impose their own tradition of decoration on the European structures they were employed to build. On the right of 9 is the Imperial Mint (see frontispiece). The slaves who worked its machinery by day, were kept at night in the open arcade at the top of the building. During the recent Chaco war the building was used as a lock-up for Paraguayan prisoners. 8, one of the studded doors of the Mint, typical of many in the city. The studs are sometimes of bronze and sometimes of lead.

10 and 11, two other church porticoes. In 10 the door itself is painted vermilion. 11 shows a more conventional Spanish Colonial Classic design, unusually free from Indian influence.

12

13

14

15

12, the portico of the Church of San Francisco. 13 and 14, some details of sculpture from the same church. In this detail is evident the curious distortion of conventional Baroque motifs by the Indian craftsmen, which had the effect of converting the European forms to a considerable resemblance to the forms belonging to their own native mythology, as described in the accompanying article.
15, a bas-relief of the God of the Sun, on a monolith near Lake Titicaca, prototype of all pre-Spanish ornament.

The starting point of South American mythology is the sacred Lake Titicaca shown above on the left—100 miles long by 60 miles wide. In it is the Island of the Sun, where the first Inca and his sister-wife claimed to have come to earth, sent by the Sun to save humanity. On the shores of the lake are giant monoliths, and, at one end, the archaic observatory of Tiahuanaco. The lower valleys of the Sierra are fertile wherever there is water, otherwise they are deserts of volcanic dust. On the right is Mount Misti (19,000 feet) which rises above the town of Arequipa (8,000 feet). It is an extinct volcano, the cloud over its summit appearing merely by chance.

The massive construction of their buildings is an unsolved riddle, even more puzzling than that of the Pyramids of Egypt. Their motifs in sculpture and decoration are common to the whole continent. The coastal civilization produced pottery which may be compared with the best of early Greece. Finally, the Incas, by military strategy, welded all these races into one Empire, assimilating their traditions and cultures.

This Empire was a theocracy of which the Inca himself was both king and god. Pizarro, by publicly deposing and executing the Inca, undermined its whole organization, both civil and religious. Hopelessly outnumbered against any organized attack by the Indians, the Spaniards made it a principle, during the whole colonial period, to keep them in this state of disorganization, and for this reason as well as that of Catholic fervour, they did their utmost to break down all the visible signs of the old order, together with its traditions and religions.

In this, they were only partly successful, and the colonial architecture of the country is the expression of a clash between the two great traditions.

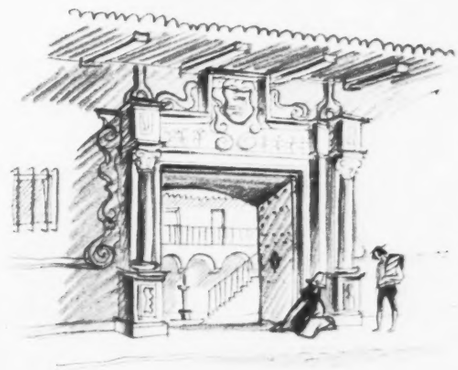
In the first place, the megalithic construction of the Aymara and Quechua buildings was indestructible. The roofs were of mud and thatch, but the walls, once stripped of their plates of gold, were found to be of gigantic polygonal blocks of granite, many weighing over a hundred tons, and fitted without mortar with such incredible accuracy of joint that it is to this day almost impossible to force a knife blade between them.

The sight of the great temples and fortresses of Cuzco forced the Conquistadores to the conclusion that they were the work of the Devil himself, and as they could not destroy them they built on top of them in their own style, superimposing upper floors of adobe on top of the old single-storeyed buildings, building churches on top of archaic temples of the sun, and inserting Plateresque doorways into megalithic walls, so that the architecture of Cuzco today appears like some unique geological formation.

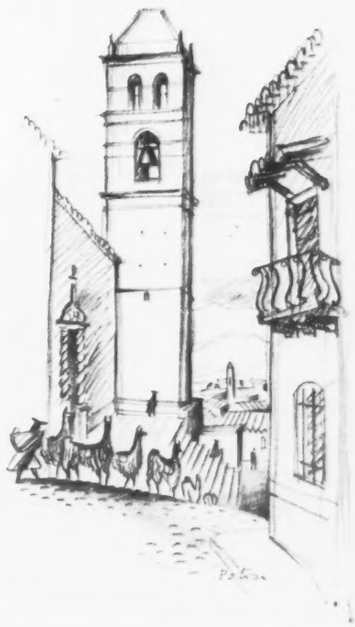
In their new buildings they succeeded hardly better in effacing the old. In imposing Roman Catholicism on the Indians, they were forced to incorporate the traditional festivals of the country into the Roman Catholic calendar. The effect on the ritual itself has been strange enough, since the new religion has become increasingly garbled with the course of time and in the more remote villages today, the churches are used for involved ceremonies in which the worship of the Cross is mixed freely with rites to appease the various gods of the Sun, the Lightning and the Thunderbolt, sometimes involving a lavish display of firecrackers in front of the altar and a wholesale orgy on the floor of the church itself.

In architecture the gradual evolution of the purer Classic and Plateresque style of the time of the conquest towards the more florid Baroque and Chirrugueresque, gave more and more opportunity for the Indian craftsman to cover classical forms with his own traditional type of decoration.

The finest examples of this mixture of traditions are found in the churches of Potosi;



The patio houses of Potosi have magnificent stone doorways set against the plain adobe walls. Inside, the arcades and balconies provide open circulation to the rooms. The carved heraldry of the coats of arms stand today in ironic contrast to the primitive lives of the Indian inhabitants. The stone church towers, such as that shown on the right, are usually massive and unadorned, contrasting with the tortuous carving of the doorways. Droves of llamas, the traditional beasts of burden at these altitudes, are a frequent sight in the city, trotting with a mincing step down the steep and narrow streets of the city. They are haughty animals and, like the camel, will only carry up to a certain definite burden.



This carving over a church door in Arequipa, showing a bishop on horseback, is a good example of the mixture of Baroque and Indian influences. Horses were regarded as fantastic and miraculous animals by the Indians who had never seen them until the Spanish conquest, and who, on first seeing the mounted Spanish cavaliers, thought that horse and man were one and the same being. This particular carving is of some sociological interest, since the figures of the mermaids and of the horse, formerly of far more voluptuous nature, were considerably modified during the last century to suit the prevailing standards of propriety.

the tower of Santa Rosa—pink stone and white dome against a blue sky—shows stone forms carved into such a tortuous mass of detail that they appear like some coral formation. Finest of all is the portico of San Francisco ; the figure of the patron saint is reduced to the squat proportions of the god of the sun, flanked by the mermaid goddesses of the Water and the Moon, signs of the Sun and the Lightning, and twisted columns carved with the fruits and flowers which symbolize the goddess of All Creation the whole set admirably against the plain stone wall of the church itself (see page 170).

The buildings of Potosi are chiefly of adobe with mud vaults and domes and pantile roofs. The doorways of the houses, the churches and the public buildings are of the pink volcanic stone of the country. All the wood used had to be brought by hand over a hundred miles from the forests of the Argentine, for the city is far above the normal tree line. The great ironwood beams which went to build the floors and machinery of the National Mint took two months to bring to Potosi, fifty Indians to each log, some of which measure eighteen feet square in section and forty feet in length. The plan of the city is as near an approach to a gridiron as the slope of the hill permits—this is the usual plan for a Spanish Colonial town, possibly following the Inca tradition of town planning, though the latter only used this form on a level site. There are many plazas with bronze fountains, even with trees in a tree-less land. The main plaza is on the highest point of the city hill, surrounded by public buildings, the Cathedral and the Mint.

The construction of these buildings, like that of most Spanish towns of the time, relies mainly on mass, with thick walls of adobe or stone, massive doorways and great studded doors. Their plans are simple and stereotyped, but the essence of the architecture is sculptural and decorative, an architecture of luxury, of curling scrolls and pediments, of carved towers, wrought iron grilles and balconies from Viscaya, tapestries from France, swords from Toledo, silks from Cathay.

Today there are still a few rich veins in the Cerro Rico, and one or two rich miners. The old slag heaps are resmelted for tin, a metal which the Spaniards did not bother to extract, and the mines are still worked for silver and gold, the new shafts and galleries mix with the uncharted workings of Spanish times into a labyrinth of tunnels which extends throughout the whole height of the hill, and parts of which collapse frequently. The old scale is gone. Of the thirty-two artificial lakes only six are in any sort of working order. The population which reached its highest in 1650, at 160,000, now numbers barely 30,000, less than one fifth.

Compared with the other old cities of Bolivia and Peru, Potosi is untouched, as the Spaniards left it. La Paz has a modern commercial centre. Lima is cosmopolitan and sophisticated, Cuzco is on the American tourist map, but Potosi is still remote from these things. The signs of the present century : telegraph wires, the shops which sell cheap European clothes, the two Indian policemen dressed in German military uniform with papier maché helmets, the few cars and the cinemas all still look out of place in what remains a seventeenth century city.

Many of the buildings are falling down. The Indians who form some 80 per cent. of the present population live in the wrecks of the magnificent houses which their ancestors, as slaves, built for the Spaniards. In their patios Indian children play around the carved fountains, and in the evening the women squat in the stone doorways under the coats of arms of the best families of old Spain.

Of the fifty or more churches, two of the finest have been turned into cinemas, and most of the others left to rot—the statues have been stolen from their niches, the bronze knockers from the doors : broken sixteenth century altar-pieces are chopped up for firewood in a land where fuel is scarce. In the junk shops, you can still find traces of the great days—fitted travelling cases, the silver stirrups of a Spanish gentlewoman, panelled chests, old swords, sometimes a good picture—all left behind in the exodus.

Today Potosi is a city of Indians. The streets are full of moving colours, the brilliant shawls and skirts of the chola women, and the darker, dirtier clothes of the country people. Everyone carries a load, slung in a striped poncho on the back, the women carrying babies, and the men anything up to the size of a grand piano. Droves of llamas, the only beasts of burden at an altitude where horses cannot live, file down the cobbled streets loaded with ore from the mines.

The market is held in the large walled courtyard of the church of San Francisco, and is full of Indians from the surrounding valleys. Each tribe has a costume of its own; different colours and widths of stripe on their ponchos, different ways of doing their hair. Many of the clothes are Spanish in influence, particularly the hats, several of which are replicas, in hide, of the various types of helmet worn by the Conquistadores, so that some of the men seem in the distance to be Spanish mercenaries of the sixteenth century.

They come in bands and families, sometimes taking a week to get to Potosi, carrying their loads on their backs, the women spinning as they go, and always moving at a jog trot. Silent and melancholy as the country itself they wander round the streets of the city, squatting in groups around the fountains and on the steps of the churches till late in the night, wrapped in their ponchos against the cold. Cowed by servitude and doped into apathy by endless cocaine chewing, and clothed in rags, they still seem to retain some of the dignity of their lost civilization. The pipes play a dirge—oppression, the harsh gods, the cold and stony land.

From the top of a stone column in the plaza, the figure of Independence, with arms held out stiffly, like a stone doll, looks over the brown pantile roofs to the grey Altiplano and the blue ranges of the Cordillera. Behind, rises the great silhouette of the Cerro Rico de Potosi.

FLATS IN PALACE GATE, KENSINGTON

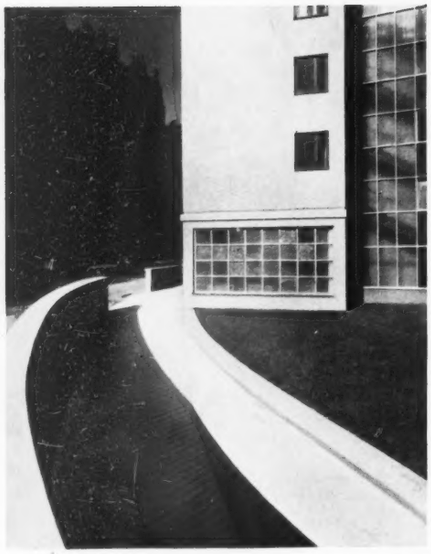
WELLS COATES, ARCHITECT

This block of flats is situated at the point where Palace Gate makes a double turn, so that the building is on the axis of the lower part of the street. The photograph above is taken looking up the hill from the south. The ground floor window on the left lights the entrance hall, and the tall window in the centre lights the main staircase.

Above, the building from the south-west, showing the entranc beneath a projecting canopy on the extreme left. Left, perspective drawing from approximately the same view point. The chief points of interest in the building are i method of construction and its three-dimensional plannin Construction is of reinforced concrete faced with artifici stone slabs, the latter forming the shuttering to the concre (see page 181). The planning is on the " three-two " systen that is to say, double height living-rooms and other rooms single height are interlocked so that two complete flats a formed in the repeating unit of three floors. This systen with its effect and advantages, is described in detail on th pages that follow. Though devised some years ago by th architect, this is the first building in which it has been put int practice in this country. The main block only is planned o this principle, the western block, containing the entrance which has been added in order to make the most of an unusuall shaped site, being planned floor by floor in the ordinary wa Observe the slight curve to the façade of the western block an important refinement from the design point of view.

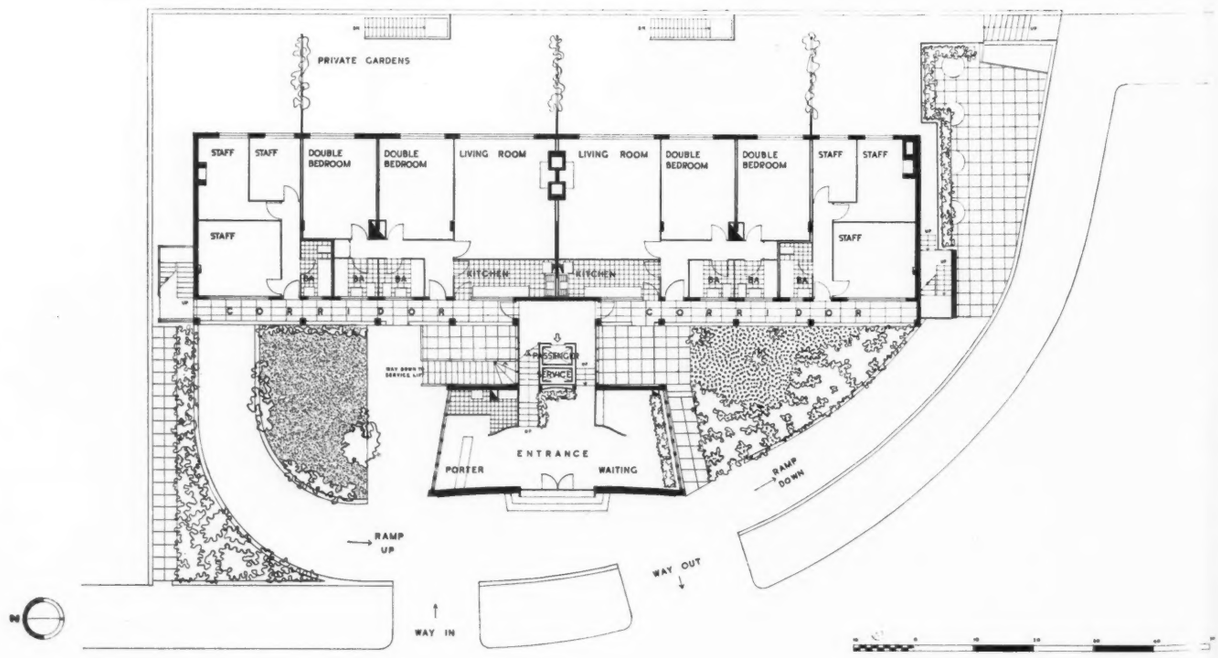
FLATS IN PALACE GATE, KENSINGTON

Above, three general exteriors ; from the north-east, from the west and from the north-west. Below, the elevation to the east. The latter shows the large windows to the double-height studio living-rooms provided in each flat and the smaller windows to the other rooms, three of which take up the same height as two living-rooms. Besides providing flat interiors of interesting proportions and conveniently flexible plan, this system is very economical in circulation. Each of the two flats forming one "three-two" unit is entered from the middle level, so that access corridors and lift stops only have to be provided at every third floor. The external access galleries at these levels can be seen in the two right-hand photographs above. The centre photograph above also shows the glass-enclosed service stair. A penthouse flat occupies part of the roof.

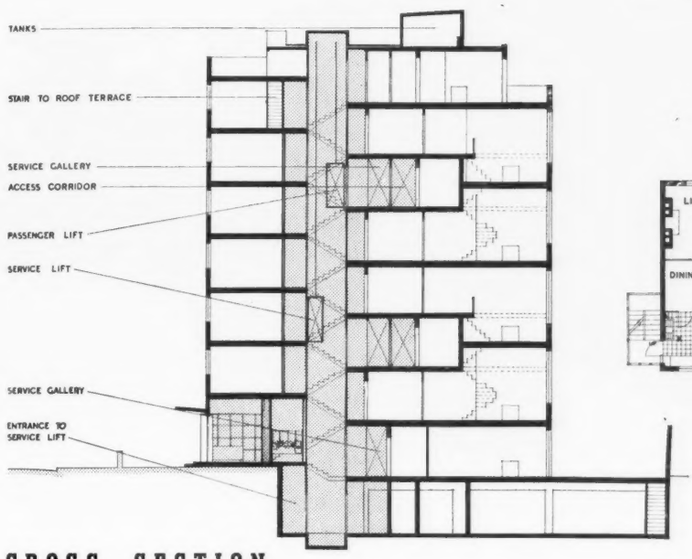


Nearly the whole of the basement of the building consists of a large garage, which is served by two ramps, one either side of the entrance (see ground floor and lay-out plan below). The garage holds 20 cars and provides service and washing facilities. The photographs above show the down ramp, with the main entrance beyond, and the up ramp as seen from the roof. The ground between the ramps and the building and the triangular corner at the north-west are being planted with shrubs and turf. For this work Christopher Tunnard is garden architect. On the east side of the building the remainder of the site is laid out as a terrace garden, sub-divided for the private use of the ground floor flats whose living-rooms open on to it.

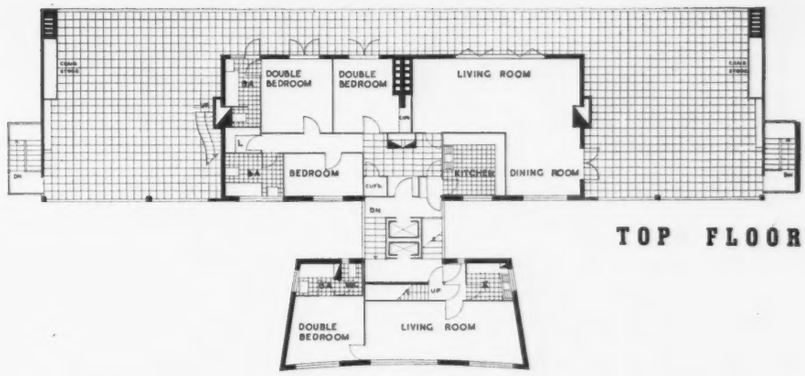
GROUND FLOOR PLAN



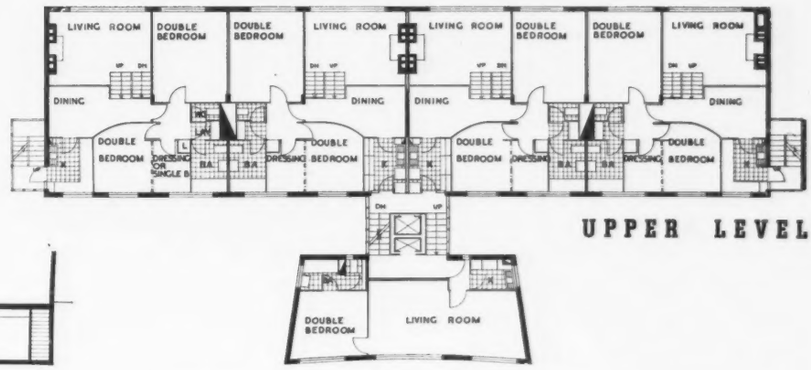
FLATS IN PALACE GATE, KENSINGTON



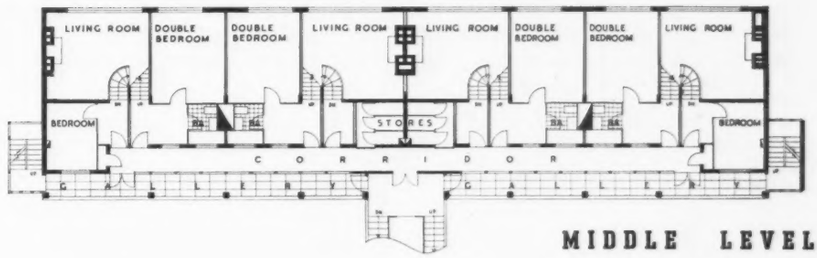
CROSS SECTION



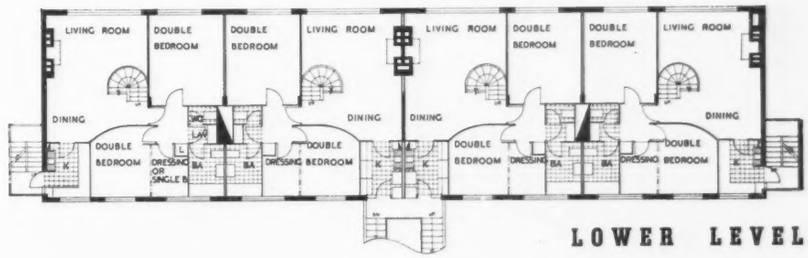
TOP FLOOR



UPPER LEVEL



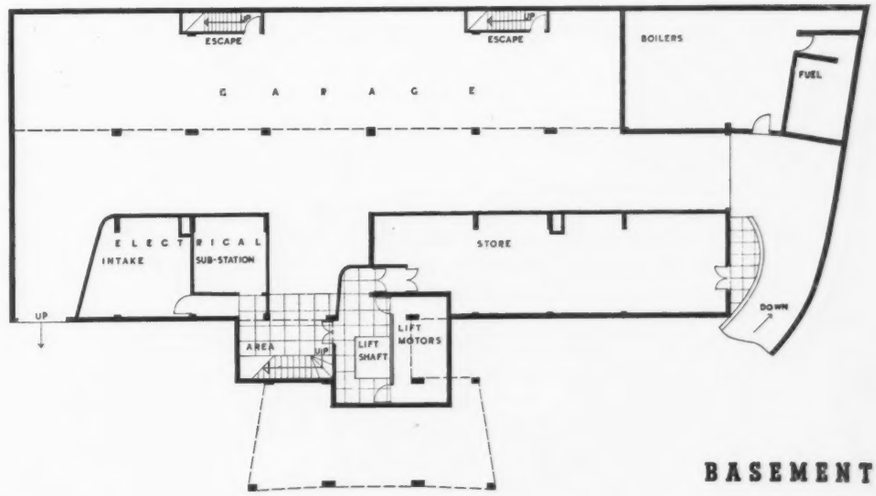
MIDDLE LEVEL



LOWER LEVEL

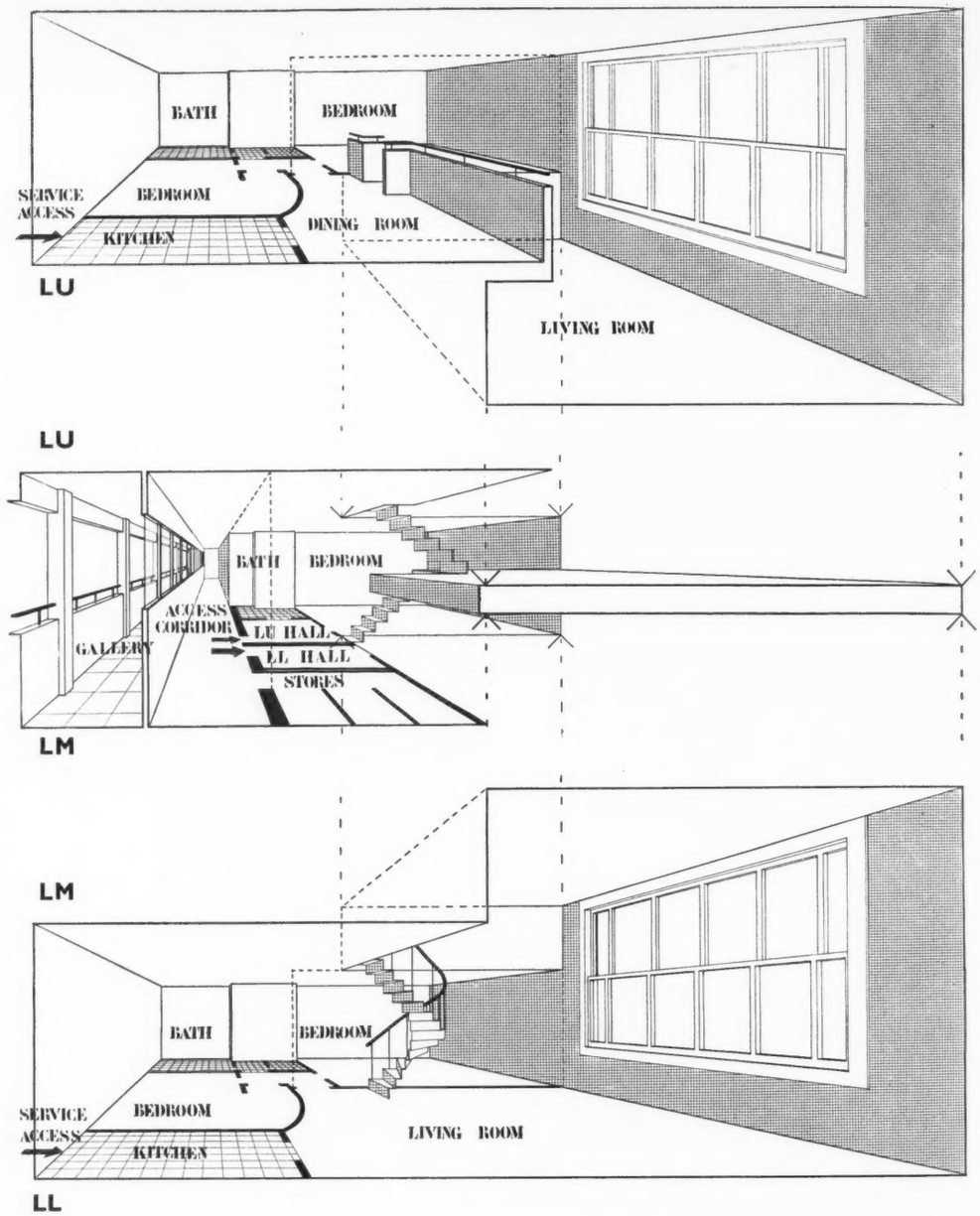
The Plan

Besides the top floor, containing one penthouse flat, and the basement, containing the garage and heating chamber, the plans on this page show the three floors that together represent the planning unit on which the " three-two " system is based. These are designated **UPPER LEVEL, MIDDLE LEVEL** *and* **LOWER LEVEL,** *both here and in the analysis of the " three-two " system that follows. In this block the complete unit of three floors is twice repeated, as shown in the section ; and as the system allows two flats to interlock in the height of three floors, the six floors contain four flats vertically. In addition there is the pent-house flat and a row of ordinary flats on the ground floor (facing page). The " three-two " system applies only to the main block. The western block, over the entrance, is planned in the ordinary way, with a two-room flat on each floor, and has only been included in the scheme in order to provide the maximum accommodation on an irregular site.*



BASEMENT

The "Three-two" Planning System



The principle of planning the interiors of flats or houses with varying floor levels to give increased height to some rooms is one that has been considerably studied by modern architects. It is part of the tendency in modern planning to aim at flexibility of space as distinct from the rigidity of firm compartments, but it is in any case only a return to the character of the pre-Renaissance house with its Great Hall dominating the low ceilinged solar and chambers. The experiments of modern architects have been concerned with the incorporation of a variable section planning system into the standardized unit of a modern flat block.

An example of this in its simplest form is the recent Highpoint Number Two block at Highgate,* by Messrs. Tecton. Here the "two-one" system is employed; that is, the main living-room (or a portion of it) is equivalent in height to two ordinary rooms, a complete flat with internal staircase occupying two floors of the building. This is also the system most commonly applied in American "duplex" planning. Its disadvantages, however, are that it gives a minimum ceiling height in the double-height living-room of about 17 ft., which demands a room of considerable size if the proportions are to be satisfactory—a size that is uneconomical in any but luxury flats.

The more complicated system employed here, the "three-two" system, in which two living-rooms are equivalent in height to three ordinary rooms, so that two complete flats occupy three floors of the building, avoids this disadvantage. It makes, indeed, a remarkably thorough use of the space enclosed while preserving proportions that will make good habitable rooms. Although a "three-two" system had already been tried in Russia, this building is the first in which it has been used in this country. A single unit of another variation of the sectional planning principle, was, however, carried out two years ago by the same architect.†

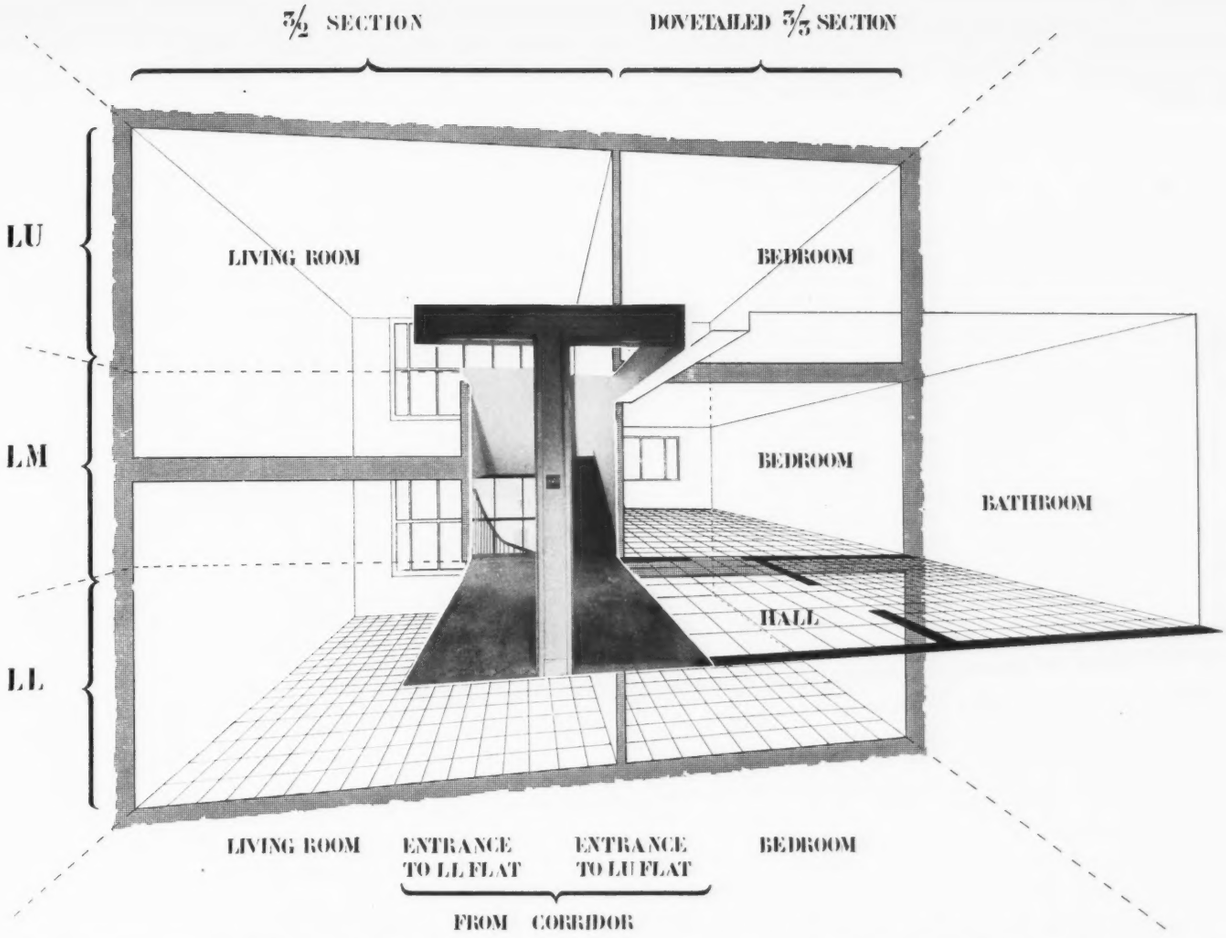
Any theoretical planning system of this sort has to adapt itself to the conditions under which it is executed, and in this case an irregularly shaped site was most economically used by providing two blocks, a main block and a smaller, western, block, the latter incorporating the lift shafts and planned with one flat to each floor in the usual fashion. But in the main block, although a larger and more open site would have given greater opportunity of exploring its possibilities, the "three-two" system is tried out under very fair conditions, though the Palace Gate site has probably the minimum dimensions within which the system can be applied.

The principle advantages that this experiment shows the system to possess, besides that of the economic utilization of interior space, already described, are twofold: flexibility and economy of access. The remarkable flexibility; that is to say, the remarkable number of flats of different sizes and different arrangements of rooms that can be provided without structural alterations; is increased by an improvement on the straightforward "three-two" system which the architect has introduced, one which is entirely new, not only in this country. As has been explained, two living-rooms on one side of the building are equivalent in height to three rooms on the other side, making two flats vertically in three floors. But between these three-two units *horizontally* are "three-three" units running the full width of the block (see the diagram on the facing page), and the rooms contained in this unit on the middle level can form part of either of the flats adjoining it. Some typical variations are given on the facing page.

The third point worth studying is that of access. The very ingenious system of access is explained diagrammatically on page 180. It is only necessary here to point out that access corridors, lift lobbies, entrance halls etc., occupy a considerable amount of space in the average block of flats, but that the "three-two" planning system only requires access to be provided on every third floor, on the middle level of the three floors that constitute a vertical planning unit, since this level is included in both flats contained in this unit. Access is from corridors and service galleries, the space these occupy being incorporated at intermediate levels within the service quarters of the flats. This can best be understood by examining the exterior photographs on pages 174–175 as well as the diagrams on page 180. A further advantage is that two additional outside walls per unit are made available for lighting the flats. The passenger lift stops at every third floor only, but the service lift, which occupies the same shaft, stops at every floor and gives access by way of a half flight of stairs to each level at which kitchen entrances occur, so that central service access is provided without interference with the ordinary access.

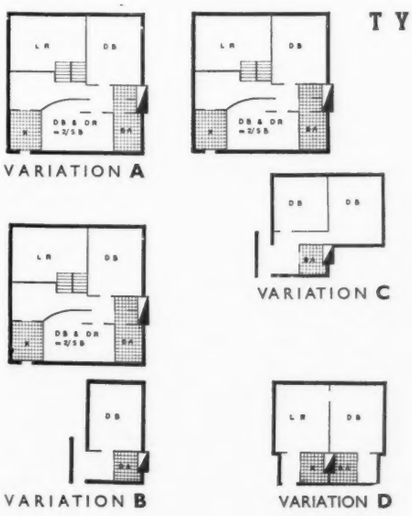
* Illustrated in THE ARCHITECTURAL REVIEW for October, 1938: pages 161–176.

† *See* THE ARCHITECTURAL REVIEW for August, 1937, pages 51–58: illustrations of Mr. Wells Coates's studio flat in Yeoman's Row, Chelsea, and article by the architect also describing the principles of the "three-two" system.



The diagrams on this and the facing page illustrate the "three-two" unit on which this block of flats is based, consisting, first, of two flats each with a two-storey living-room, dovetailing into each other to provide two flats in the height of three floors, and secondly, of a "three-three" section between each pair of flats with rooms that can be incorporated in different flats. In the diagram on the facing page the three levels of the "three-two" unit, marked here and on the plans as **LU** *(upper level),* **LM** *(middle level)* and **LL** *(lower level) are dissected for the sake of clearness, the bottom line of the upper section and the top line of the lower section being, in fact, the same as the top and bottom lines respectively of the middle section. In the diagram above, the photographic portion is seen from the access corridor at middle level with front doors of two flats open; the left-hand drawing showing the two living-rooms one above the other on the east side of the block to which the two adjoining entrance halls on this level give access, by stairs up and down; and the right-hand drawing shows the "three-three" section on the same vertical plane.*

TYPICAL VARIATIONS



This variation of the "three-two" planning system with "three-three" sections alternating horizontally provides great flexibility of plan, as certain rooms can be made accessible from different flats without structural alterations and without interference with the system of access. As many as forty variations of individual flat plan have been worked out, though certain of these that exist in a theoretical scheme are not possible in this particular case owing to restrictions imposed by the site. However, on the left are four typical variations:

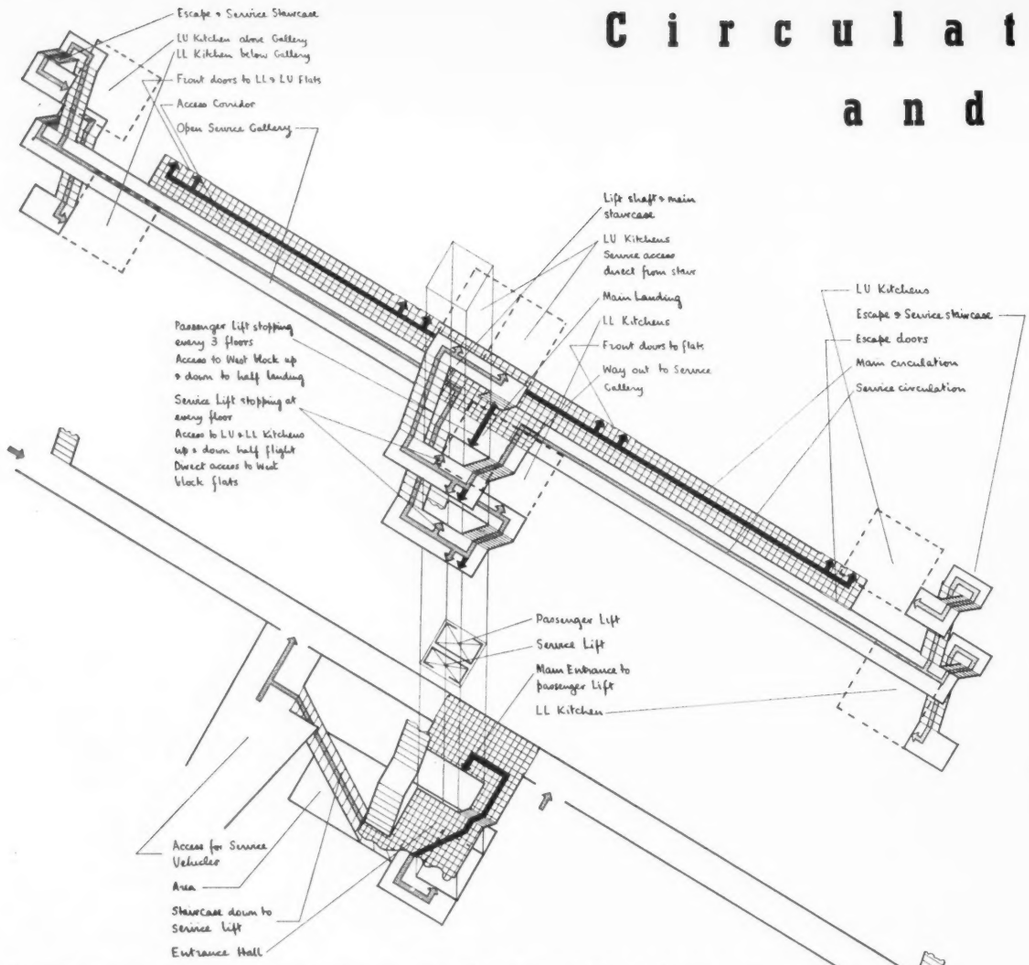
A, *standard upper level (LU) flat, with two or three bedrooms, the front room having been planned so that it can conveniently be subdivided. Entrance only is on the middle level (LM), the middle level rooms being thrown into other flats.*

B, *the same upper level flat with one middle level room included, giving three or four bedrooms.*

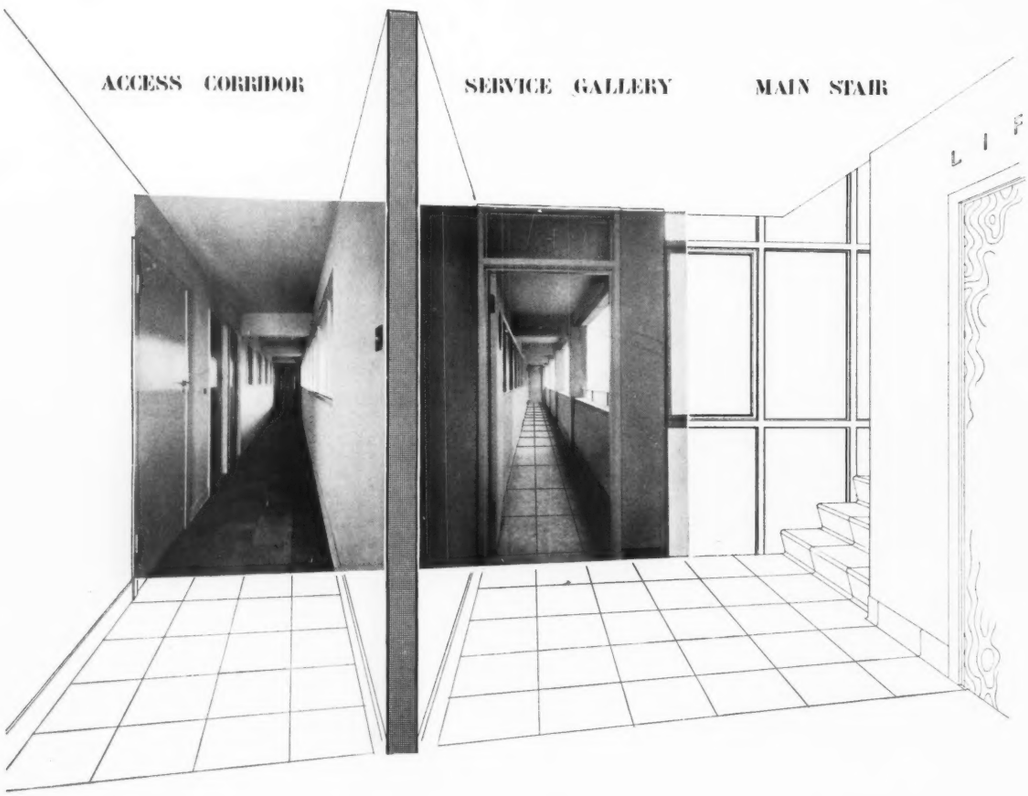
C, *the same upper level flat with two middle level rooms included, giving four or five bedrooms. The access to the second extra room from the neighbouring entrance hall is closed up and a partition built across the end of the first middle level room to give access to the second. In the case of the flats at either end of the block a third middle level room can be added, giving a six-bedroom flat, as there is an extra room which takes the place of the store-rooms in the centre flats* (see plans on page 177).

D, *two room (one bedroom) middle level (LM) flat, which can be provided whenever the middle level rooms are not required for large flats such as B and C (that is, when the upper level flat is as A). One of the two bathrooms becomes a kitchen, the services being already there, and part of the entrance hall of the adjacent flat being included so that access from the corridor is preserved.*

Circulation and Access



Access on ground floor and circulation on three floors comprising " three-two " unit. The latter are marked LL (lower level), LM (middle level) and LU (upper level).



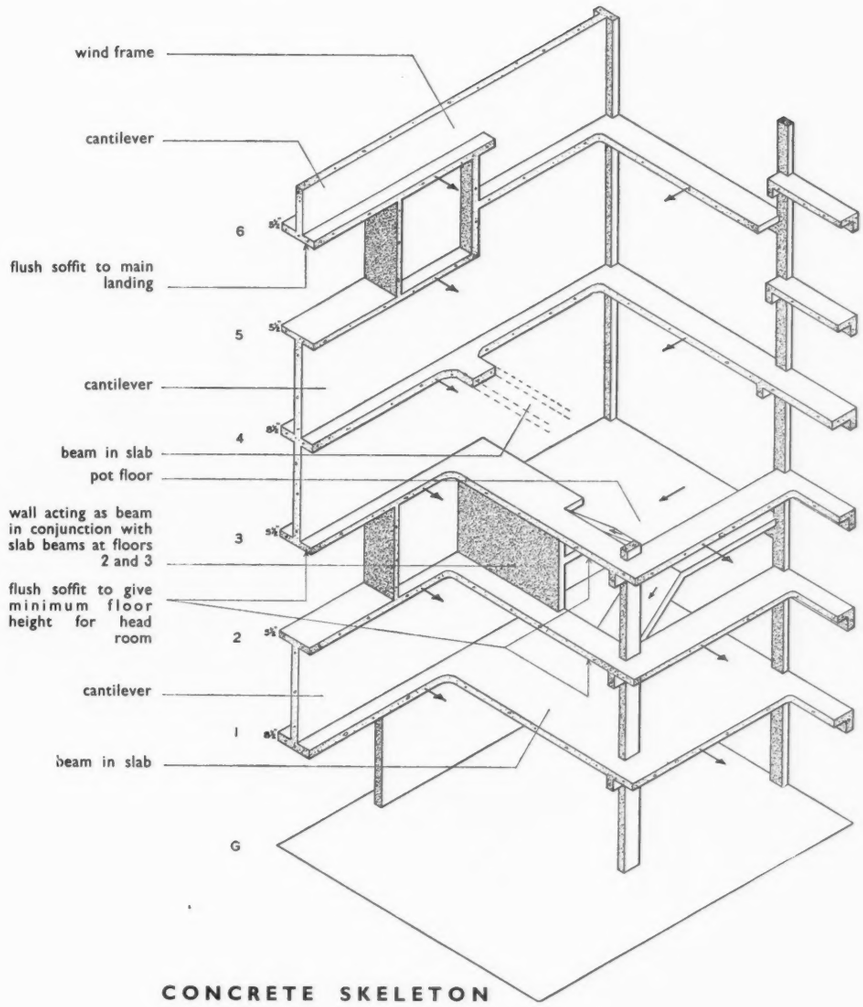
One of the advantages of the " three-two " planning system, as previously described, is an economy in the proportion of floor-space given over to circulation and access. The diagram at the top of this page shows the system of access from the ground floor and the circulation—including service circulation, which is quite independent—on the three levels that comprise one upper floor planning unit. The passenger lift stops only at the middle of these three levels (marked " middle level " on the plans); that is, at second floor and fifth floor level. At these levels an open external access gallery is provided (see photographs on pages 174–175) for service and escape, parallel to which is a corridor from which open the front doors of all the flats. Eight flats are therefore reached from each corridor.

On the left the two parallel corridors are shown, from the lift lobby. Above is a photograph of the lift lobby, showing the main stair round the lift shaft.

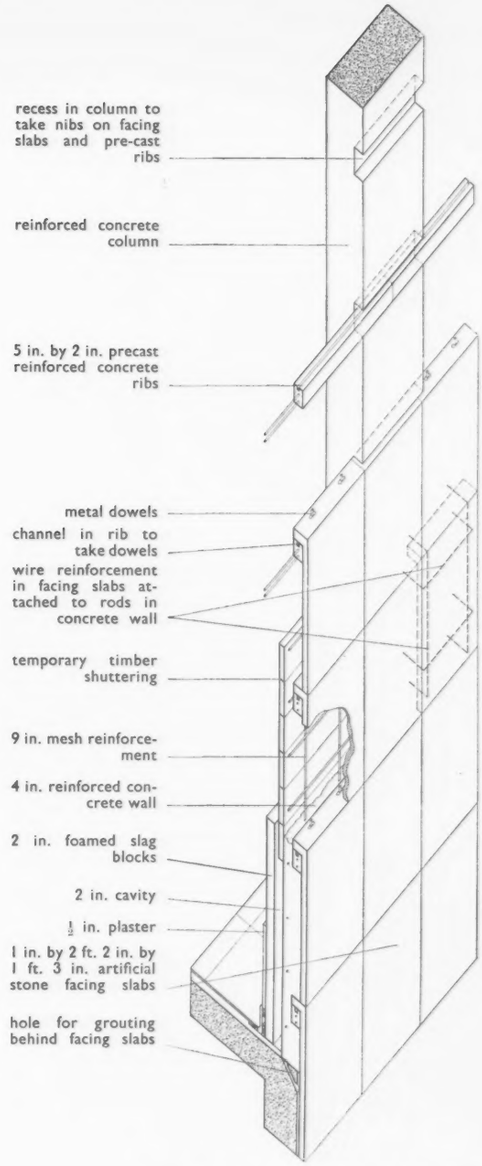
Service access is from a service lift in the same shaft, which stops at every level on the west side, so that access to kitchen entrances, which are all placed on the upper or on the lower of the three levels, is by a half flight of stairs up or down from the nearest lift stop and, in the case of the end flats, along the external gallery as well. The service stair to the end flats also serves as an escape stair.

The flats in the west block are served by the same service lift direct to their own level, and by the same passenger lift, although it only stops every third floor, with a maximum climb of half a flight up or down.

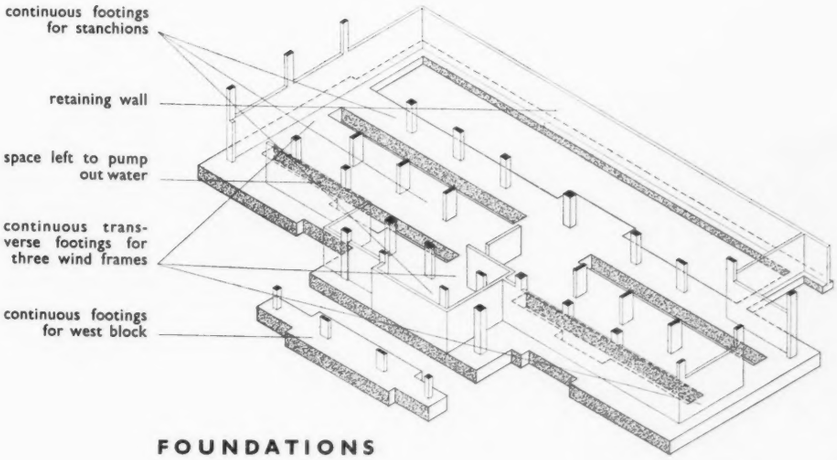
Construction



CONCRETE SKELETON OF ONE UNIT



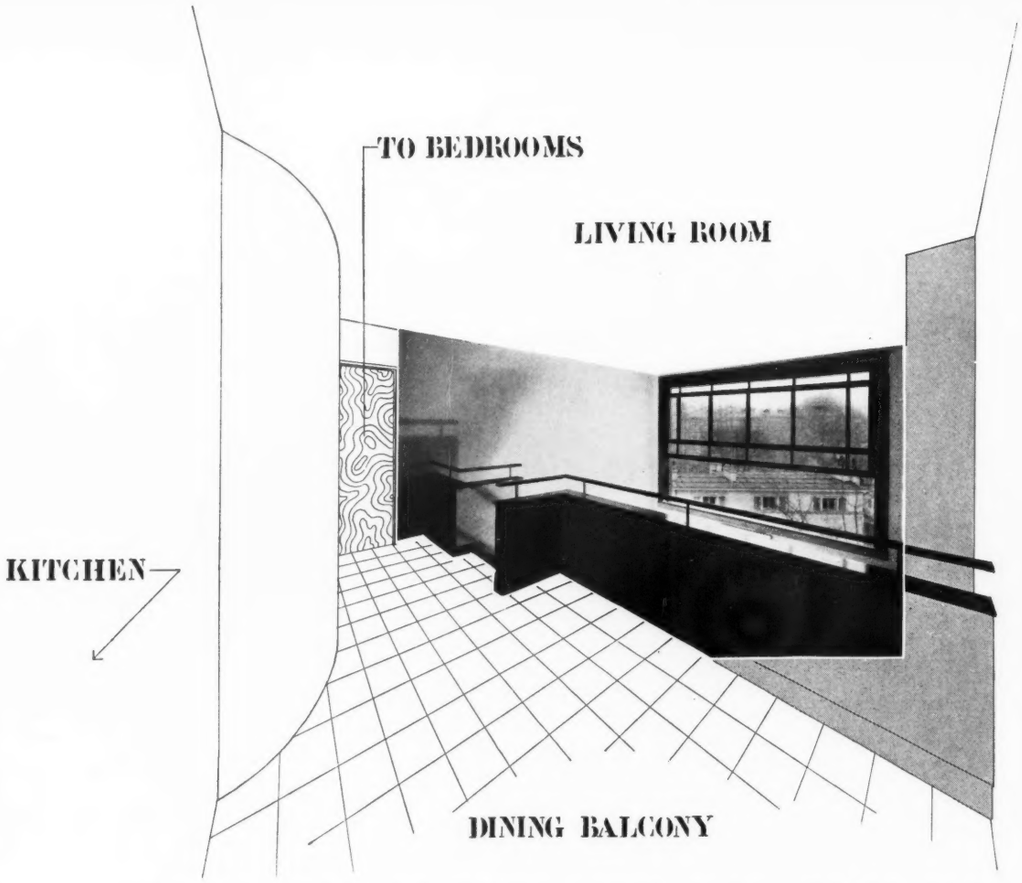
WALL CONSTRUCTION



FOUNDATIONS

The building is of reinforced concrete construction, with external walling of pre-cast artificial stone slabs which serve as permanent shuttering. Inside the concrete panel walls is a 2 in. cavity for insulation and an internal wall of foamed slag. The cavity also contains the horizontal pipe-runs. Floors are of hollow tile on $\frac{5}{8}$ in. insulating slabs, which when plastered form the ceilings. Ordinary partitions are of foamed slag aggregate slabs, but between flats are double partitions of the same material with a 2 in. air-space laid on an insulating screed so that at no point do partitions touch the structural skeleton. All windows have a natural-finished teak frame, serving also as trim for the stonework. A typical unit of the reinforced concrete skeleton is illustrated in isometric form on the left, to show how the framework and the floor slabs acting as beams are contrived to provide the uninterrupted space needed by the double-height rooms. Below this diagram is one showing the whole of the foundations, which presented unusual problems. Water was found over the whole site at a depth of only 18 ft. below pavement level (the usual depth in Kensington is 26 ft.), and to avoid the expense of piling a reinforced concrete raft, consisting of three strips and one cross strip, all 3 ft. 6 ins. deep, was substituted for the usual pier bases. 50 per cent. of all the steel reinforcement in the building is in the foundations.
The consulting engineers for the building were Samuely and Hamaan and the work was supervised by J. H. Walker, general foreman.

The Individual Flat



LIVING-ROOM OF UPPER LEVEL FLAT, UPPER PART

ASPECT

The planning of the main block, on a site with a very short south boundary, allows all living-rooms and the majority of bedrooms to face east, with a garden outlook, and the service rooms and access corridors to face west on to Palace Gate.

INSULATION

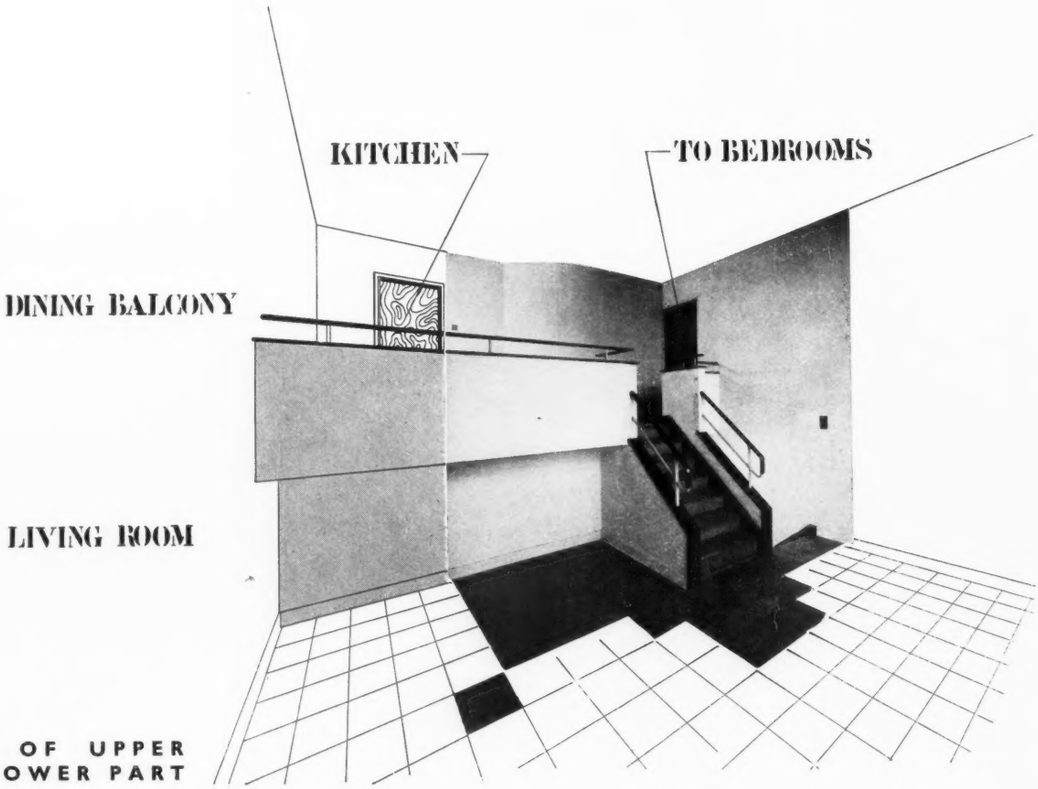
Sound insulation between flats has been provided, as described overleaf, by double partitions isolated from the concrete frame to prevent transmission of noise by vibration. The structural floors of hollow tile are covered by a 1½ in. screeding with foamed slag aggregate, which contains the pipe conduits in its thickness and also serves as an insulating layer. Over it compressed cork parquet flooring is laid in living-rooms and entrance halls, and close carpeting in bedrooms.

EQUIPMENT AND SERVICES

The central heating and hot water system is fed by an automatic plant in the basement; the fuel being pulverized coal, which is blown into a hopper through pipes direct from a lorry standing in the road outside the heating chamber. Service pipes are insulated with glass silk and placed in conduits or chases lined with slate. Heat is thermostatically controlled.

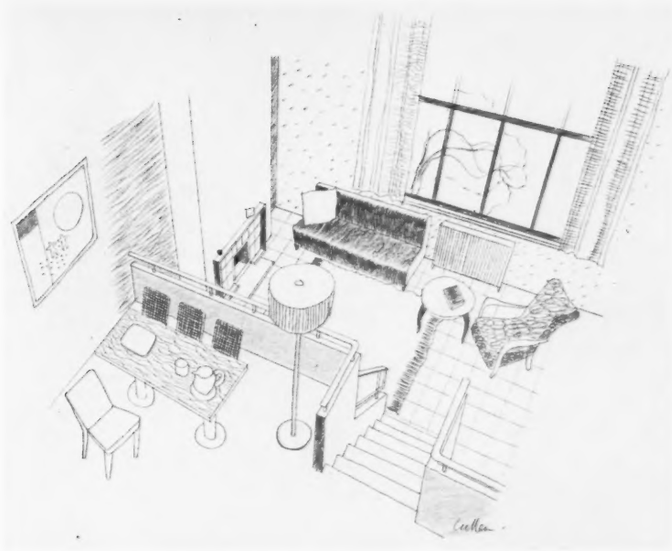
Bathrooms and kitchens are well furnished with built-in equipment, and have a mechanical ventilating system. The kitchen equipment includes stainless steel sinks and electric refrigerators for which the current consumed is included in the rent as well as service and maintenance. All kitchens have refuse compartments for standard size refuse bins, which can be collected by the porters from the service stairs without entering the flats.

The double-height living-rooms of the "three-two" flats have open

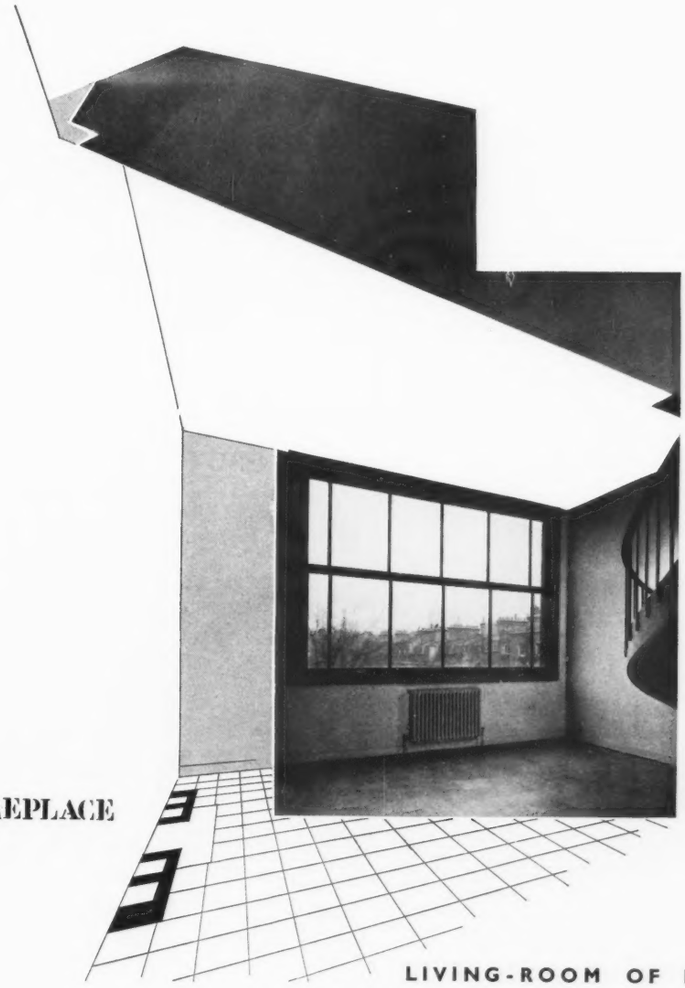


LIVING-ROOM OF UPPER LEVEL FLAT, LOWER PART

The illustrations on the facing page show the double height living-room of the upper of the two flats that comprise the three-two unit. Above is the room from the dining balcony on the upper (LU) level reached by a staircase from the centre of the room and giving access to the other room. The large window on the east wall is seen open at the bottom. It is a hospital type window with a teak sash, counter-balanced so that the large unit can be easily raised. Below is the some room from its floor level, looking towards the dining balcony. On the right-hand corner of the room are the stairs coming up from the entrance hall at the middle (LN) level. Below on this page is the double-height living-room of the lower flat, the stairs on right leading down from the entrance hall adjoining the upper flat on the middle level. The two types of living-room here illustrated are in each case, of course, over each other, together forming one "three-two" unit.



sketch of furnished interior of upper level flat



DOWN FROM HALL

FIREPLACE

LIVING-ROOM OF LOWER LEVEL FLAT

[continued from facing page]

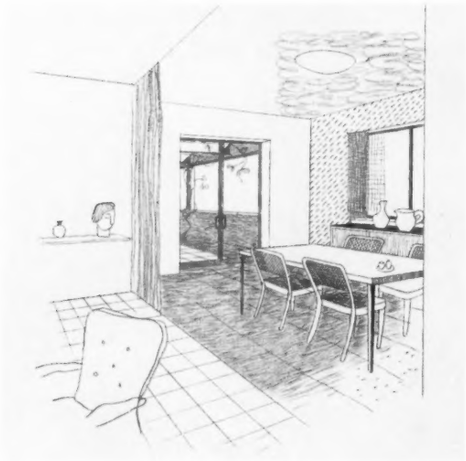
fire places with gas lighters, but the fuel to be used will be restricted (under the terms of the leases) to solid fuel in ready-packed cartons specially made available, for the storage of which cupboards are provided. The flats are wired for alternate wireless and television programmes.

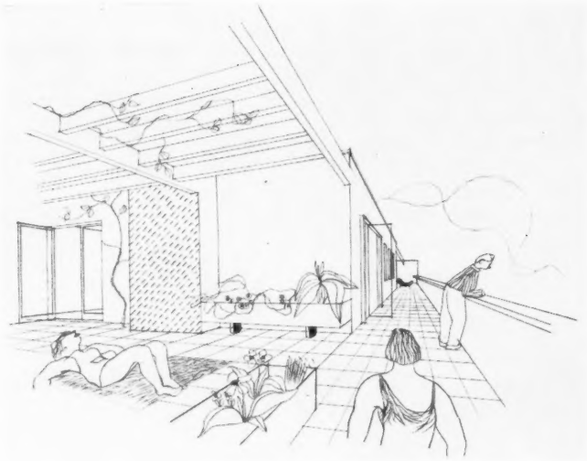
RENTS

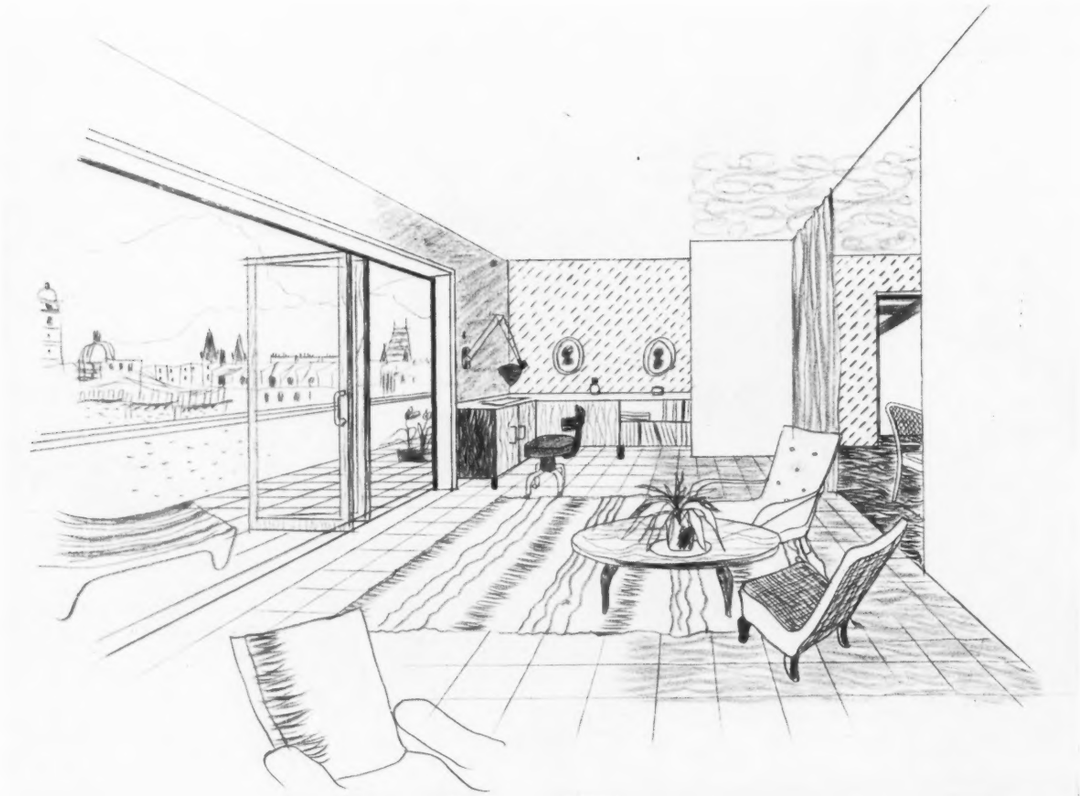
The rent of the "three-two" unit flats with the double-height living-rooms, are: two-bedroom, £310; three-bedroom, £350 and £375; four-bedroom, £425. The flats in the western annexe are £175, and the ground floor terrace flats, containing two bedrooms, are £260. The cost of the whole building, including equipment, works out at 2s. 3d. per cubic foot.

The Penthouse Flat

The penthouse flat which occupies the centre of the roof (see plan on page 177) also has the rest of the roof available for use as a garden and terrace. The portions either side of the penthouse flat, between the flat and the escape stairs at either end of the block, are covered by a pergola of concrete beams, to take awnings and climbing plants, as seen in the right-hand sketch below. The portion of terrace on the east side of the penthouse, on to which the living-room windows open, is uncovered and has an uninterrupted length of 120 ft. The other sketches below show the living-room, with the folding windows open to the terrace, and the dining-room, which is separated from the living-room by curtains or folding doors. This penthouse is a complete three-bedroom flat in itself, but it has been planned so that the sixth floor flat of the west block could be incorporated in it. The large room marked on the plan as a living-room would then be subdivided, aud the kitchen converted into another bathroom, so that this annexe provided three more bedrooms and two more bathrooms. The rent of the penthouse flat with this annexe is £700 a year. The sketches of interiors on this and the previous pages are by Gordon Cullen. The other drawings are by John Wheeler.







THE RURAL CRAFTSMAN TODAY

By H. B. Aldrich

Mass production and the sixpenny stores, mail order departments and high-power advertising, are making life difficult for some thousands of rural craftsmen, who are putting their sons in garages, or the Air Force, and are working only a few days a week themselves because it is too late to learn another trade.

Rural community councils, associations for the preservation of village industries and similar bodies, are working hard to preserve rural crafts. Unfortunately, sentiment and charity, however well-meant, will not provide the life-blood necessary for the saving of a dying industry, and there are many ancient crafts which are certainly doomed to extinction. In other cases, the craftsman's skill is being directed into channels which are in keeping with modern requirements, and in certain instances, the craftsmen in some country districts, working possibly with primitive tools, can turn out articles which meet a need more exactly than any product of modern machinery.

The blacksmith, the best known of the rural craftsmen, is today in a peculiar position. His services are necessary to most farmers, but in a far less degree than was the case thirty years ago. So one finds farmers complaining of a dearth of blacksmiths, and blacksmiths complaining of a lack of customers. It is necessary that a horse's hoofs should be shod, and that a blacksmith should be near at hand to do the work, but what is to happen when there are insufficient horses in a district to keep a blacksmith busy?

County rural community councils are tackling this problem by helping the blacksmith to adjust his craft to modern needs. They are sending expert instructors to village smithies, and they provide the smith with blue-prints and instructional booklets, so that nowadays many master farriers can make spare parts for tractors and repair farm implements expertly, 1.

There is another branch of the blacksmith's art that has not been so severely hit by modern conditions. This is the making of wrought iron gates and railings. The beauty of good ironwork is widely appreciated today, and many people realize that mass-produced work of a standard design is not the best choice for an Elizabethan mansion that is being restored or, indeed, for every condition that arises in modern building.

An interesting development is the introduction to the village smithy of oxy-acetylene welding. This quick and simple technique is today being widely used by country blacksmiths who have learnt that their craftsmanship gains, instead of loses, by the careful introduction of modern methods.

Some years ago one was fairly certain of finding the village wood-turner's shop somewhere near the smithy, 3. Today the smithy will probably still be there, but the chances are that the wood-turner's shop, with the old familiar swish and rattle of the clumsy lathe and the tang of the woodshavings, will be gone. Modern villagers buy their furniture on the hire-purchase system, and it is most certainly not made by craftsmen.

The wood-turner often combined with his own work that of a wheelwright, and if this was the case you would almost certainly find his shop close to the smithy, for the blacksmith has to join forces with the wheelwright in " hooping " or fixing the iron rim on to the cart wheel, 2.

At Usk, in South Wales, I found a seventy-five year old hurdle-maker at work, 6. His craft is both simpler and rarer than the wood-turner's. His name was Sam Turton. He is paid a shilling a hurdle (he is just finishing one in the photograph). His daily output is eight, though he said that at one time when his fingers were more supple he could make two dozen in a day.

Hand weaving seems now to be largely the prerogative of the ladies who keep Art Shops, but here and there in Great Britain one may still come across some of the old cottages where the spinning and weaving of wool brought in by local farmers is carried on.

In an old stone building in the village of Kilbarchan, in Scotland, I found last summer a weaver (or a wabster, which is the correct Scottish title) who weaves by hand the kilts for the Royal Family, 4. His name is Willie Meikle and he told me that at fifty-six he was the youngest of nineteen wabsters in the district, where half a century ago there were eight hundred. This is a vivid illustration of present conditions in the hand-weaving industry.

When people speak of rural crafts they rarely seem to think of the hedger. Perhaps they feel that his work is not sufficiently skilled, but anyone who examines the product of a competent hedger will agree that he has a perfect right to rank with any rural craftsmen. He, also, is not having a very easy time

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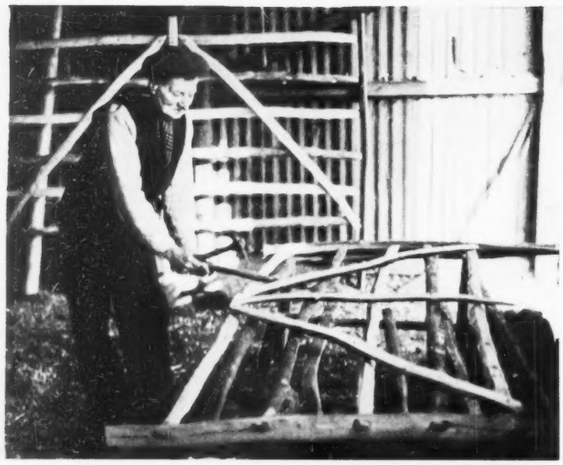
1, the blacksmith includes the repair of agricultural implements among his activities, to compensate for the decline in the demand for his services as farrier. 2, the blacksmith works with the local wheelwright in putting the iron rim on to a cart wheel. The iron is heated on a turf fire. 3, the village wood-turner in his workshop. 4, a Scottish weaver who is also Royal kilt-maker. 5, the village carpenter makes a gate (from " The Village Carpenter," by Walter Rose, by courtesy of the Cambridge University Press).



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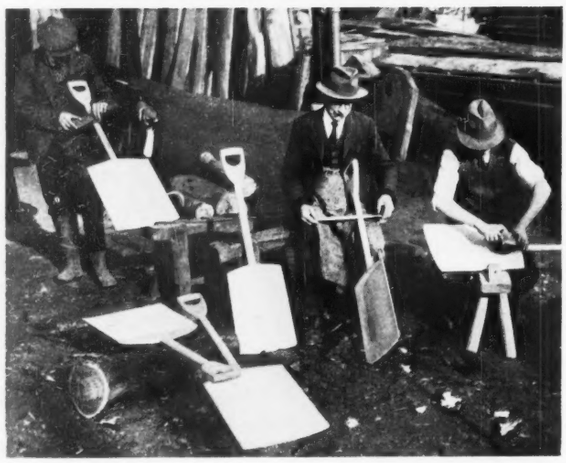

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at present, and the increased use of wire in those districts where there is no hunting is understandable from the farmer's point of view, for hedging is an expensive job which has to be paid for by the yard. But it is to be hoped that it will be a long time before we lose the countryman with a hedging-hook who knows exactly how deeply he can cut into saplings in order to bend them and weave them swiftly and neatly into the living hedge he is making without destroying the life in them. Hedging and ditching competitions are still held regularly in many country districts, and they help to keep the craft up to a high standard.

So far with the exception of a diversion in the instance of a Scottish weaver, we have discussed only village craftsmen, those craftsmen whose existence dates from the times when communications were so bad that every village was to a large extent a self-supporting community with a miller, smith, shoemaker, weaver, wheelwright, builder and many another craftsman to meet the requirements of the inhabitants. There is another kind of rural craftsman who is to be found in some village or country town which specializes in a particular craft, probably because there is suitable material in the locality, and which contains a colony of craftsmen who are often the descendants of men who did the same work centuries ago.

Some pottery works, particularly certain of the smaller ones which use local clay for the production of earthenware milk basins and similar articles, have sprung from such colonies.

There are interesting examples of colonies of craftsmen in Cheshire, which for untold centuries has been famous for its basket-makers. They work with very simple tools which they will not willingly demonstrate to visitors if they think they are likely to pass the knowledge on to other basket-makers in less exclusive circles. There are similar colonies in Nottinghamshire and Leicestershire, which are good districts for the willow wands from which the baskets are largely made.

A colony of craftsmen which I believe is unique exists in Norwich, where there is a spade-making industry, 7. These Norwich spades are made entirely of wood and are genuinely "hand-made." They are used by brewers and millers.

There are no colonies of craftsmen more interesting than those of the coracle fishermen, who make their own boats and fishing tackle, which are still to be found on four rivers near the border between England and Wales. The rivers are the Dee, the Teify, the Towy and the Severn. These coracles are the boats which the Romans saw when they came to Britain, and in appearance, and even in the way in which they are made, they have altered very little in two thousand years.

When the Romans saw them the coracles were made of willow basket-work covered with hides; today they are made of willow basket-work covered with canvas which is treated with pitch and resin to make it watertight. I do not think their shape has altered much, for although they are described by early writers as being circular, whereas today they are roughly boat-shaped, they are very wide at the stern and blunt at the prow which makes them look almost round when they are in the water.

The coracles are made by the fishermen and their families, usually in the winter, and the salmon nets which are used with the coracles are also home-made. The home-made paddles look very clumsy and their blades are hardly larger than a man's hands, but with a skill which is probably to some extent hereditary the fishermen send their frail little boats skimming over smooth stretches of water and jumping perilously down rapids.

Local fishery boards claim that the coracle owners, who fish for salmon from April to August, spoil the sport for anglers, and in recent years fewer and fewer licences have been issued to them. The present position of the coracle fishermen is insecure, and I do not think that one has necessarily to be a sentimentalist to regret this.

Sail-making is today usually the work of firms who are able to bring modern methods to the assistance of an ancient and interesting craft, but in certain fishing villages one may still find some of the old sail-making yards, 8, with perhaps two or three craftsmen at work, and the several I have visited have been fairly busy.

Boots "made to measure" are a luxury these days, and the craftsman who makes boots or shoes by hand is a rarity. Apart from those catering for a small luxury trade, however, there are still bootmakers to be found who do their work by hand and who fit their customers in much the same way as tailors. In a remote corner of Wales there are five or six bootmakers who are the last (for they have no apprentices) of an interesting colony of bootmakers. The village is Llanbrynmair, in Montgomeryshire, and the boots which are made here are heavy, hobnailed ones for country people. At one time this village was noted over a large area for its boots, but now the craft is dying. The present bootmakers use the same methods as their grandfathers, and still measure their customers' feet by the simple method of placing the foot on a sheet of paper and drawing round the outline with a pencil.

Thatchers, 9, are not usually found in colonies in the strictest sense of the word, but, nevertheless, a number may be found in one county and not a single one in the next. This is, of course, due to the differences in the typical building styles of various districts. There are, incidentally, two distinct kinds of roof thatching, straw thatching and reed thatching. The use of straw greatly lessens the cost of the work, but reed thatching lasts much longer.

In those counties in which thatched roofs are customary one will usually find particularly well-finished ricks, for the thatchers do this work, which undoubtedly helps to preserve their craft; but in spite of this and the popularity of country cottages at the present time, thatching is not a flourishing art. The thatcher is apparently being put out of business by the cheap, coloured tiles of various patterns which might pass muster in certain districts but must inevitably be objectionable in a county of winding lanes and thatched cottages.

6, a South Wales hurdle-maker at work. 7, the wooden spade industry of Norwich: an example of a colony of craftsmen peculiar to one neighbourhood. Their spades are used by brewers and millers. 8, a sail-maker at work in a Dorset sail-loft. 9, the thatcher at work with Norfolk reeds.

1

CURRENT ARCHITECTURE

HOUSE AT HAMPSTEAD Oliver Hill, architect

2

3

THE SITE is that of a former Government Telegraph Station and one of the highest in Hampstead, some hundred yards from the Heath. The site slopes steeply up from the road to the crest of a hill from which the Weald and Harrow may be seen to the west, and the Surrey hills to the east and south. The house is sited on the highest, north-west, corner of the plot.

1, a general view of the entrance front. 2, a detail of the entrance porch. 3, the hall and staircase.

HOUSE AT HAMPSTEAD

Oliver Hill, architect

PLANNING The slope of the site was too steep to form a drive up to the house conveniently. The garage is therefore placed on the road-level, with a flight of steps, alongside a connecting screen wall, leading up to the entrance. As will be seen from the plan below, the steps continue up—inside the house, beyond the entrance porch—until the main floor level is reached.

STRUCTURE AND MATERIALS Reinforced concrete and brick construction is used, an external feature being the battered terrace retaining wall in reinforced concrete, faced with bricks laid vertically. The retaining wall holds up the soil excavated and levelled to form the terrace. Facing bricks are thin, heather-coloured and laid with wide mortar joints. Thin stone copings, cill-lines and pier reveals are also used. Sliding windows to dining- and sitting-rooms are in cedar, other windows being in metal, painted blue-green. Ceiling soffits to loggia and sleeping porch are coloured primrose yellow.

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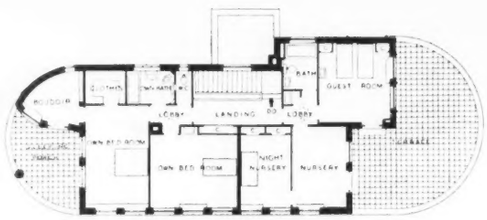
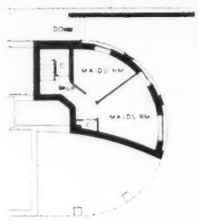
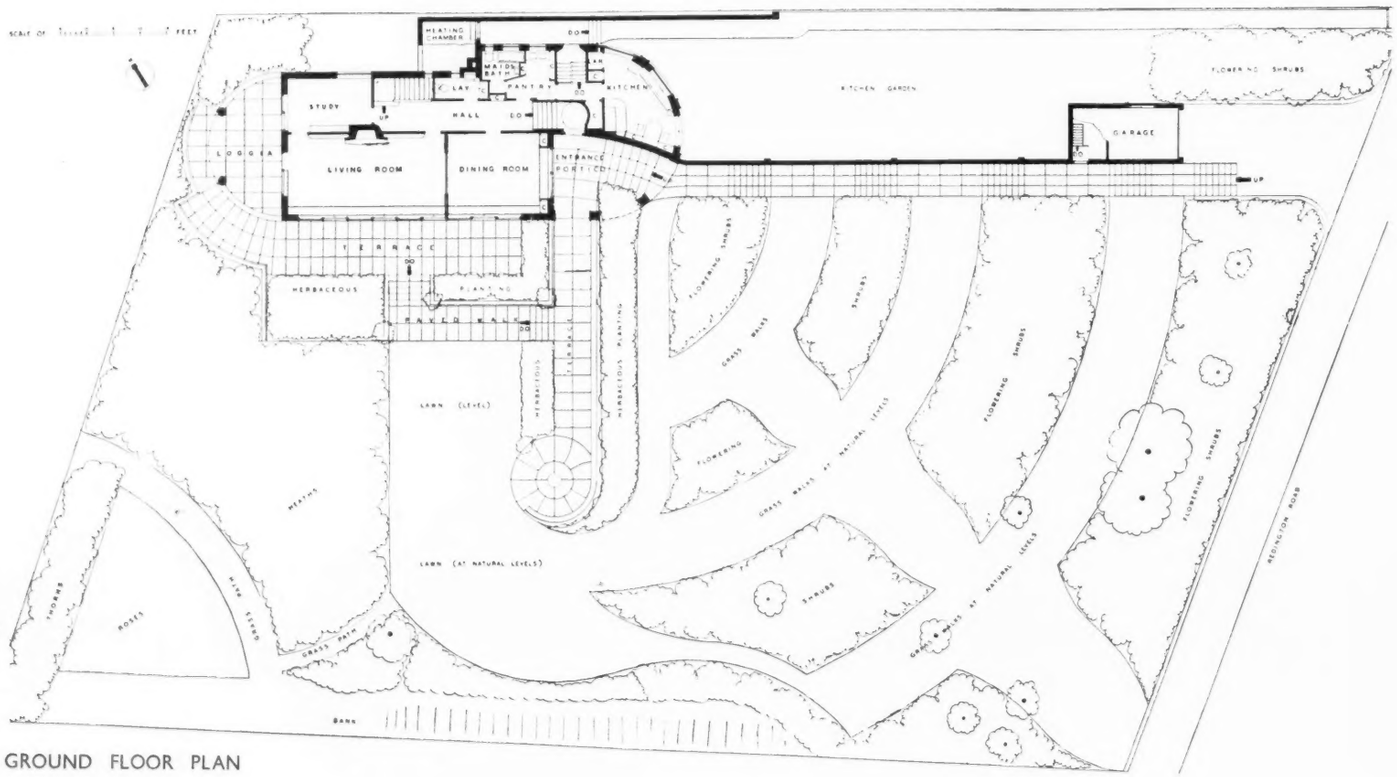


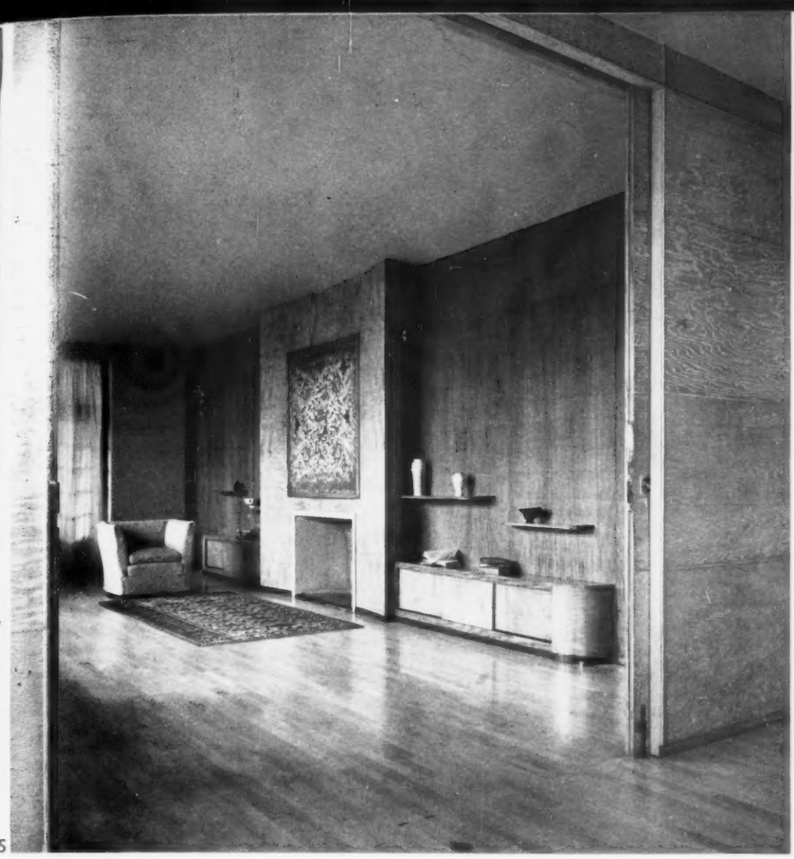
FIRST FLOOR PLAN



LOWER GROUND FLOOR PLAN



GROUND FLOOR PLAN



FINISHES Internal finishes are generally in wood, the dining-room being faced in rectangular pinewood panels, sand-blasted to accentuate the texture. The long wall of the living-room is panelled in plain walnut. Entrance hall and stair are painted matt white, using a vertically grained texture. Three convex columns mask the strip lighting to the stair, one of them being seen in 3, on page 187.

4, a detail view of the living-room showing the plain walnut panelling with slightly raised rectangular panels pressed into the surface by a special process. The curved fireplace front is veneered in weathered sycamore, the ceiling is rough-textured and painted a pale green. Curtains are of coarse buff-coloured silk, vertical strip lighting being provided on either side of the fireplace which is furnished with an antique Chinese needlework panel having a pale yellow ground. 5, a general view of the living-room through the sliding doors in weathered sycamore to the dining-room, the staggered shelves to the right of the fireplace are let direct into the wall-panelling. 6, a corner of the dining-room, the sliding doors being closed, showing the pinkish-grey wall panels of sand-blasted pine. The flooring is of ivory-coloured silkwood.

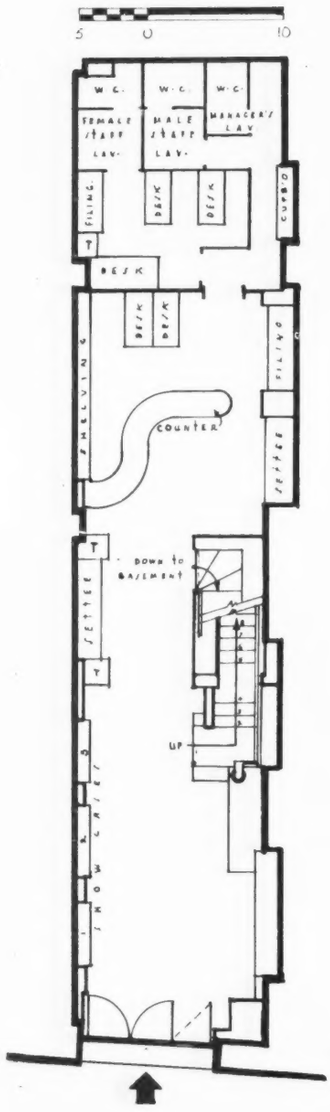
TOURIST BUREAU IN PICCADILLY Michael Rachlis, Architect

PLANNING The building is used primarily as an information bureau for intending visitors to Italy; it comprises basement, ground and first floors, the latter being given over to offices. The information bureau itself is placed to the rear of the ground floor.

1, the entrance front in silver and black anodised aluminium, the lower part of the front consisting of three doors arranged to fold back leaving the entire width open. 2, looking down towards the entrance from the first floor stair.

TOURIST BUREAU IN PICCADILLY

Michael Rachlis, architect



GROUND FLOOR PLAN

STRUCTURE AND FINISHES In the existing structure the left-hand wall was broken up by brick piers; a new plaster-faced wall was therefore erected to give an unbroken surface, in the cavities thus formed anodised aluminium-framed showcases being arranged. At the back of each showcase a single large photo-mural of an Italian scene, assisted by concealed lighting, gives the effect of a window view to the open air. General indirect lighting is from deep ceiling coffers. The new stair to the first floor is faced in travertine marble.

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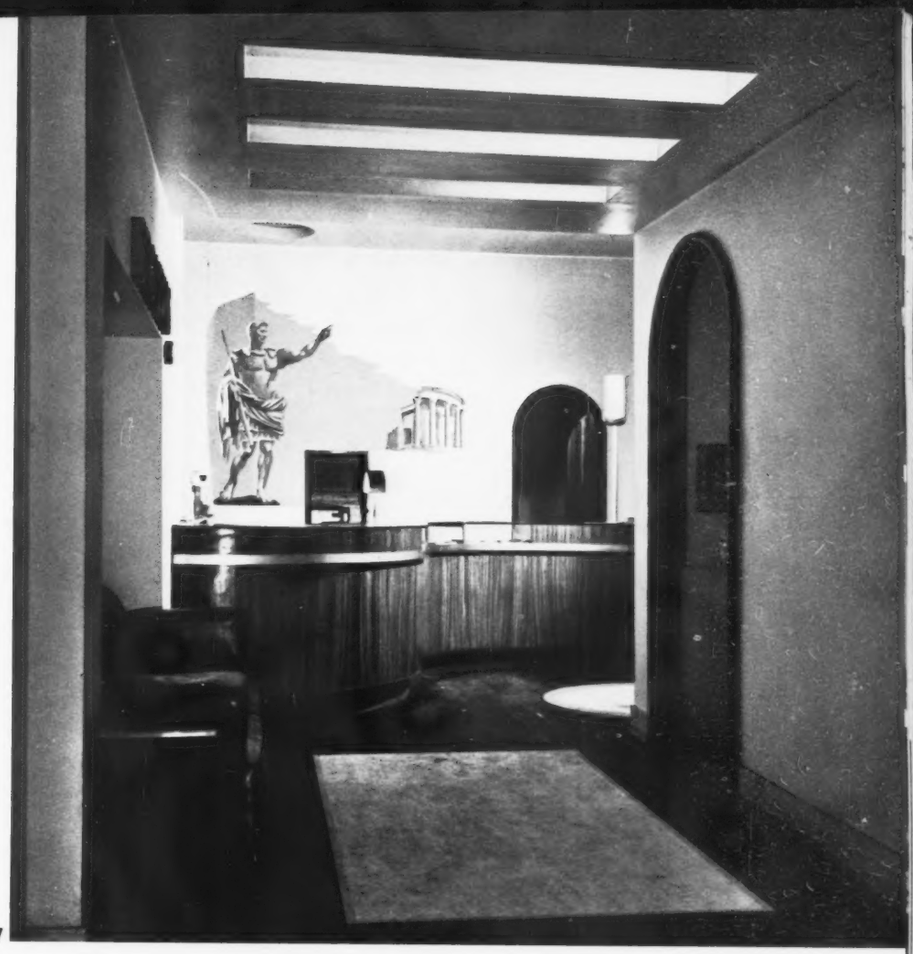


7

3, a general view of the front section of the ground floor showing the wall map of Italy carried out in black anodised aluminium, flanked by photo-murals and antique pottery; to the left is the staircase approach in travertine marble. 4, 5 and 6, details of photo-murals and a wall-design by Hans Feibusch. 7, looking towards the rear of the ground floor with its serpentine-shaped counter in lemonwood veneer and gold-coloured anodised aluminium; behind are two further murals by Hans Feibusch.

NURSES' HOME AT LEWISHAM Bertram Carter, architect

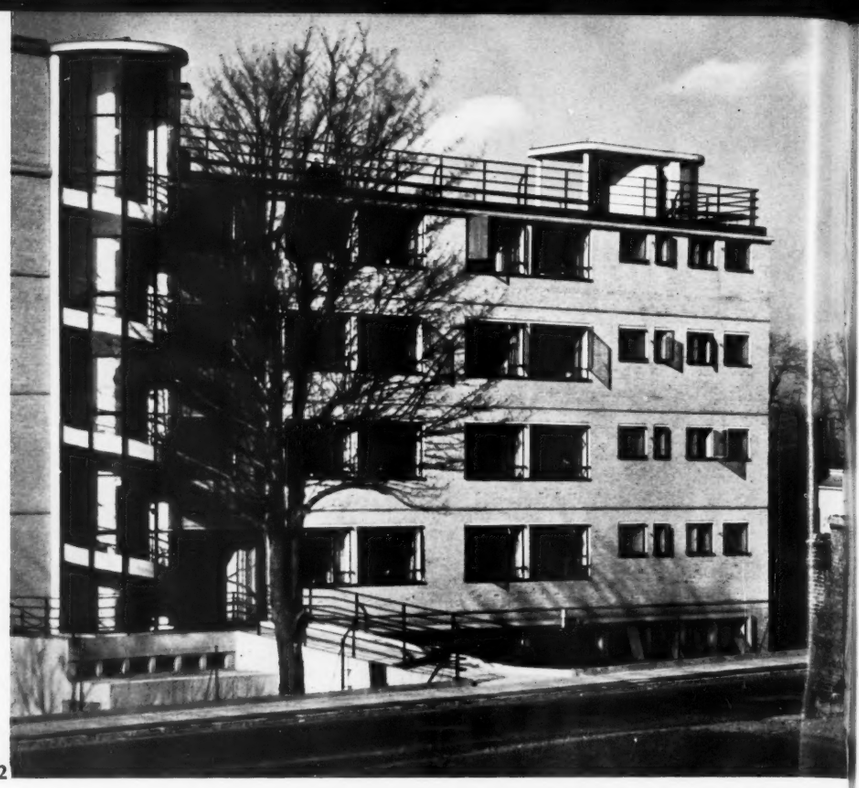
1

THE SITE comprises some seven acres overlooking Blackheath, the nurses' home being placed parallel with the road and at right-angles to the existing hospital. The present building contains 53 bed-sitting-rooms, but ultimate extensions will provide for a total of 125.

1, a general view of the garden front, showing existing out-patients' department through the trees to the left.

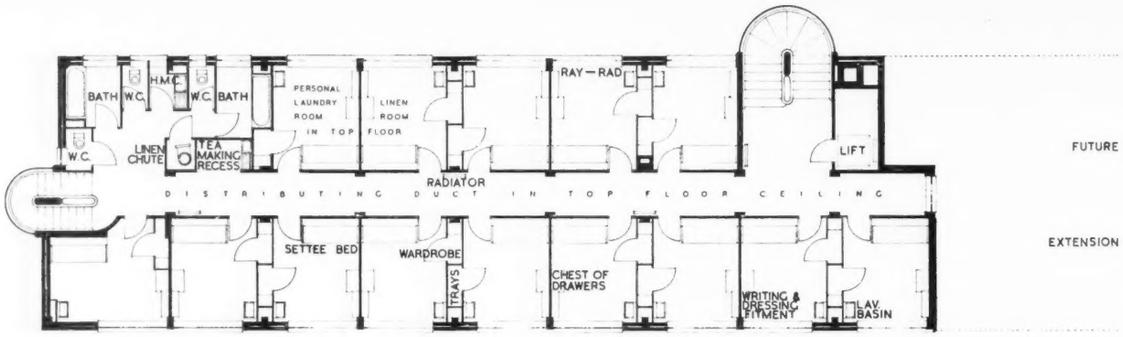
NURSES' HOME AT LEWISHAM

Bertram Carter, architect

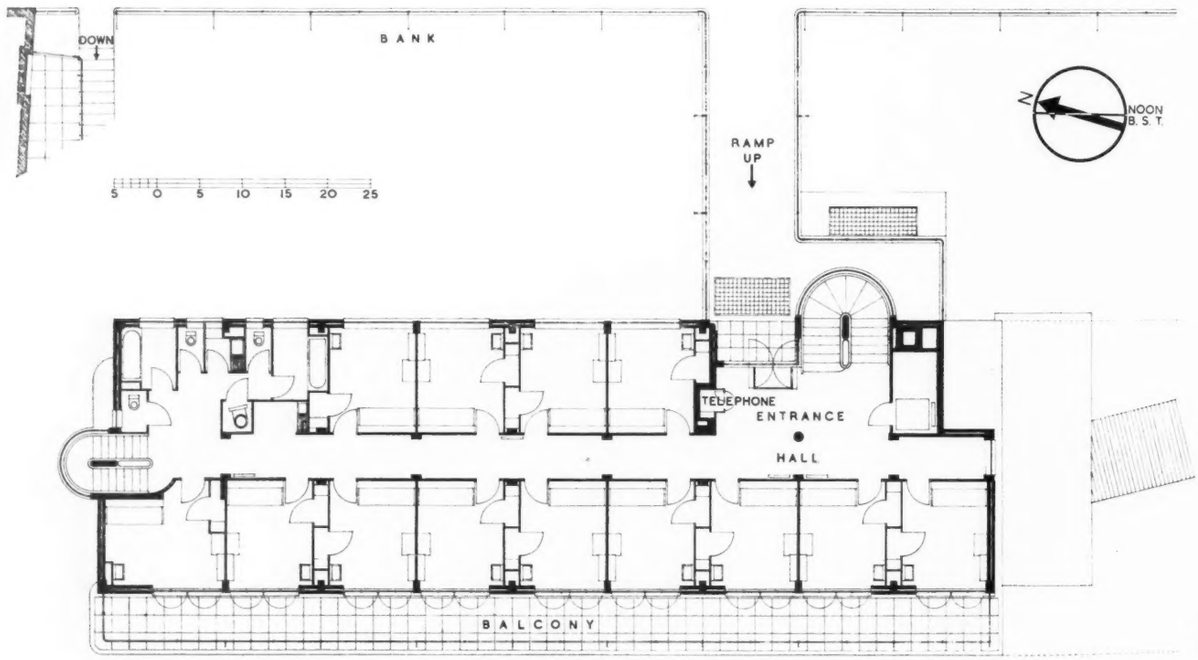


2

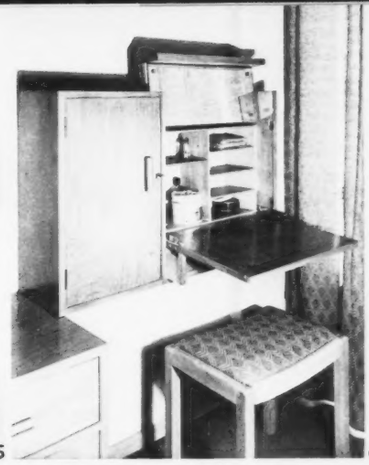
PLANNING The accommodation includes 53 bed-sitting-rooms, and kitchen and dining-room accommodation. The ground falls steeply down from the road, the main building axis being taken along the site contours, continuing the slope on the garden front, the terrace bank being formed from excavated soil on the entrance elevation. Since the present building represents only two-fifths of the final scheme, it contains no main entrance space or stair, two glazed-in escape stairs serving immediate needs. Kitchen and dining-room, however, already provide for the full final complement of 125.



TYPICAL UPPER FLOOR PLAN



GROUND FLOOR PLAN



2, view of the entrance elevation showing the glazed-in escape stair on the left, with the head of the second rising above the roof-line to the right. 3 and 4, show day and night positions respectively of the bed-settee standard to all rooms. 5 and 6, show open and closed positions of the standard wall fitment, in 5, the hinged section above the shelves being a mirror. 7, a view of the dining-room on the lower ground floor.

STRUCTURE AND FINISHES The main structure is of steel frame with reinforced concrete floors and roof, the latter being finished with perforated insulating tiles. Externally, walls are faced with a light-coloured brick, windows being in metal. Floors throughout are in cork with the exception of the birch strip to the dining-rooms on the lower ground floor—to form a dance floor. The kitchen is floored with buff quarry tiles.

FACTORY AT WELWYN O. R. Salvisberg, architect C. Stanley Brown, associate

THE SITE A five-acre open flat site with road frontage to the east. Buildings and access were kept to the north, the south being laid out as lawns.

1, a general view of the main building from the access road to the north.

FACTORY AT WELWYN

O. R. Salvisberg, architect
C. Stanley Brown, associate

2

3

PLANNING Comprising administrative, processing and manufacturing buildings for a firm of manufacturing chemists, the block form was controlled by separate access requirements for administration and processing blocks, with the factory itself as an isolated building.

STRUCTURE AND MATERIALS Reinforced concrete construction was employed, walls being 5 inches external concrete, 7 inches airspace and 3 inches hollow-block internally. Roofs to multi-floor block are in reinforced concrete with asphalt finish, with those to single-storey blocks in steel frame with wood joists and finished with patent macadam roofing. R.W.P.s and gutters are of copper.

EQUIPMENT AND FINISHES Floors to offices are in oak block, elsewhere in granolithic with the exception of rubber flooring to the laboratories and tiling to lavatories. Metal windows and frames throughout are painted blue. Joinery generally is in ash with that to the directors' offices and conference room in walnut, solid and veneer. The entrance lobby and skirting are of travertine and the stair of oak with a silver-bronze balustrade. Heating and hot water throughout are from the boiler-house in a separate block. A main duct carries mains to a central distributing valve, thence runs are distributed by ducts and concealed risers.

2, a detail of the main entrance porch. 3, the main entrance doors. 4, the entrance lobby. 5, the women's cloakroom. 6, a detail of the conference room.

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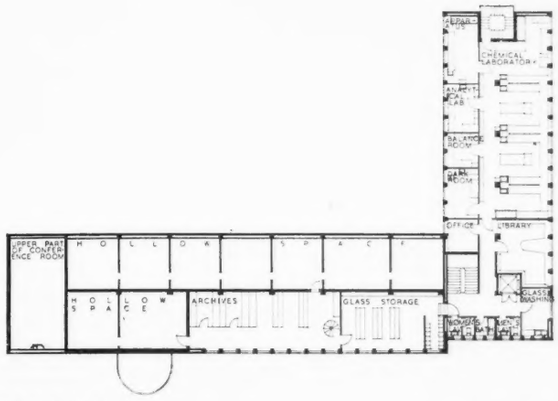
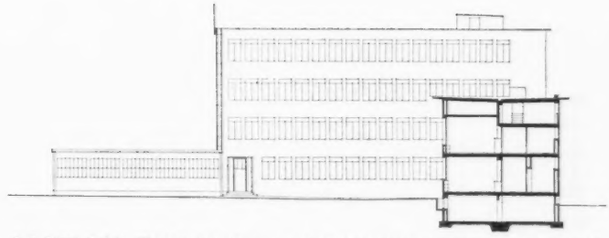
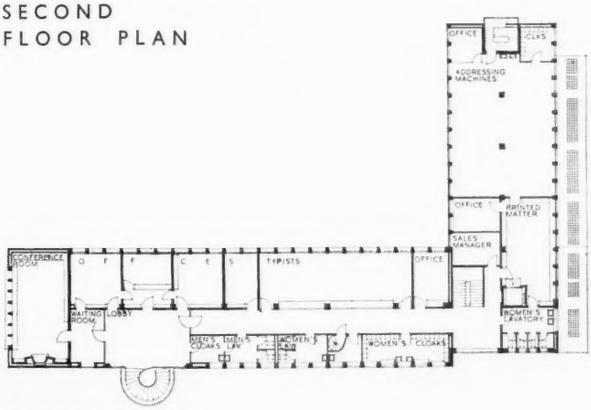


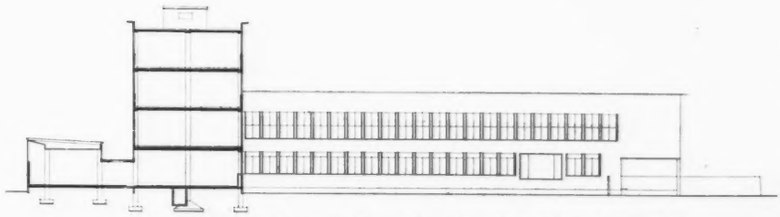
SECOND
FLOOR PLAN



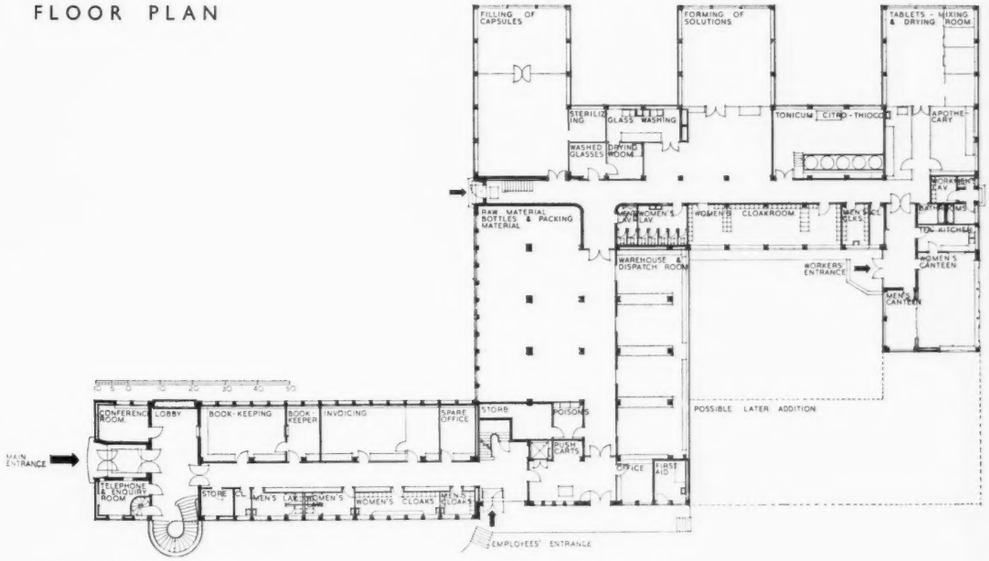
SECTION THROUGH ADMINISTRATION BLOCK



FIRST
FLOOR PLAN



SECTION THROUGH MAIN BLOCK

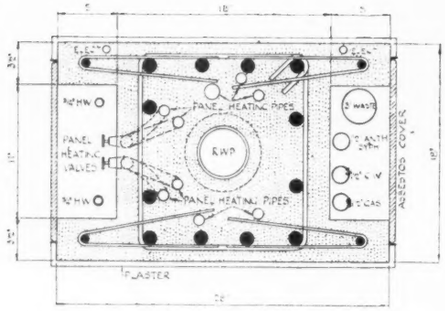


GROUND
FLOOR PLAN

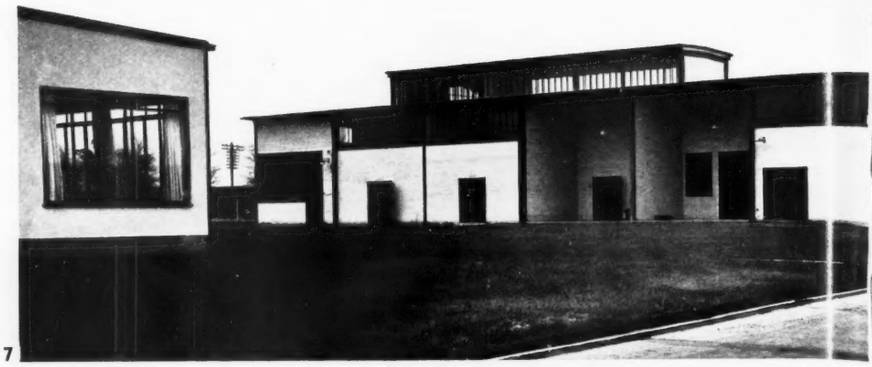
6

FACTORY AT WELWYN

O. R. Salvisberg, architect
C. Stanley Brown, associate



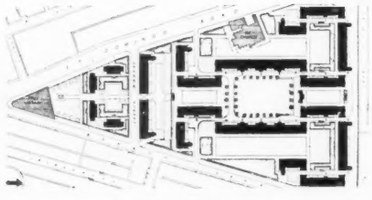
REINFORCED CONCRETE COLUMN SECTION



7

7, a view of part of the factory block, with sand-lime brick panel walls and roof in steel frame having wood joists and patent macadam roofing finish; as elsewhere window-frames are painted blue. Left, section through a typical reinforced concrete column to the main structure showing the incorporation of all services in ducts running down two sides of the column.

FLATS AT LIVERPOOL L. H. Keay, architect F. H. Morley, assistant

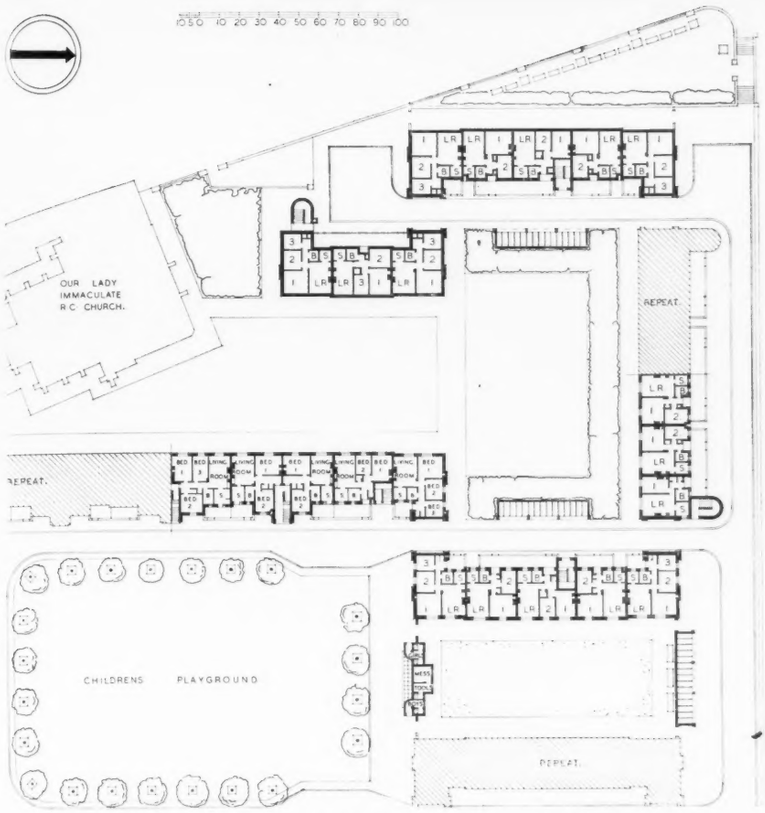


SITE PLAN

THE SITE was previously occupied by a college with extensive playing fields; it forms a triangular island plot.

PLANNING Blocks generally are in five storeys, access being by continuous balconies. Living-rooms and principal bedrooms are planned to overlook a planted court, lawn or other open space.

1



PART GROUND FLOOR PLAN

2

STRUCTURE AND FINISHES External walls are in 14 ins. brick, floors in 8 ins. reinforced concrete with reinforced concrete lintels and balconies. Roofs are in timber, felted and tiled. Elevations generally are in golden-brown rustic facings mixed with multi-coloured facings.

1, a detail view of the Penrose Street façade. 2, a general view of the Penrose Street front showing access and individual balconies.

LIBRARY AT ROTTINGDEAN

Aileen and William Tatton Brown, architects

1

THE SITE In this reconstruction job the problem consisted of replanning the existing Rottingdean School library to meet present requirements while at the same time endeavouring to harmonize with the general architectural surroundings—a brick and flint interpretation of French gothic.

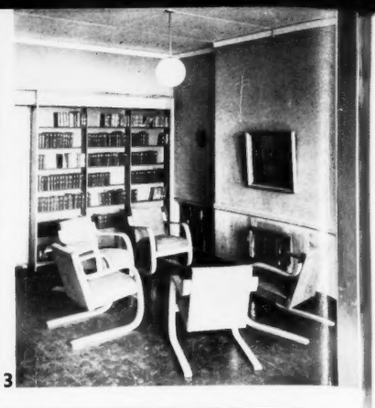
PLANNING In addition to use as a library, the room serves during school hours as a classroom for lower forms and also as playing space for table games in the evenings. This triple purpose was met by allotting one wall to the furniture for each of these requirements.

1, a general view of the space reserved for table games. The columns are retained from the existing external wall, the colour scheme being a light blue with blue and white curtains and flame-coloured recesses.

LIBRARY AT ROTTINGDEAN

Aileen and William Tatton Brown, architects

2



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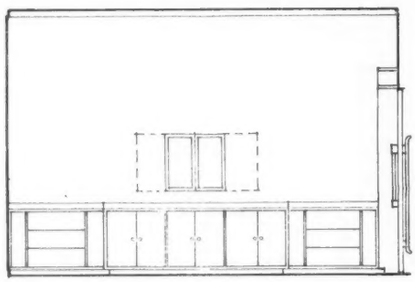
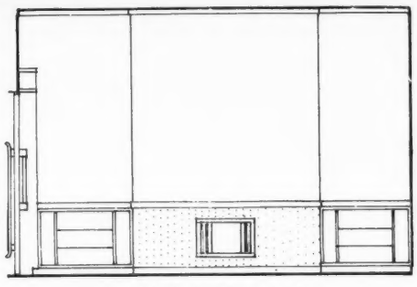
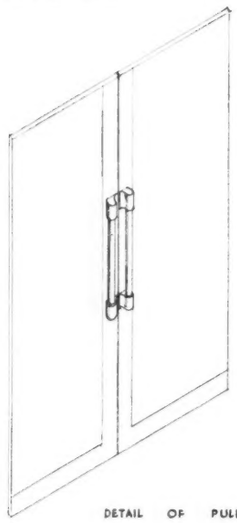


CLASS ROOM WALL

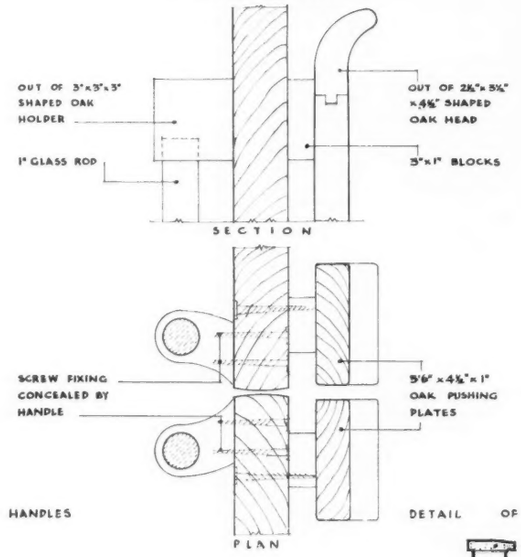
LIBRARY WALL

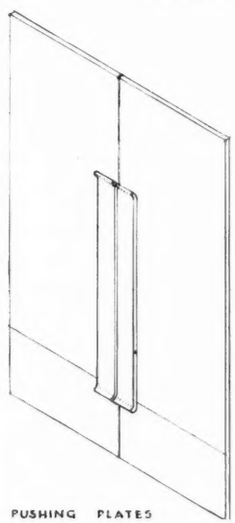


FIREPLACE WALL

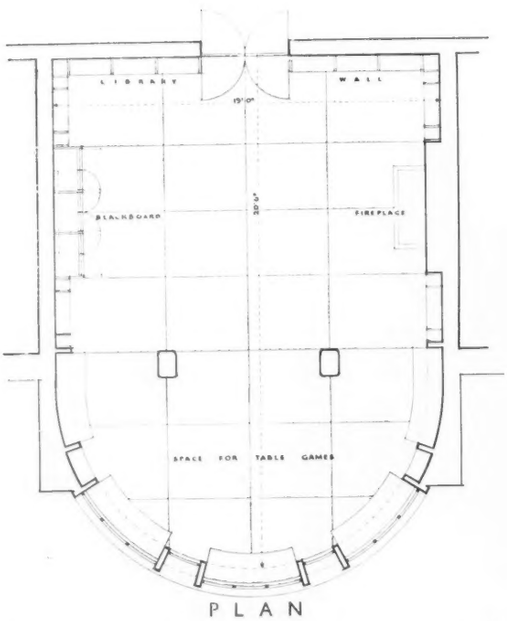


DETAIL OF PULL HANDLES

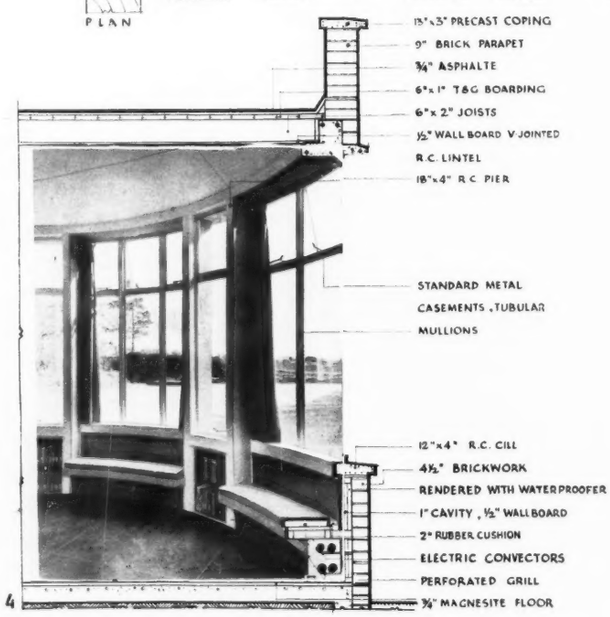




DETAIL OF PUSHING PLATES



PLAN



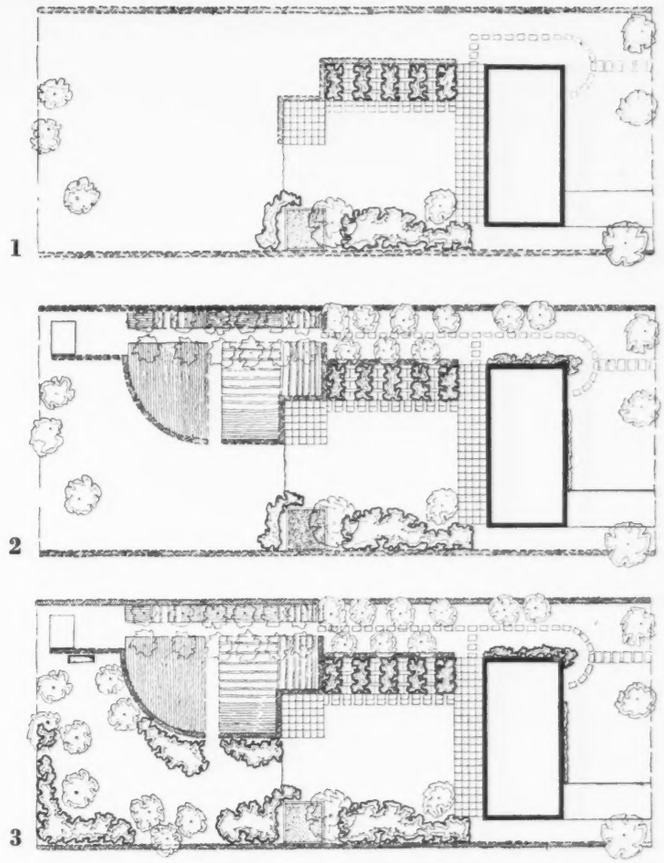
4

FINISHES Fixed furniture and shelving has been designed to the scale of the children; the floor finish is in a shade of nigger brown.

2, the classroom on the left and reading space on the right. 3, the reading space, and 4, a corner of the play space showing the construction of the new bay projecting out from the existing building line; electric heating tubes concealed by a metal grille run under the seats.

The Sectional Layout of a Small Garden Plot

There are many advantages of a garden plan which can be carried out over a period of years, assuming that care is taken to provide the essentials of a garden for the owner before completion. Many people prefer to distribute the expense and labour of the layout in this way, but few garden plans admit of such treatment unless they are designed expressly for this purpose. The illustrations on this page show a small garden designed to be completed in three separate operations, bearing in mind that at all stages the garden should have the effect of being already complete.

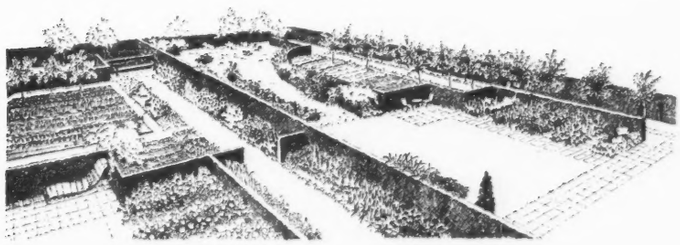


In the three garden plans above, 1 shows the scope of development suggested for the first season ; paths and terrace are completed, hedges and tree-planting begun. In 2, the second season's development includes addition of a kitchen garden. 3 shows the final stage of cultivation in the third season, when formal, informal and kitchen gardens are linked up to make a unified whole. The sketch below on the left shows variations on the same theme in adjoining suburban gardens.

The First Year

The first season's work, which can be assumed to coincide with the completion of the house, necessarily involves the heaviest expenditure. Paths must be made to the front and back entrances, as well as a terrace on the south side; hedge planting must be carried out—if it is not to extend round the perimeter of the plot there must be at least sufficient of it to screen the small garden which is to be made this season. The front garden is sown down to grass, and if on a housing estate perhaps it is left open to the pavement. Here also, if the occupants have a car, a combined approach and washing space to the garage is made. This may all be regarded as preliminary work which should be reckoned in with the first cost of the house.

The first season's garden represents a Minimum Garden unit for housing estates similar to that which was described on these pages in September, 1938. It provides a small lawn, and regular flower beds for roses, herbs or bedding subjects, with paths made of concrete paving slabs between them to assist the cultivator. A hedged sitting-space away from the house is provided, where shade can be found on hot summer days when the terrace is in full sun. Opposite is a space for a children's sandpit, summer house or store shed, and from there back to the house runs a border for flowering shrubs. This can have tree planting at the back to act as a screen to the neighbouring garden. The remainder of the site is left in its rough state, except for an occasional trimming of the long grass in summer, or it can be dug over and seeded for a catch crop of potatoes.



The Second Year

The path from the front entrance is extended as far as a new kitchen garden and planted on either side with fruit trees, the line of which may be continued into the kitchen garden itself with bush and soft fruits. This is hedged off from the remaining rough piece, the hedge continuing further to screen a space for rubbish, plant frames and soil heap. A garden shed could well be placed in this corner. The paths in this section should be of gravel since turf is likely to get worn. Flower and kitchen gardens are now complete.

The Third Year

The third and last unit of the garden is a connecting link between the formal garden and the kitchen garden, making possible a walk round the garden in which all sections can be visited without any retracing of steps. It can take the form either of an area of rough grass planted with bulbs and flowering subjects which thrive under such conditions, or of a lawn continued through the entire area and banked with trees and shrubs

on either side. In each case it affords a pleasant view from the house, and one which is not so open as to do away with any desire to explore it. The trees in this section and the preceding one could well be planted at the commencement of gardening operations, or before the house is built, so as to become well established by the time these parts are ready for use.

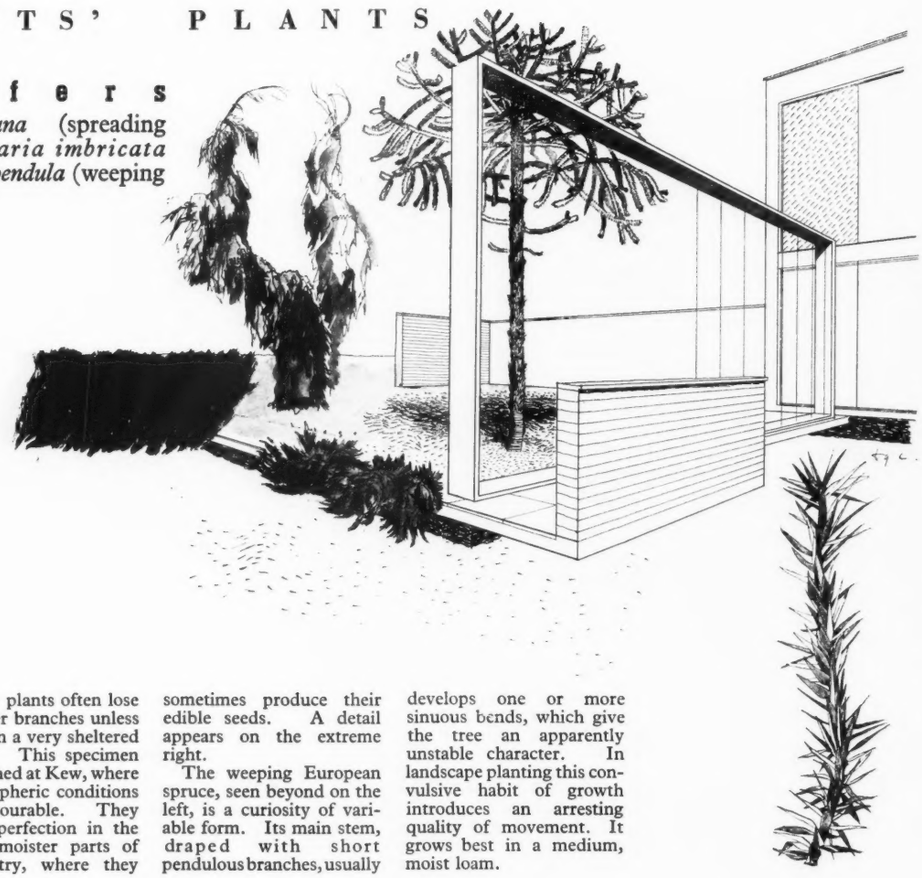
The sketch (on the previous page) shows the completed design used in adjoining gardens of a housing estate. Although the structure of each garden is identical the owners have varied the planting according to their needs and in each case have produced an individual result. Such treatment of the planting, which is all that most people care to attempt in the way of design, is a safeguard against monotony, and there is thus no reason why a whole estate of gardens laid out to a single ground plan should not produce an imaginative and coherent pattern in the neighbourhood unit.

C. T.

ARCHITECTS' PLANTS

4. Conifers

Juniperus chinensis Pfitzeriana (spreading Chinese juniper); *Araucaria imbricata* (Chilean pine); *Picea excelsa pendula* (weeping European spruce).



The cone-bearing trees as a whole are useful in gardens for their varying evergreen shapes; among this large class only very few kinds are deciduous. The sketch shows three types of conifer having contrasting habits of growth —semi-prostrate, regular pyramidal and contorted weeping forms.

In the foreground of the sketch (on the steps of the terrace) are shown two young specimens of the spreading Chinese juniper, one of many semi-prostrate conifers, of which the savins are the best known examples. This one has horizontal branches with pendulous tips and is grey green in colour. It does not object to a dry soil.

The familiar Monkey Puzzle or Chilean Pine (shown to the right) is best given a position by itself or grouped with its own kind —young plants on a lawn make a dark star-like pattern which is sometimes a pleasant change from the less precise growth of many other trees. As they get older, the plants often lose their lower branches unless they are in a very sheltered position. This specimen was sketched at Kew, where the atmospheric conditions are unfavourable. They grow to perfection in the warmer, moister parts of the country, where they sometimes produce their edible seeds. A detail appears on the extreme right.

The weeping European spruce, seen beyond on the left, is a curiosity of variable form. Its main stem, draped with short pendulous branches, usually develops one or more sinuous bends, which give the tree an apparently unstable character. In landscape planting this convulsive habit of growth introduces an arresting quality of movement. It grows best in a medium, moist loam.

ART OUT-OF-DOORS

Sculpture is not always designed for a particular setting, but an ideal arrangement for it usually exists in the artist's mind. In spite of the fact that sculptors are being offered far more garden and landscape backgrounds, it is the common fate of the majority of works conceived in terms of the open air to be placed in galleries, private houses or museums. The debased tradition of garden and civic decoration is no doubt partly the cause of the general lack of interest in out-of-door aspects of the art. The composite illustrations on this and the facing page are an attempt to relate some specimens of sculpture to a background which in scale and atmosphere might produce mutually helpful associations. The sculptor whose work is used for this experiment is Barbara Hepworth. It is intended in future months to ask other sculptors, with different viewpoints, to collaborate in a similar way. It is hoped that the whole series may provide an opportunity of finding in works of art new values which are not apparent in the show-room. The notes about the individual illustrations are the result of an interview with the sculptor.

BARBARA HEPWORTH on whose sculpture the experimental illustrations on the facing page are based, believes that all good sculpture was, and still is, designed for the open air and that only the obscurity with which the museum age has enveloped it prevents a general recognition of this fact.

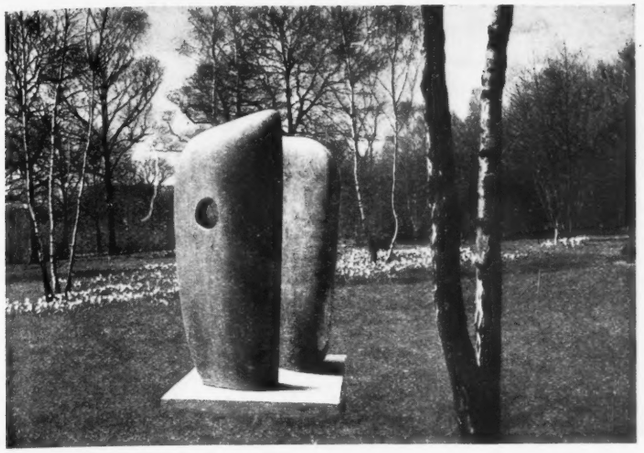
4

1 The sculpture has an upward growth but the curves of the two monoliths make a closed composition which, in the open, with light all round, they create a quietness, a pause in the progression of the eye.

2 The sculpture shown here consists of a poised upper form which appears quite free, yet is contained and held by the form below it. The scene is a change in level from house terrace to a lower garden, which is echoed by the form of the sculpture.

3 In this enclosed space the eye finds a vertical emphasis in the columns of the building and in the trees outside. The circular mass of the sculpture gives a quality of contrast which is logical for this position, and the rhythm of the composition satisfies the needs of a changing eye-level.

4 The sculpture, of white stone, is composed of one form balanced on another, and presenting a series of curves. The whole composition is held within the cube of its base, which gives a feeling in the spectator that the planes of the building and the garden are not disturbed.



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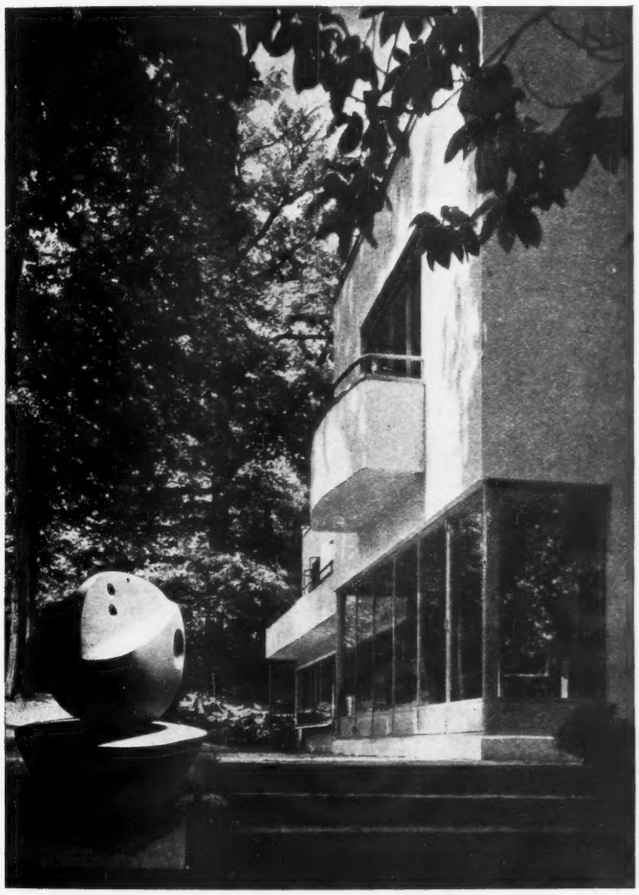

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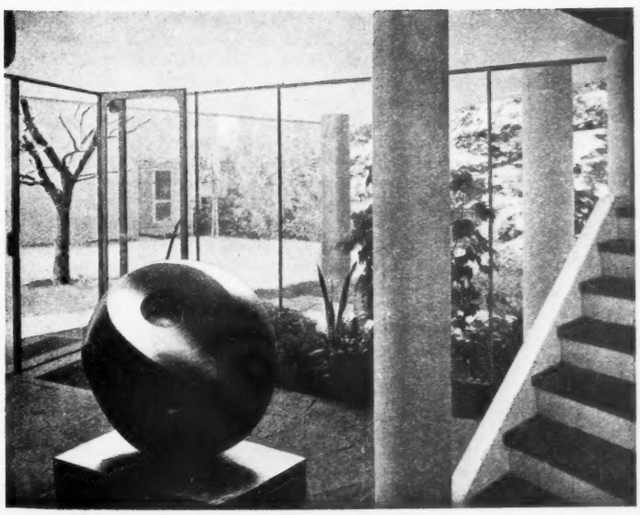


3

BOOKS

The Regency Scapegoat

HISTORY OF THE ROYAL PAVILION, BRIGHTON. By Henry D. Roberts. London: Country Life. Price 21s.

THANK goodness there are still plenty of buildings in England that are monuments of stupidity and immorality, or things of lasting beauty, whichever way you care to look at them. When they are praised, they are praised without reserve; when they are criticized, the critic uses a moral tone—that is, he regards them not as unsightly but as obscene; not as things that the local authority ought never to have allowed, but as matters for the censor. There is no widespread single opinion about them at any time, not even a so-called well-informed opinion. The wonder is that such buildings got put up at all. Such are Smedley's Hydropathic Establishment, Shrewsbury Railway Station, Fonthill Abbey, the Albert Memorial and the Royal Pavilion at Brighton. Before its destruction the Crystal Palace managed to gain an accord of intelligent praise, but morals hardly counted there, or they were all on the right side, because it was not only a pioneer building but an exhibition building. The others are chiefly exhibitionist.

In criticisms of the Brighton Pavilion moral indignation has blossomed and rioted like the domes and minarets themselves. They began as soon as the building was finished; indeed Farington saw it while the scaffolding was still up, and coldly remarked that it looked highly unsuited to its surroundings. Apart from the Rev. Sydney Smith's well-known comment about the Dome of St. Paul's "Having come to Brighton and pupped," there was much contemporary rudeness, some of it nearly as imaginative as the building itself. There was for instance "this pot-bellied palace—this minaret mushroom—this gilded dirt-pie—this congerie of gilded excrescences" as well as Hazlitt's remarks about "a collection of stone pumpkins and pepper boxes" and Cobbett's "parcel of cradle spits . . . sticking out of enormous squab decanters." Westmacott found it resembled "that soul-inspiring scene, the splendid banquet table, decorated in the best style of modern grandeur, and covered with the usual plate and glass enrichments: for instance, the central dome represents the water magnum, the towers right and left, with their pointed spires, champagne bottles, the square compartments on each side are exactly like the form of our fashionable *liqueur* stands, the clock tower resembles the centre ornament of a *plateau*, the various small spires so many enriched *candelabra*, the glass dome a superb dessert dish." As Mr. Roberts puts it, "ignorant people, and their name is legion, have scoffed and jeered at the Pavilion for over a century . . . The jibes produced the expected laugh from those who knew no better, but there *was* a method in what so many thought of as only madness."

But the method, such as it was, is hardly the way to excuse the building; for the method was extremely vague. Holland had enlarged the original villa on the site, and had turned it into a prepossessing Regency building. Then the Royal Stables (now the Dome) and the Riding House were built by Porden in the Hindu style, modelled on the Halle au Blé in Paris (of 1782). "Tired, possibly, of the classic in architecture, and being convinced, perhaps, that *chinoiserie* would eventually become unfashionable, the Prince of Wales commenced his excursion into Indian architecture when he commissioned Porden to build the Royal Stables." *Then* the Prince heard of Sezincote, and visited it, and commissioned Repton to deliver his opinion on what style of architecture would be most suitable for the Pavilion. Repton, finding the Dome already commanding the site, fixed on something Oriental. "The Turkish" (he wrote) "was objectionable as being a corruption of the Grecian; the Moorish, as a bad model of Gothic; the Egyptian as too cumbrous for the character of a villa, the Chinese as too light and trifling for the outside, however it might be applied to the interior." (For the Prince had been given some Chinese wallpapers, and had other *chinoiserie* already). Thus, it must be Hindu. Then later on (as Mr. John Steegman has pointed

1 a site is chosen for flat development

2 but one of the houses cannot be acquired

3 nevertheless, the flats must go up

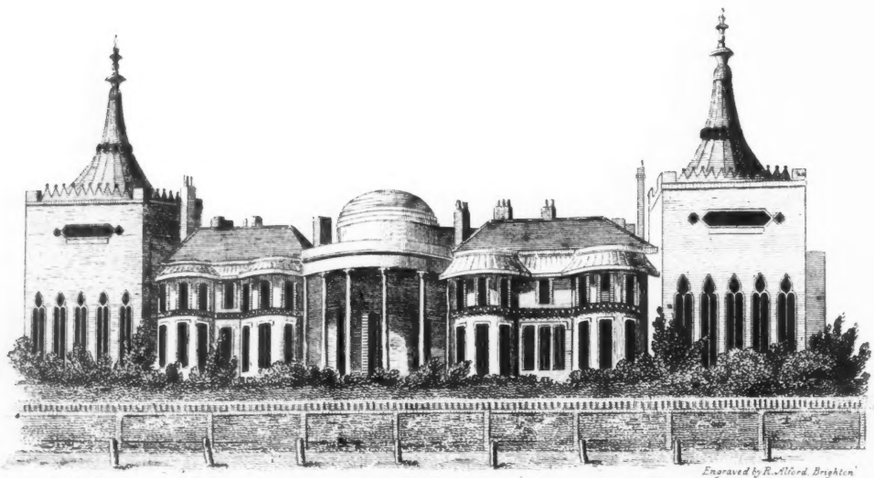
4

out) Repton defines Indian architecture as "including Hindustan, Gentoo, Chinese or Turkish; which latter is a mixture of the other three." And after a space—Nash built it. How vague was the method in such wonderful madness!

No: it is no use pretending that the Pavilion is the fine flower, etcetera, of sense and logical growth. And there is no need to pretend. It is a beautiful extravaganza, which, despite Farington, not only belongs admirably to its surroundings but enriches them, and which still, in spite of being turned into a museum has by a miracle not become a museum piece, because Brighton reflects it and it reflects Brighton. It is one of those excellent English creations, like departed Fonthill, that gives proportion to other English building; because it increases the range, making sensible building more sensible, and fancy and ebullience more admirably eccentric. Just now its extravaganza-value is a little demodé for fashionable esteem: it has become a trace immoral again; politically, especially. That is, though it may be approved as a subject for comment by the artist—preferably satiric—it is hardly due for praise by the critic. But its value is permanent, and not only to Brighton. Of recent years, it has become popular in its appeal again. Along with the relics and reincarnations of the whole Picturesque movement (of which it was a final eruption) it takes its place as a super-amusement-park ornament. It goes in the popular mind alongside the grotto entrances to pin-table parlours and the fairyland-park trips in Bing Crosby films.

Mr. Roberts loves the Pavilion. He defends it against every attack, and at the same moment exposes to view (often for the first time) every detail of the ground on which it can be attacked—the muddle of its architectural development, and the accounts of the tremendous expense of its building and furnishing. The accounts themselves make excellent reading, of the banquet-menu kind. For instance, the Music Room account: "Total, £45,125 15*s.* 10*d.*, including such items as 'The Archivolts and Windows, £1,593 18*s.* 8*d.*; The Rock Clock, £604 4*s.* 0*d.*; The Chimney Glass, £1,608 11*s.* 0*d.*; The Orleans Glass and Pedestals, £1,836 6*s.* 6*d.*; Holland Covers, £101 15*s.* 0*d.*'" The book, as connected reading, is a little dull: but that is as it should be in a detached record, which makes a good work of reference. (Mr. Roberts has been connected with the Pavilion intimately enough and long enough to look at it with a good deal of detachment). It is well produced and printed. It is full of information, and evidently accurate. It has short chapters, large pages and a good index. One of its great virtues is that it collects together between two covers good reproductions of views from Repton's *Designs* and Nash's *Illustrations* (18 out of 31 from the latter; which was produced under the direction of Augustus Pugin—most of the plates he engraved himself). It also has excellent photographs of furniture, much of it now in Buckingham Palace, which once adorned the Pavilion. From a careful study of the book one can reconstruct the heyday appearance of the apartments pretty well.

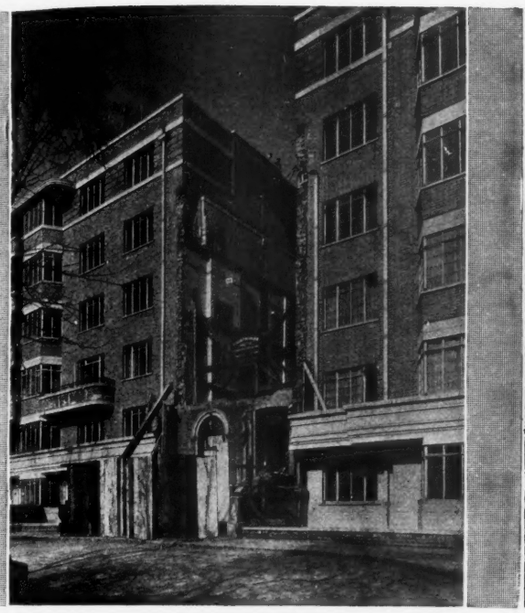
The recent history of the building forms a long tailpiece. The story of its use as a hospital for wounded Indian troops during the Great War is in the right tradition. That it was more suitable than anywhere else for their reception seems doubtful, and the Daniell-Cockerell-Repton-Nash variation on Indian themes may have had a curious effect on some of the Indian wounded. However, as it was "Indian" it was suitable for Indians, and the



View of the Pavilion taken from Wright's Circulating Library May 1818.

"The two 'new rooms' were finished by now, but they cannot be said to have added dignity to the eastern frontage . . . . Holland's charming original Pavilion is . . . . being pressed in by two oblong 'boxes,' with spines." From "The History of the Royal Pavilion, Brighton," a review of which begins on the previous page.

NCE IN FIVE ACTS



4 with the result that the house eventually comes down

5 and the gap can be filled to complete the block of flats

These photographs show the transformation that has recently taken place in a terrace of Victorian houses on the north side of Regent's Park. The change from houses to flats is one that occurs frequently in this and other parts of London, but the stages in which the change was in this instance performed present an unusually clear illustration of the difficulties that piecemeal development leads to : a *reductio ad absurdum* of the principle of individual rights. The original terrace, extreme left, was acquired for flat development. But the owner of one house refused to sell (or stood out for an exorbitant price). This one house was therefore left standing while flats were built all round it. The value of the house, of course, declined ; also for some reason the flats adjoining the house were slower in letting. Agreement was eventually reached, the house demolished, and the gap where it had been was neatly filled in to match the other flats. These photographs were taken at intervals of approximately six months, up to the beginning of this year.

Maharajah of Patiala later said that " from many of those who had returned to Patiala he had heard expressions of fervent gratitude for the attention and care lavished on them by 'Dr. Brighton,' whose fame and skill as a healer and health restorer were talked of in many hundreds of remote Indian villages." And the Princes and people of India presented the new gateway to the grounds from the south in gratitude. The gateway is rather too slavishly Indian; and Repton would certainly have thought it, along with the Egyptian style, " too cumbrous for the character of a villa." According to the illustration, how much more pleasant was the entrance, with its flanking domed archways in proportion, before the new gateway was built.

Whatever may be its functions in the future, the museum character of the building should not be encouraged to develop too finally. At the moment it is delightful, but it should continue if possible to serve some Civic function, quite apart from that important civic-conscious quality of exhibiting in one range of buildings the whole spirit of a town of strong character. Nobody should ever say, or think, " Long Live Brighton " without adding " Long Live the Pavilion."

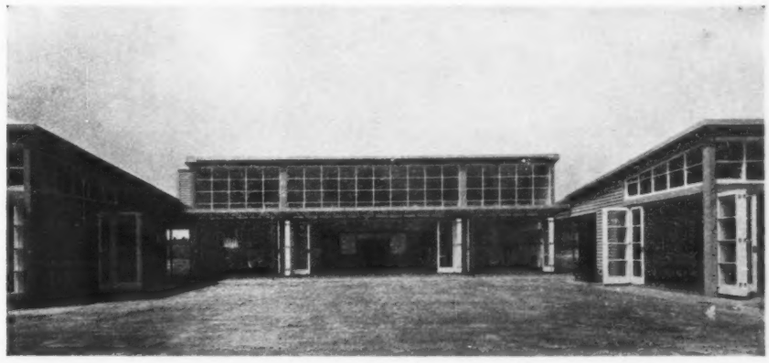
JOHN PIPER

The School of the Future

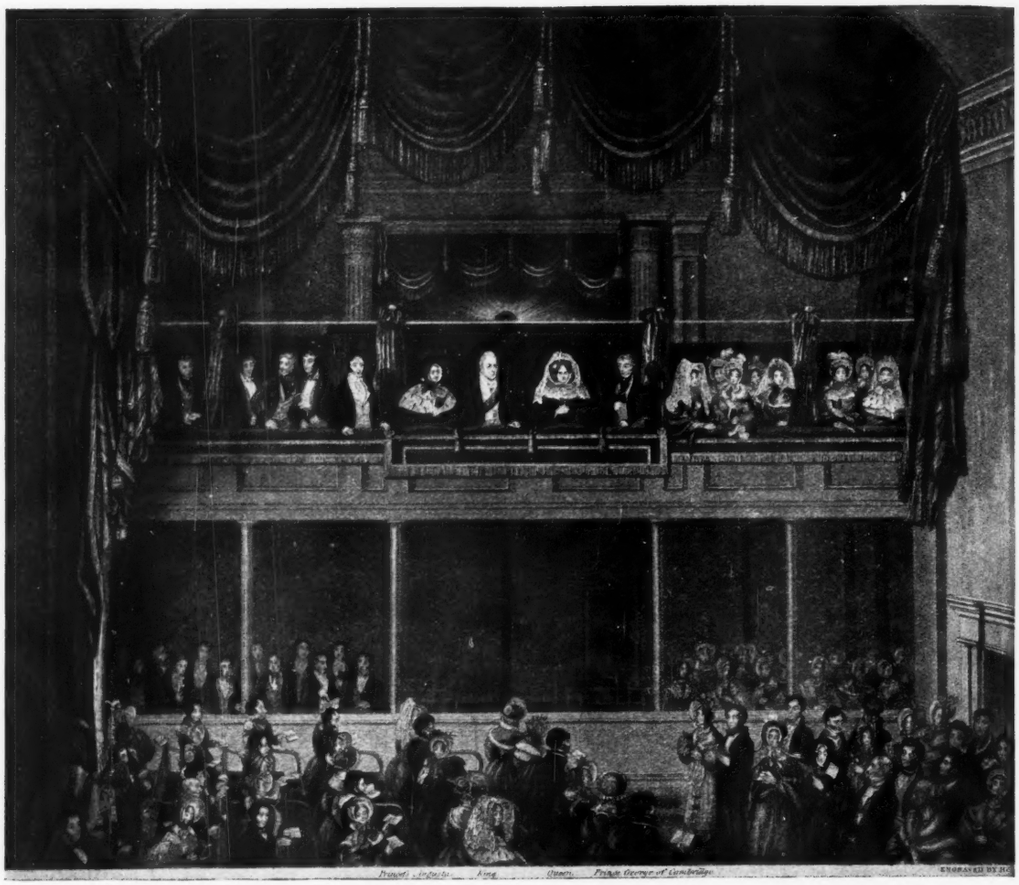
THE DESIGN OF NURSERY AND ELEMENTARY SCHOOLS. By Myles Wright and Gardner-Medwin. London: The Architectural Press. Price 10s. 6d.

THE State educational system of this country is undergoing a slow process of reorganization. After the Great War during which its limitations had been revealed, the authorities set about examining the system to discover why it produced subnormal mentalities, and more important from the " man power " point of view, a low standard of physique. The official policy of educational authorities is based on the Hadow Report of 1926, but although at the time its findings were considered almost revolutionary there is today a body of opinion that goes considerably further. It is now generally accepted that it is bad for the child to be riveted to a desk and stuffed with knowledge; that the body as well as the brain should be taught how to be used, physical health being complementary to mental; and that the adolescent should be encouraged to take an interest and even question adult activities. In consequence a new building programme is taking place to provide proper shelter, equipment and surroundings for this new policy. Messrs. Myles Wright and Gardner-Medwin have written a book on the recent achievement of school building, and its future possibilities. The book is divided into three parts to correspond with the three stages through which a child passes. The first section on Nursery-Infant schools is from the sociological point of view the most interesting as it shows what is perhaps the biggest flaw in the educational system. A child is not compelled to attend school until it is five when from that age until seven it is put into the infant section, where it is made ready for the comparatively formal education of the junior school. Thus there is a long period during which its natural tendencies for self expression and enquiry are left in the care of the mother who has neither the opportunities, means, or training to develop them. A brave attempt is being made to fill the gap by the nursery school movement, but as out of the five thousand schools required some seventy only have been built the seriousness of the position can well be judged. An appeal was made in November last for funds for a new building for the Gipsy Hill Training College where teachers are trained for the movement. Although it had influential support the response was such that it can be taken for granted that private enterprise will not provide the many new schools required, and that the problem can only be solved by state assistance.

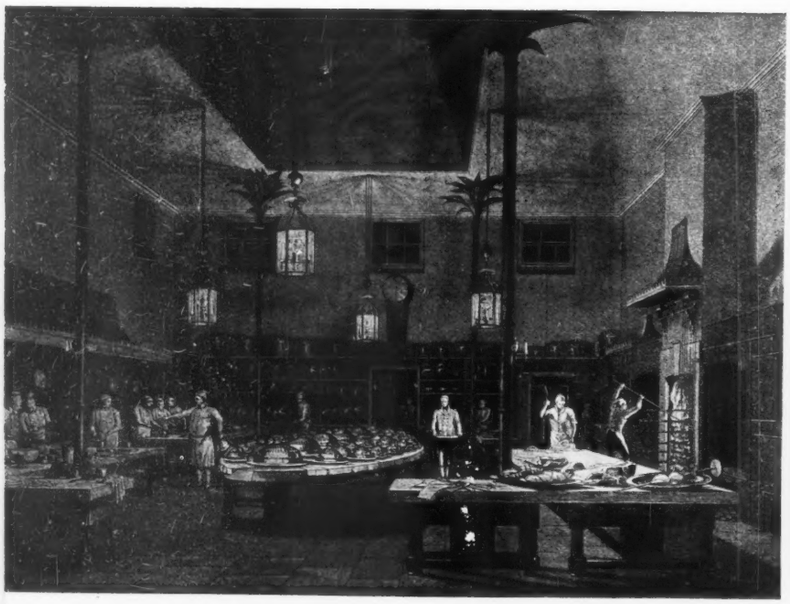
The second part of the book deals with the junior school and the third part with the senior school. In each section there is a very thorough examination of the problem and sound advice on its solution. Commencing with subsections on the child, co-education, and training the authors go on to examine siting, and such architectural problems as the circulation, assembly halls, classrooms, lavatories, and so on. The technical data is conspicuous for its clarity, and even though such examples of fashionable architectural jargon as " three dimensional planning " occasionally creep in, it can easily be understood by the layman;

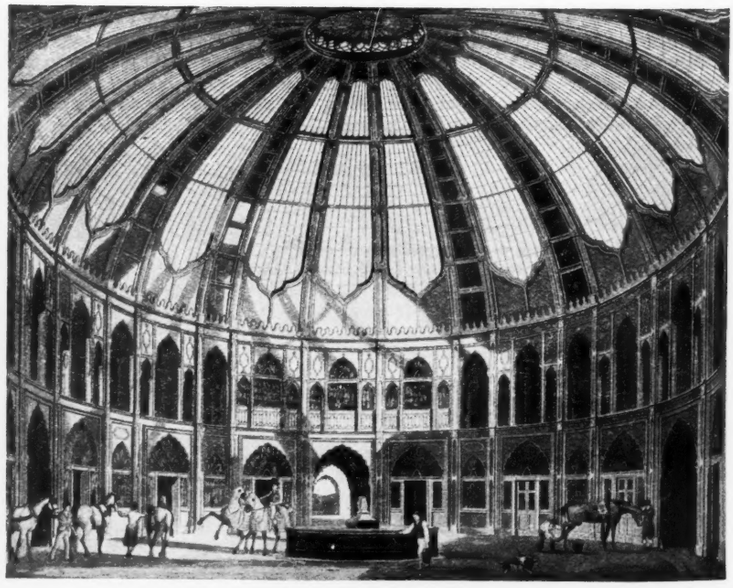


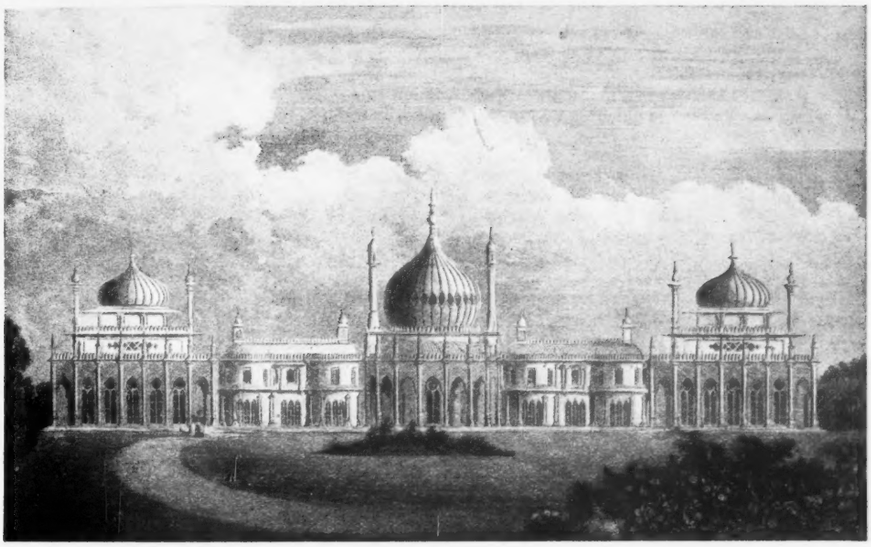
A Lancashire school for defectives, Hubert Bennet, architect, from " The Design of Nursery and Elementary Schools," reviewed on this page.



Interior of the Royal Chapel, about 1830, *an illustration from "History of the Royal Pavilion, Brighton," a review of which begins on page* 201. *Below are shown, on the left, the kitchen, and on the right, the Royal stables (the Dome), reproduced in the same book from Nash's* Illustrations. *Of the* Illustrations, *from which the "History" draws a number of its reproductions, Mr. Roberts quotes from Benjamin Ferrey that when Nash was about to produce them he "requested Pugin to take sketches and superintend the engravings; and eventually a beautiful work was produced at great cost . . . proof impressions of which were revised by the King's own hands."*

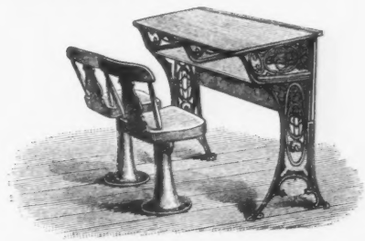






"The Marine Pavilion," says a contemporary, "on the west side of the Stein is a striking Object, and is admirably calculated for the Summer Residence of the Royal Personage for whom it was built. This Pavilion, correctly designed and elegantly executed, was begun and completed in five Months." Top, the east front as designed by Holland; below, Nash's first design for the reconstructed Brighton Pavilion. An intermediate stage is shown in the engraving reproduced on page 202. *Nash's building, as John Piper observes below, was the subject of much contemporary rudeness, some of it nearly as imaginative as the building itself. There was for instance "this pot-bellied palace—this minaret mushroom—this gilded dirt-pie" as well as Hazlitt's remarks about "a collection of stone pumpkins and pepper boxes." Both illustrations are from "The History of the Royal Pavilion, Brighton."*

The old and the new in school equipment; an American fixed two-seater desk, 1865, *and science benches in a Cambridgeshire village college, S. E. Irwin, architect, from "The Design of Nursery and Elementary Schools," a review of which begins on page* 203.



particularly as most of it is brought home by clear diagrams and well-chosen illustrations.

The buildings illustrating the book reflect the change in attitude towards the problem of the school. Symmetry and monumentality have been abandoned for lighter and freer compositions conspicuous for the subtle formal relationship of their parts. Not of course that the book represents the true average standard of design. The authors have exercised their æsthetic sensibility and excluded the Georgian, modernistic, and the just illiterate designs which together represent the main body of the school architecture of the country.

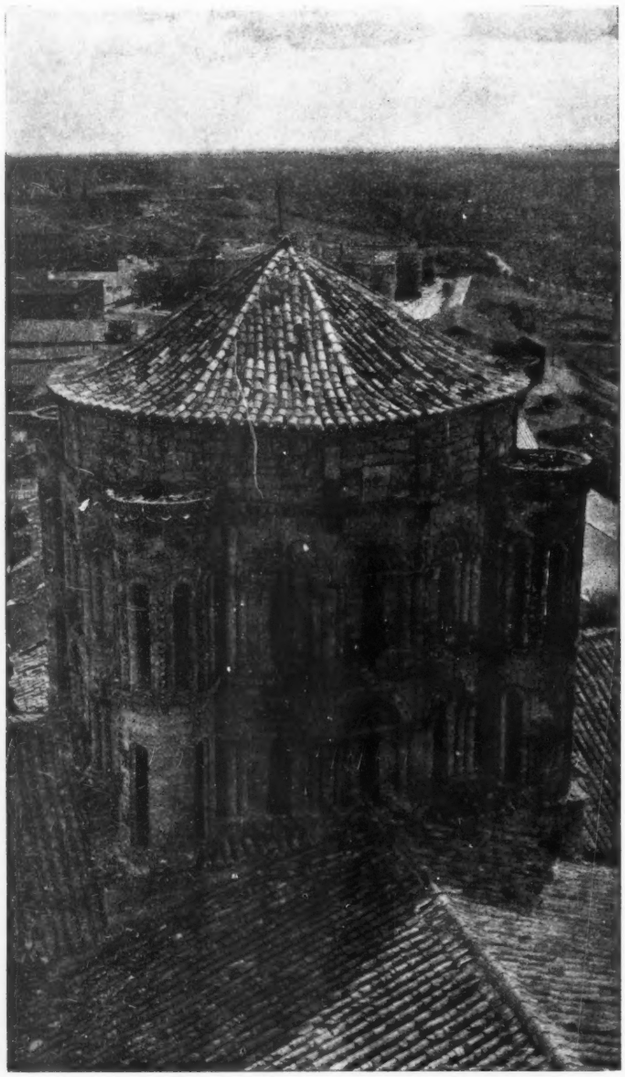
It is to be hoped that the book will get into the hands of the die-hards whose attitude to the problem results in the low standard of design, and can best be illustrated by the following true story. A lady in charge of the nursery-infant section of a large school was told that she was being provided with a new building in accordance with the Hadow Report; and was asked for her opinion on the sketch plans. As, with the exception of a yard overshadowed by the building, no play area was provided, she asked for a roof garden where she could get the children into the sun; the roof to be approached by a circular staircase so that the children could not fall down it. She got neither, because the committee were of the opinion that a pitched roof would look better, and a circular staircase was impracticable.

FREDERICK GIBBERD

Spanish Architecture

HISTORY OF SPANISH ARCHITECTURE. By Bernard Bevan. London: Batsford. Price 21s. net.

It is a pity that this book should have been brought out just now, when one's thoughts are inevitably distracted by the question "How much of this will remain?" The author is uncertain of the fate of some of the buildings he describes and it is unsatisfactory, at the very least, in a book that can reasonably be expected to become a standard work in a very thin field, to have to say that you do not really know whether a church exists, but believe it has been blown up. Publishers are liable to take advantage of the momentary news value of the



subject of a book and rush it out, yet it is not unreasonable to say that in a very few months the extent of any irretrievable damage will be known, and could be recorded, and the uncertainties removed from a book that is going to outlive by a long time the effects on architecture of the present civil war.

In point of fact it looks as though one's worst early fears were unjustified and that any damage that has been done is on a much smaller scale than might have been expected. Both sides, indeed, seem to have started restoring already, and certain buildings, such as San Marcos at León, are in better condition now than they have been for some time.

There is probably no other country in the world that gives such wide scope for a work of this kind; the range and intricacy of the subject is enormous and it is surprising to find that Mr. Bevan has managed to compress it into less than 200 pages. It would, as a matter of fact, have been all the better if it had been expanded slightly. For instance the author hardly touches on the large and very living subject of provincial architecture; and the chapters on the seventeenth to the early nineteenth centuries are all too short.

Mr. Bevan is at his best in the early part of the book; his building up of the historical background is very sure and the archaic and medieval chapters are full of interest as well as being reasoned and scholarly. He is helped in this by the comparative rareness of earlier buildings and by the unusual degree to which they have evaded the hands of breakers and restorers. Perhaps the most fascinating chapter of all is the one on castles, and anyone whose escape mechanism is working overtime just now will revel in the towers and battlements and curtain walls of Olite, Torrelobatón or the Mendoza castle of Manzanares el Real, and in the description of the palace of Charles the Noble, with its hanging gardens and menageries. One cannot help feeling what a pity it is that T. E. Lawrence never went to Spain as a boy, but perhaps the mass of materials for his hobby would have driven him off his head.

That the Gothic chapters are less interesting is entirely due to the fact that Spanish Gothic is at best an awkward interloper, useful but never beautiful, like the German hotel keepers that one found all over Spain before the war. But Mr. Bevan must be held responsible for the shortcomings of the later chapters, for in only 23 pages he skirts round a period of 250 years (from 1550 onwards), which on a purely numerical basis alone must be far the most important in the history of the country, even if it is arguable that earlier styles had greater influence. There is perhaps the slight justification that these years are generally dealt with more fully by other writers, but it is a justification that has little weight when considering a book that deals with Spanish architecture as a whole. And one has become tired of the " broadminded " approach to Baroque; surely we have developed sufficiently to realize that it no longer needs circumlocutory explanations before being mentioned? Quite apart from any other consideration one would have imagined it justifies its existence æsthetically, and that in a country of strong light and deep shadows the principle of rich decoration applied to small sections of an otherwise simple façade is a sound one. Baroque lives as few other styles live and even today in Mexico, Cuba and Peru it is still dragging out the pale shadow of its existence.

SELWYN POWELL

". . . it is unsatisfactory, at the very least (in a book that can reasonably be expected to become a standard work), to have to say that you do not really know whether a church exists, but believe it has been blown up." Top, the Infantado Palace at Guadalajara, destroyed by bombs in 1936; the façade dated from 1480. Below, the central tower of the collegiate church at Toro. Both illustrations are from the " History of Spanish Architecture," a review of which begins on the previous page.

This is the third of a series of supplements each dealing with a different material. The supplements are planned as a continuation of the special issues on materials that have been periodically published by THE ARCHITECTURAL REVIEW during recent years.

PLASTER

Although on the following pages it is the technical use of plaster in architecture that is chiefly discussed, one important use that must not be forgotten is as a temporary substitute for more solid materials. In this capacity it is extensively used for film sets. These photographs show a staircase set in a film studio, and a period garden set. Both were carried out predominantly in fibrous plaster.

PLASTER technique

A REVIEW BY E. H. ELLIS

This Supplement deals only with plaster used internally. The use of stuccos and plaster renderings on the exteriors of buildings is considered to be a separate subject and will be dealt with on another occasion. Greatest attention is paid to the proper materials and technique of application for the use of plaster in its commonest form, as a finishing surface to walls and ceilings, and to special developments of ordinary plaster — for sound absorption and heat resistance, for example. The decorative uses of plaster — textured finishes, sgraffito work and fibrous plaster — are however touched upon on the last page.

Above, plaster testing by two methods: top, particle size grading to ensure cohesive plasticity; bottom, setting time. At the head of the page, two plasterers are testing a finished wall-surface for undulations.

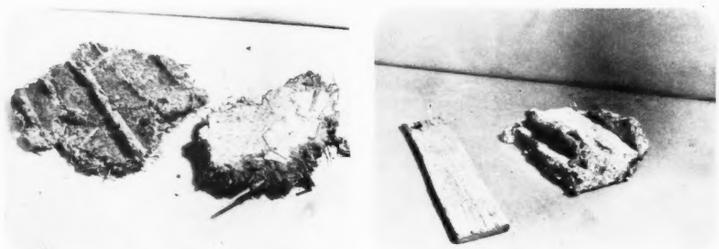
TESTING

There is a general impression in the architectural world that plaster is a material certain to cause trouble, and unfortunately this pessimism is seldom unfounded. It might reasonably be imagined that after two thousand years of experiment it would be easy to produce a plain and durable wall surface, reflecting light evenly and revealing no undulations when the hand is passed over it. Modern decorative technique has intensified the demand for such requirements, since flood-lighting and high-gloss paints magnify any deficiency in the undersurface. It becomes, nevertheless, often a matter of great difficulty to obtain the perfect finish: cracking and crazing are two of the many faults that may appear. It may be said that all plaster materials are only half-made at the factory; the process is completed, and often ruined, on the job. To obtain a perfect job of plastering it is necessary to secure the proper co-operation of three persons: the architect, the manufacturer and the plasterer. Failure on the part of any one of them inevitably leads to unsatisfactory results.

When trouble does occur—whatever its nature—the plaster itself is commonly blamed, although, in fact, modern scientific research has so perfected manufacturing methods that the materials themselves, rightly used, need cause none of the faults with which they are generally associated.

The blame must be shared by the craftsmen, but must largely be taken by the architect, whose laissez-faire attitude is often responsible. Modern scientific research has invaded the plastering trade very extensively, and the better type of plasterer today realizes how much his traditional craft can be improved by scientific technique. Inherently conservative, however, he guards jealously his scraps of knowledge and does not readily co-operate with the architect, who, for his part, seems to have made no real attempt to acquire a knowledge of plastering technique. The result is too frequently that the client must pay heavily for avoidable plaster troubles.

The proper method of using the modern raw materials of plastering is therefore the subject chiefly dealt with on the following pages.



Left, fragments of clay-and-straw plaster from Staple Inn, London; right, piece of riven oak lath and fragment of lime-and-hair plaster from an Elizabethan manor house. Unlike modern equivalents, these early plasters derived their strength from plentiful hair or straw admixture.

MATERIALS

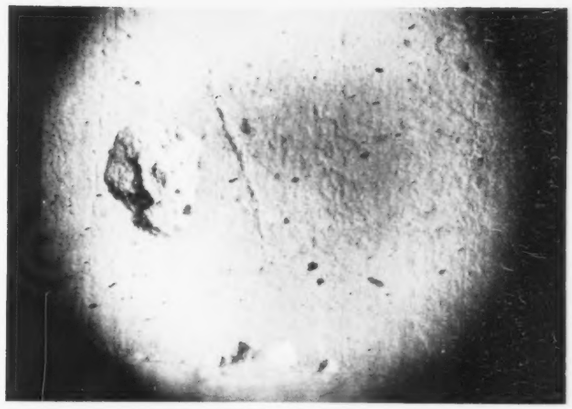
The materials available today and in common use in this country for plastering, are: lime, Portland cement, gypsum and sand, which latter is, of course, used in conjunction with the first three materials. Mixtures involving more than one of the first three are also used in some circumstances, as for instance: lime, Portland cement and sand, which gives improved results from the mix; gypsum and lime, where, however, the mixture loses the virtues of gypsum while retaining the disadvantages of lime. It may be taken as axiomatic that gypsum should not be mixed with Portland cement which, despite recent special Canadian research has a chemical composition incompatible with gypsum, and makes disintegration inevitable. The necessity of a good sharp sand, free from clay, loam, peat or other organic matter cannot be too strongly stressed. (The illustration accompanying this note shows, on the left, a poor sand shaken in water—clay particles giving a cloudy effect, and, on the right, a suitable sand, the clear water demonstrating its freedom from clay and organic impurities.)

The use of coloured plaster for internal work has not been very widely adopted in this country, despite the thoroughness with which American technique has explored its possibilities, largely because of the difficulties liable to be encountered. With a brick backing, unless a thick base coat has been applied, uneven suction will produce an unsightly patchy effect—which can also arise through careless trowelling. On the whole it may be taken that more efficient and æsthetically better results may be obtained with ordinary white plaster and a paint finish, than by the use of coloured plaster.

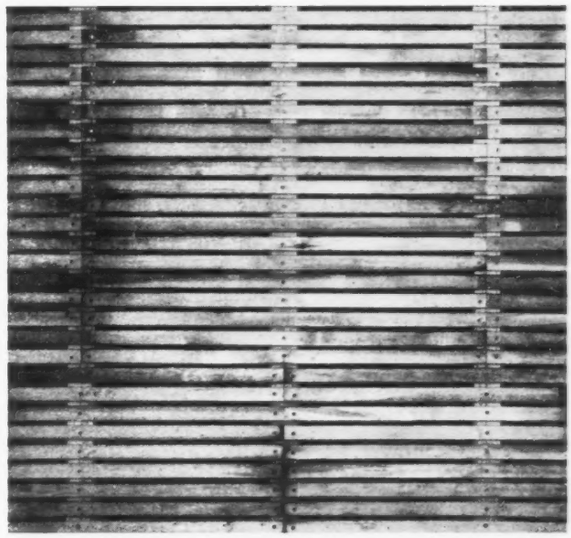
LIME PLASTER

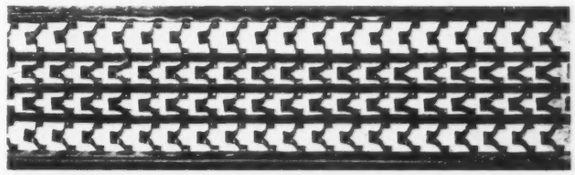
Some of the finest historical specimens of plasterwork extant are of lime plaster; massive mouldings of lime and hair, of a *gesso* with a lime base, sometimes undercut, make the ceilings of many country houses the object of admiration. For contemporary work lime plaster is not suitable owing to the necessity for quick work, and the development of unkeyed backings. The modern use of factory-made hydrated lime is a welcome attempt to bring lime plastering within the range of factory-made consistent materials, and has largely supplanted the old methods of mixing on the job. The whole process was messy and unless great care was taken "cores" might find their way into a wall, to expand after the lapse of time, causing pits on the surface.

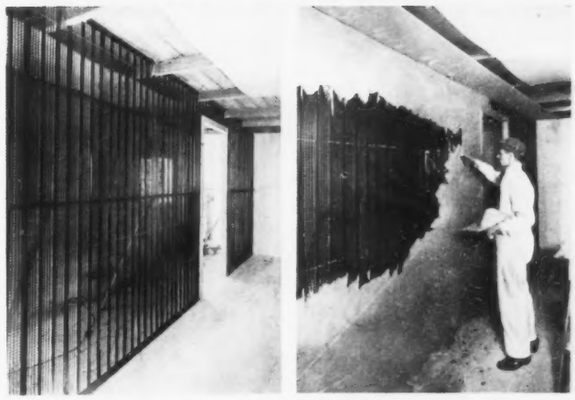
To give lime plaster an initial strength to stand vibration, and even to bear its own weight on a ceiling, horse or goat hair must be mixed with it. Beating, mixing and working-in the hair adds to labour cost and the complexity of lime plastering. Often the addition of hair is indifferently performed. The length of the hairs may be insufficient to achieve any useful purpose, while the labourer, finding that all the hair in a putty bin has accumulated in one place has been known to rake it out and throw it away. Hair is of great importance in lime plaster, and an examination of old ceilings that have been removed will show them often to consist of masses of hair tied together by the lime. Modern building demands a rapid-strengthening material giving a reasonable safety factor. Lime merely clings to whatever backing is used, and does not bond by any physical or chemical means. It is suitable therefore only for keyed work, as on wood lath or metal lath, and should not be used for covering plaster-board, fibre-board or cork-board, nor should it be mixed with gypsum plaster for such purposes.



Photomicrograph of a "blow" in lime plaster, showing the core at the base of the crater; a defect liable to occur when lump lime is "run" on the job—unless the lime putty is carefully sieved.

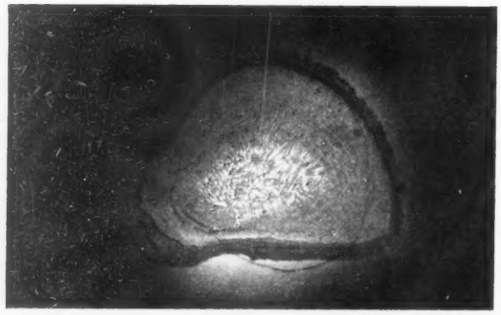


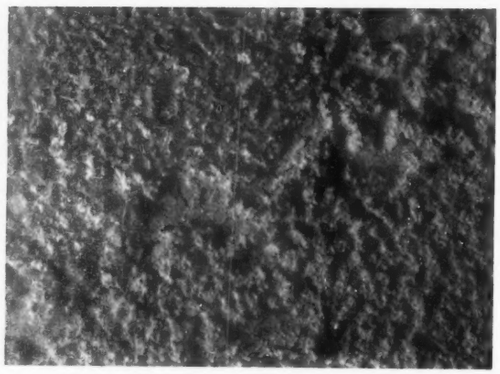




Above, recommended backings: wood lath, securely fixed at lath-ends; centre, metal lath after use, with gypsum cement wiped off, showing absence of corrosion; at bottom, metal lath partition in situ—this backing being entirely non-absorbent a special gypsum cement is used to promote drying-out.

BACKINGS





Top, the water-absorption power of brick; centre, photomicrograph of salts from brick backing, and, bottom, their effect on a painted plaster surface.

BACKINGS

PORTLAND CEMENT PLASTER

The modern growth of the Portland cement industry and the legitimate use of Portland cement in so many aspects of building have led to its use when mixed with sand as a base-coat for internal wall plastering. This cannot however be regarded as satisfactory practice. Portland cement undergoes a considerable shrinkage on setting, and even after the initial setting has taken place there is likely to be considerable dimensional change for a period of some three months. The high strength of Portland cement is of course an attraction for its use, particularly to an unscrupulous contractor who, bearing in mind the low cost of sand, finds in Portland cement's high sand-carrying capacity an additional incentive. High strength in itself is relatively unimportant in plastering, which is essentially a decorative treatment.

It has been a matter of experience that other things being equal walls with the thin backing coats that only Portland cement and sand can give are more liable to efflorescence than those with thick plaster coats. In general, Portland cement as an internal plastering material suffers from similar defects to lime. It possesses a good suction bond to brick but is not suitable for application to plaster or fibre-board; nor is it suitable for use on wood lath since it does not attain a sufficiently early strength, while on metal lath it has been shown to be specially associated with cracking.

The illustration to the right shows suction being measured on a wall with a thin Portland cement plaster base-coat, suction on such a coat being variable and likely to cause difficulties for the decorator.

GYPSUM PLASTER

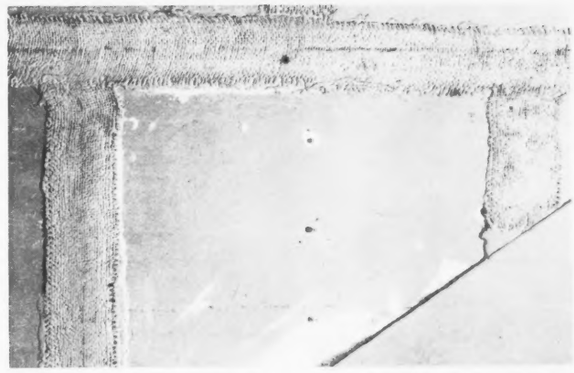
Gypsum is a material that has developed from the old-fashioned and well-known plaster of Paris, the special qualities of which have been used as its basis. Modern scientific research has brought this material to a high degree of efficiency. Its chief merits are a carefully regulated setting time, high plasticity combined with free working, early strength, and freedom from movement either on setting or subsequently.

There are two distinct materials made from gypsum: cements and plasters. The cements are specially for mixing with sand for base-coats and suitable for application to backings of all kinds. The plasters are specially suitable for finishing. Gypsum is chemically inert, and should not, as is common practice, be mixed with lime, since this destroys many of its special qualities. For example, its physical qualities are such that it adheres strongly to plaster-board and fibre-board, whereas the adhesion bond is adversely affecting when only small quantities of lime are added. Should the amount be increased up to 15 per cent. by weight, the bond is entirely destroyed.

On setting gypsum cements and plaster combine chemically with 20 per cent. of the water with which they are mixed; compared with lime plaster or Portland cement it has, therefore, less water to evaporate on setting. Most manufacturers control setting

Left, photomicrograph of characteristic truncated crystals of gypsum plaster; and wall surface in gypsum plaster where finish coat was applied when base-coat had dried too thoroughly—adhesion of crystals in the two coats does not take place. Right, lime added to gypsum cement completely destroys the bond to plaster-board: the pats have respectively 0 per cent., 5 per cent., 10 per cent. and 15 per cent. of lime added to gypsum. Proportionate failure of adhesion to plaster-board is shown.

time to accord with the normal organization of the plasterer's day, which means that sanded base-coats can be followed with finishing coats within a matter of three to four hours. Finish coats set uniformly hard and homogeneous, and can take any form of decoration since there is, with adequate base-coats, an even suction over the whole surface.



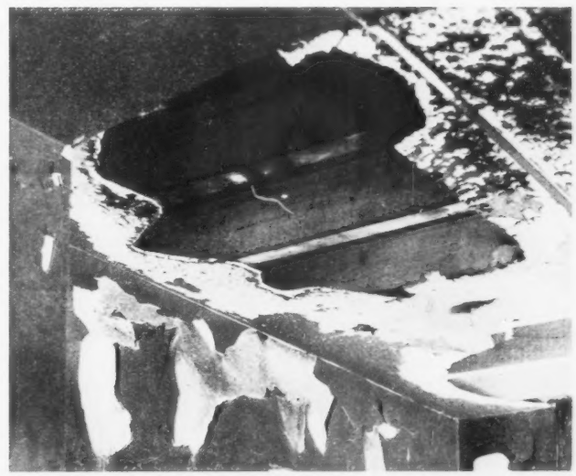
A general though not to be recommended plaster-board practice in which joints to the boards are scrimmed and covered with a skim coat; the objection being liability to crack under slight movement.

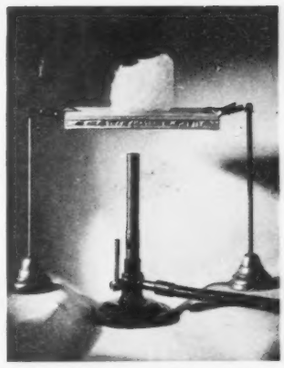
PLASTER-BOARD

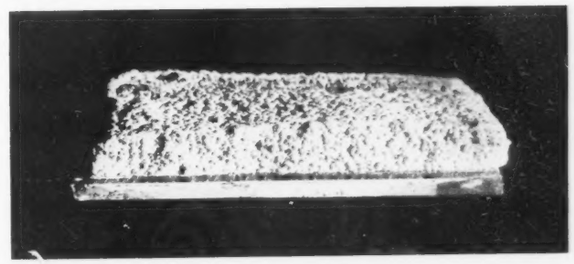
The fire-resisting qualities of plaster-board are well known, since it is such qualities that lend themselves to dramatic advertising. The thermal resistance of the material compared with asbestos sheeting is demonstrated in the accompanying photograph of which (A) is asbestos sheeting, (B) asbestos tile and (C) plaster-board. The strip of wood at the back is shown unscorched where it was protected by plaster-board when subject to fire.

The general qualities of plaster-board are sufficiently well known to need no further enumeration but two may well be borne in mind: first, that plaster-board lath provides a flat surface on which two-coat plastering rather than three can be used; second, since it does not suffer from the moisture movement associated with wood lath, liability to crack, broken keys and falling ceilings being thereby eliminated. Actually, the safety factor—i.e., adhesion in lbs. per sq. inch divided by the weight of the plaster, has been found to be 50 for wood lath, compared with 144 for plaster-board lath.

Plaster-board is an example of the modern trend to develop dry technique. It is generally admitted that the large amount of water used in building is responsible for many of the difficulties and troubles of new work. Any increased use of dry technique is consequently a step towards their elimination.







Above, wood joists shown completely protected from fire by plaster-board. Centre, heat resisting qualities of plaster-board: left, ice cube on wood heated for the same period as ice cube on plaster-board, right.
Bottom, most forms of sound-absorbing plaster are of an open, granular texture, and may include pumice in their composition.

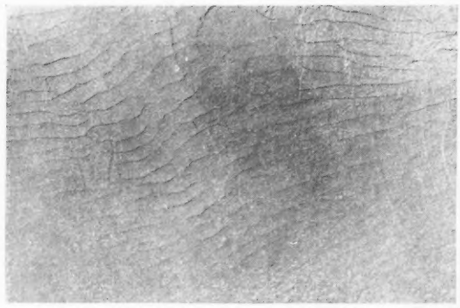
SOUND ABSORBING, HEAT RESISTING PLASTER

Today special demands are often made for which manufacturers supply special plasters, of which perhaps the chief are plasters for sound absorption, and for thermal insulation. It is widely believed that ordinary plasters, with a finish of either lime or gypsum, may be used for this work. In this connection some tests made at the American Bureau of Standards are of interest. They show that these materials have no significant difference in acoustic merit. A panel of lime plaster and a panel of gypsum plaster showed the following absorption coefficients:

	Frequency in cycles per second			
	297	1094	2190	2890
Lime	·012	·012	·006	—
Gypsum	·015	·002	·005	·003

Similarly, smooth trowelling or sand float finishing produces no real difference.

Thermal insulation provides another problem very much to the fore at the present time. A good deal is heard of the sweating of plaster walls in squash courts, bathrooms and refrigerator rooms. The problem here is not to provide a plaster with a blotting-paper surface in the hope that condensation may be absorbed, but to prevent it by using one of the many insulating materials available as a backing. In some cases, however, it may be found that special plasters for this purpose are justified.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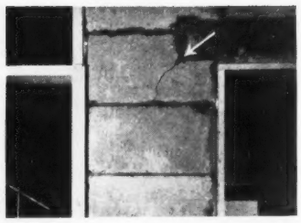
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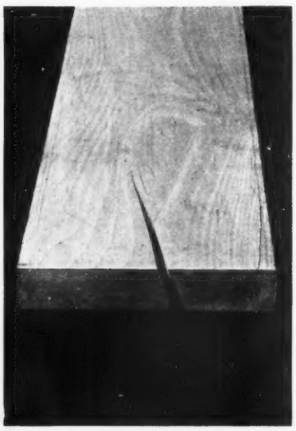
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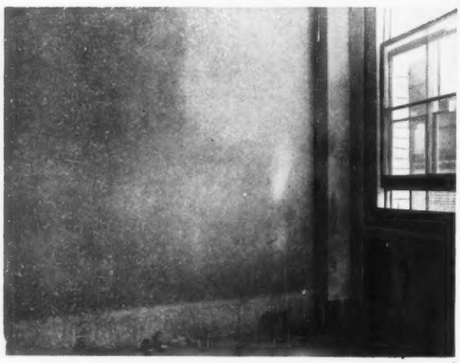
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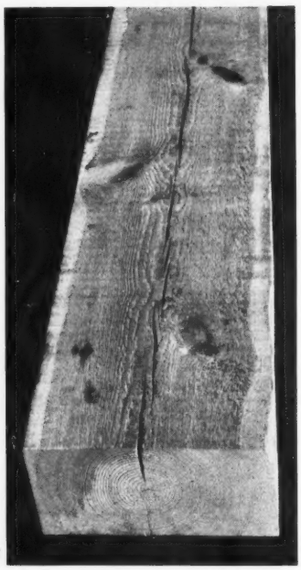
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Fine crazing 1, *is often due to a very thin skim coat which was mixed too slack and dried too fast.* "*Pattern*" *staining,* 2, *is not a defect in the plaster, but is due to a lack of proper insulation. The use of a backing of adequate insulating material with three-coat plasterwork will prevent this.* "*Dry-outs,*" 3, *are probably one of the commonest causes of plaster failure. A soft and crumbling surface is the result of draughts, or heat-drying a plaster too quickly.* "*Blows*" *often occur in a lime-plastered wall dried too fast.* 4, *plastering over ceiling panel heating must be treated with care. If heat is applied too rapidly a* "*dry-out*" *may occur and incomplete hydration may cause failure of adhesion.* 5, *Drying shrinkage of partition blocks may cause cracking of a plaster surface, as may the contact of materials with different coefficients of thermal expansion.* 6 *and* 7, *wooden joists may split due to rapid drying and unequal shrinkage.* 8, *Settlement or the use of insufficiently heavy joists are a prolific cause of cracks in ceilings.*

COMMON FAULTS IN PLASTERWORK

APPLICATION

It is important that coats should be applied in swift succession so that underlying coats do not become too dry.

Three-coat work is desirable on wood lath, metal lath, or brickwork. Bricks should be thoroughly soaked with water before applying plaster, which applies also to wood laths. Plaster-board and fibre-board, on the other hand should not be wetted.

Wood lath should be well seasoned and properly fixed.

The joints should be butted and staggered at three feet intervals. If expanded-metal lathing is used joints should all be over-lapped. Plaster-board should be applied so as to break the joints.

All these materials with the exception of plaster-board should be covered with a pricking-up coat, well scratched, a floating coat, "devilled" with a "devil float," and a finishing coat, hard trowelled.

It is important that the scratching should be deep and at an angle, so that an adequate key for the following coat is obtained.

It is worth while mentioning that gypsum cements do not corrode metal lathing as is sometimes believed, though a small amount of initial rusting will occur with some kinds of Keene's cements while the plaster is wet. With modern expanded metal lathing of adequate gauge and properly protected there need be no fear of trouble.

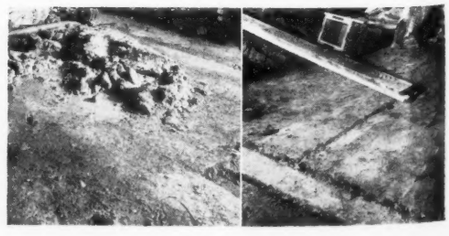
Reasonable mixtures of gypsum cement and sand for different purposes should be in the following proportions:

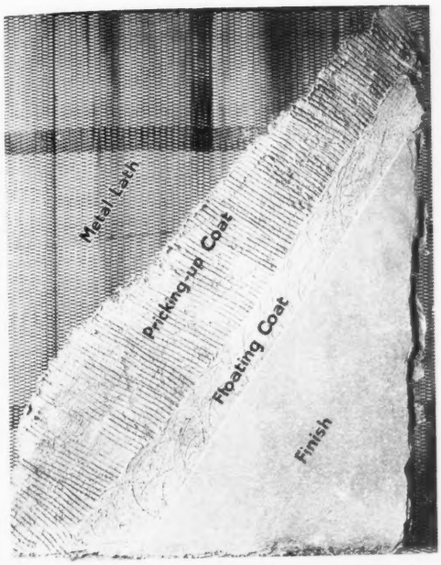
TWO-COAT WORK (i.e. one base-coat and a finish coat): Wood lath = Gypsum cement one part, dry standard sand two parts by weight. Metal lath = Three coats should be applied. Plaster-board and fibre-board = Gypsum cement one part, sand one-and-a-half parts by weight. Brick, concrete, partition blocks = Two parts gypsum cement, to five parts of sand.

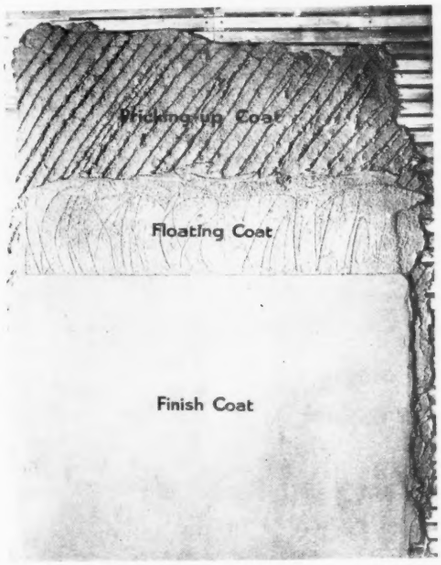
THREE-COAT WORK, i.e. two base-coats consisting of a rendering or scratch coat and a floating or browning coat together with a "finish" or "setting" coat. (g.c. = gypsum cement.)

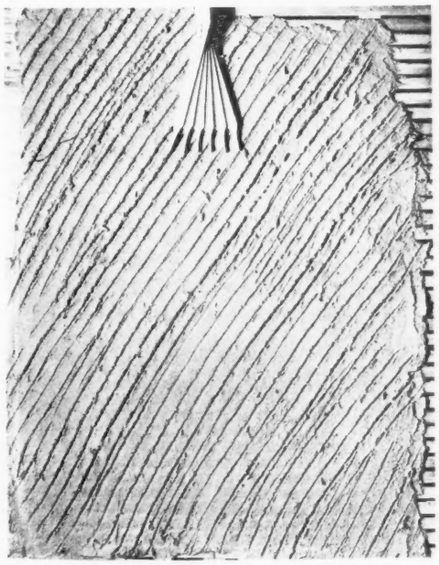
	1st base coat.	2nd base coat.	Finish coat.
Wood lath ... ... =	g.c. 1 sand 2	g.c. 2 sand 5	Neat
Metal lath ... ... =	g.c. 1 sand 2	g.c. 2 sand 5	Neat
Plaster-board ... ... =	g.c. 2 sand 3	g.c. 1 sand 2	Neat
Fibre-board ... ... =	g.c. 2 sand 3	g.c. 1 sand 2	Neat
Bricks, partition blocks and concrete ... ... =	g.c. 2 sand 5	g.c. 2 sand 5	Neat

Thickness of each coat should not exceed $\frac{1}{4}$ in. except on brick where it may be brought up to $\frac{3}{8}$ in.

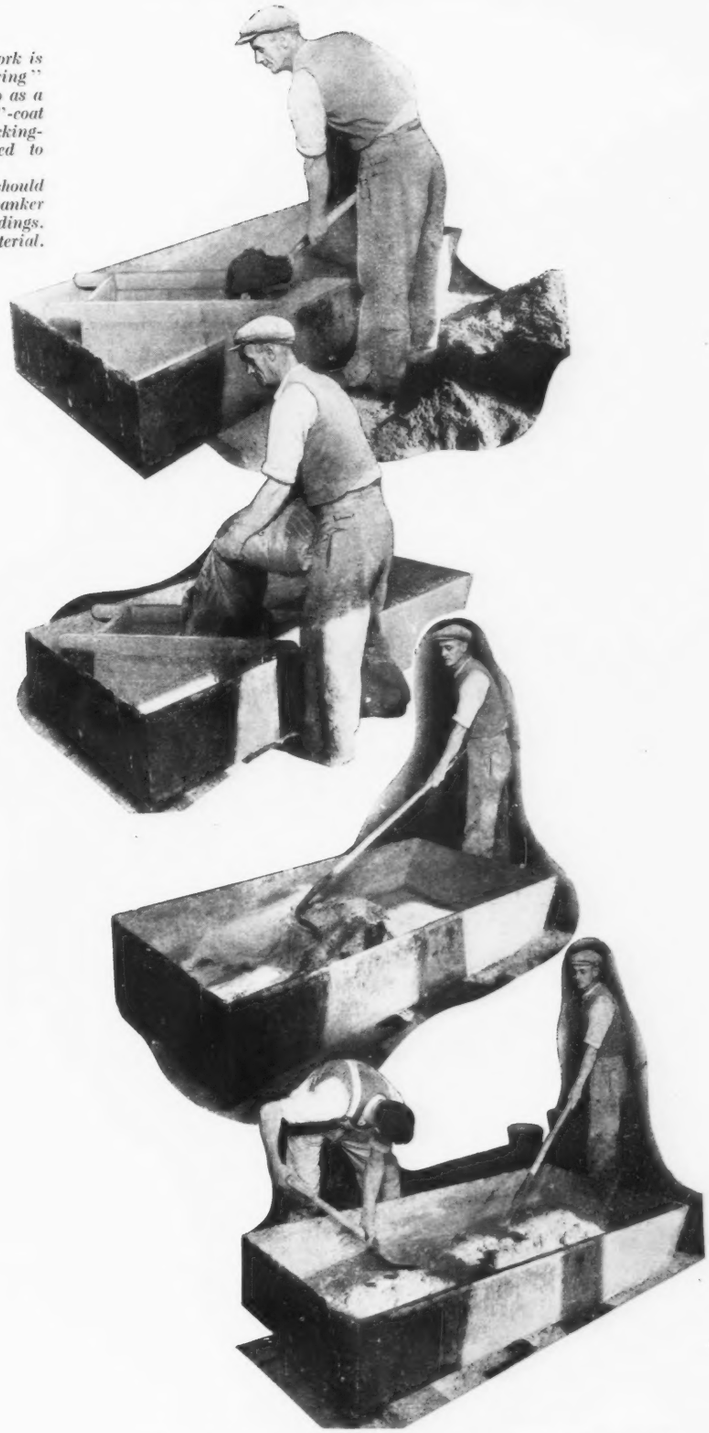








On wood, or metal lath, three-coat work is required. What is called a "rendering" coat on brickwork is here referred to as a "pricking-up" coat (="scratch"-coat in Scotland and America). The "pricking-up" coat should be well scratched to provide a good key.
Below, on facing page, plaster should not be mixed on a floor, on banker boards, or on the earth outside buildings. Spent plaster quickly spoils fresh material.

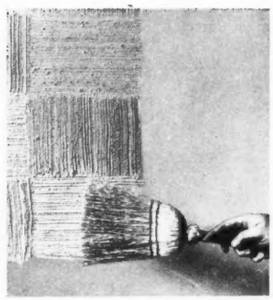


Where hand-mixing is carried out the mess and waste that are inevitable when plaster is mixed on "banker-boards" and then transferred to "spot-boards" should be avoided where possible. Water will often seep through a banker and cause damage to work below. The proper method requires the use of clean water and tools, with plaster mixed in a mortar-box. A measured quantity of sand and plaster are first mixed dry at one end of the box, water is then added at the other, the material gradually being stirred to the proper consistency. If mechanical mixing is used, water and half the final quantity of sand are first mixed, the plaster is added, the balance of the sand then added and the whole mixed.

M I X I N G

DECORATIVE PLASTER

The decorative use of plaster is in itself of larger scope than the purely technical aspect considered in the preceding pages and will be dealt with in a future supplement. Below is given a brief summary of three of the more important decorative uses of plaster.

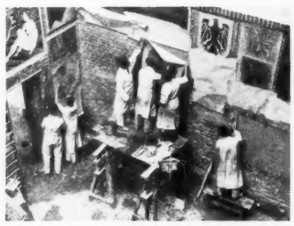


1, Textured Finishes

Textured finishes are often ignored but are easily made possible by stroking with a broom or dabbing with a cloth before the plaster has set. "Oyster-shell" segments can be made with a scratcher, and scallops made by dabbing with a wooden float.

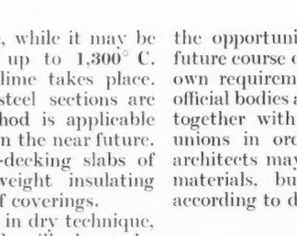
2, Fibrous Plaster

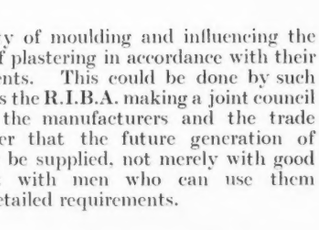
Fibrous plaster's use in modern decorative technique is chiefly that of simulating the finish of other materials, an extreme example—from film set design—being shown on page 207. A mould is covered with shellac, the "firstings"—a thin soup of plaster—are poured on; canvas scrim is then applied to the "firstings" immediately before setting to give added strength, and a final coat of plaster is then applied.



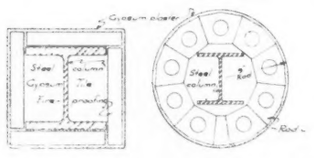
3, Sgraffito and Fresco

There has been a recent revival of both fresco and sgraffito. Sgraffito has two or more layers of plaster of different colours. A design is traced on the wall, and layers of plaster are scratched away to reveal parts of the background colour as shown on the right. The method is reminiscent of that used (with different materials) to produce the complex designs of Javanese *batik*. The true technique of *buon fresco* is the subject of controversy, but it is generally agreed that the essentials required pigment to be applied to a wet lime plaster, so that as carbonation proceeded the pigment was bound by the finish coat. Two undercoats were applied and the design dusted on to the second. The final coat, the *intonacco*, was then applied, not more than the artist could cover in one day. The technique is difficult and unpopular with craftsmen because of its doubtful performance in all but the driest climates.





THE FUTURE OF PLASTER



THE general trend of plasterwork in the future may be taken as towards the increasing use of a pre-fabricated dry technique. This will undoubtedly involve a more use of plaster-board in perhaps a greater range of qualities than we find today, as it will, too, include the more general introduction of pre-fabricated plaster blocks—both in structural and in decorative design. In this connection, it has been already common practice for some years in America to employ precast plaster "shoe tiles" and "radial blocks"—illustrations of which appear at the head of this note, as encasing members for beams and stanchions, respectively, in steel frame structures. The blocks take the place of concrete casing—with particularly successful results. That American fire assurance companies do, in fact, insist on the plaster block casing is understandable in view of the fact that gypsum will absorb a maximum of some 173 calories of heat per gramme of weight before thermal transmission takes place, while it may be subjected to a temperature of up to 1,300° C. before disintegration into quicklime takes place. Though American and British steel sections are not identical in design the method is applicable here, and will, no doubt, be used in the near future. In the same way, precast roof-decking slabs of gypsum can provide a light-weight insulating material as a basis for waterproof coverings.

Despite an undoubted advance in dry technique, what is termed solid plasterwork will always be with us. Here, however, one may foresee developments in the direction of ready-mixed plasters, as we now have our ready-mixed cements. This would certainly be a step to be welcomed, and one that would rid the architect of his ever-present fear of a badly graded sand.

With a greater proportion of plasterers now learning their trade from the scientific approach—in the schools, one may look, too, in the future, to a greater measure of understanding and co-operation between plasterer and architect, as, one hopes as well, between working plasterer and the scientific research worker in the same field.

Today in the building industry in general there is a tendency towards co-operative organization: we find, for example, development councils in many industries. As yet nothing of the kind exists in plastering, and architects if they are wise will seize the opportunity of moulding and influencing the future course of plastering in accordance with their own requirements. This could be done by such official bodies as the R.I.B.A. making a joint council together with the manufacturers and the trade unions in order that the future generation of architects may be supplied, not merely with good materials, but with men who can use them according to detailed requirements.

A development in dry technique: a hung ceiling composed of steel units and plaster-board finish.

ANTHOLOGY

Wealth and Position

Belchamber is one of the most beautiful places in England. The name, if not the house dates from days when Norman-French was the polite language of our kings; the reigning monarch, some early Henry or Edward, alighting for the night, as was the habit of reigning monarchs, at the house of his vassal, and having been especially pleased with something about the apartment prepared for his use, is said to have remarked in high good humour, "*Pardie! tu as là une belle chambre.*" Something of old-world scandal hung about the legend (which in its authorized form is just a little bare and dull for the nucleus round which gathered the fortunes of a noble family), tales of frail beauty not insensible to a royal lover, of feudal complaisance, not to be more overtly acknowledged than by this gracious allusion to the *belle chambre*, from which the domain was to take its name.

The house, as the humblest tourist may see for himself on certain days of the week, is an exquisite Jacobean structure borrowing largely from the Renaissance palaces of Italy, yet with a certain solid British homeliness about it that specially fits it for its surroundings, the green undulations of an English park. The view from the front is sufficiently extended, and behind it, the various Dutch and Italian gardens are interspersed with water-works and statues like a miniature Versailles. Great oaks and ashes and Spanish chestnuts stand in the park, and four large avenues of elms draw their straight lines across it to the four points of the compass. The little river, which in the woods and meadows is a natural shallow trout-stream with loose-strife and ragged robin fringing its banks, is pressed in the gardens into many curious uses—fountains and cascades, and oblong rectangular fish-ponds, where old carp and goldfish circle in and out among the stalks of foreign water-lilies sunk in hampers. The huge lawn behind the house is shaded by cedars of Lebanon, that are such a characteristic feature of Restoration places, and there is one that disputes with the famous tree at Addington, and I dare say with half a dozen others, the doubtful glory of being the oldest cedar in England.

Of the thousands of acres of which the property consists, the farms and manorial rights, the livings in the gift of the owner, it is not necessary that I should give a catalogue; it is not the business of the novelist to value for probate, but if possible to convey a vague but imposing impression of wealth and position. Suffice it that the Lord of Belchamber is ground-landlord of the greater part of three large parishes, and that in the county of his residence alone no less than three beneficed clergymen sit in their comfortable rectories by the grace of a sickly young man of no very definite religious beliefs, without counting his lordship's domestic chaplain, who ministers to the spiritual needs of a small army of in- and out-door servants and their families in the little tame church that is, so to speak, tethered on the lawn.

Belchamber has suffered but little at the hands of restorers; the family have always taken a sort of lazy pride in the beautiful house, which luckily seldom rose to the point of desiring to improve it. The third marquis, to be sure, had some formidable projects for remodelling the building, of which the plans remain in a great Italian cabinet in the hall; but his two favourite pursuits combined to save his home, for he lost so much money at cards that even he drew back before the large expense involved, and while he still hesitated, a bad fall out hunting cut short his building projects with his life. That was more than a hundred years ago, when gambling and unpaid debts were indispensable parts of the ideal of a gentleman.

H. O. STURGIS (from *Belchamber*, 1904. Oxford University Press)

MARGINALIA

The George V Memorial once more

It is heartening to learn that the whole question of the George V Memorial is likely to be reopened in the near future. When the opposition to the original scheme was so far successful as to defeat the proposal for the demolition of Abingdon Street, the principal bodies concerned, such as the Georgian Group and the Committee of Protest, while delighted that they had obtained their immediate object, made no secret of the fact that they considered the final solution of the problem, if unobjectionable, singularly uninspired. The arguments in favour of the Parliament Square, among other proposals, were freely canvassed at the time and although they have lost none of their cogency need not be recapitulated here. However, all this occurred before Sir Giles Gilbert Scott's attempt to do for the memory of his late Majesty what his grandfather did for the memory of Prince Albert had assumed any concrete form. Now that his design has been given in model form to the world the situation has altered. For Sir Giles's essay in twentieth-century Gothic has not met with universal approval. Sir Reginald Blomfield has lent the weight of his great learning and experience to the opposition in this renewed campaign of the old battle of the styles and has expressed his views in the public press. Likewise Mr. Frank Pick, whose many services in the cause of the improvement of public taste render his views entitled to a peculiar respect, has expressed in print his dissatisfaction with the present scheme. Furthermore it is rumoured that several bodies and individuals who have subscribed largely to the Memorial Scheme, among them the Pilgrim Trust, are far from happy at the turn events have taken, and it is fact that among the amenities group in the House of Commons there is virtually no support for the present compromise. It is therefore devoutly to be hoped that all this dissatisfaction may find concrete expression, that the Parliament Square site may at the eleventh hour be secured and his late Majesty obtain a fitting and proper memorial and the mother of Parliaments a setting that need not shame her in the eyes of such as remain of her usually far better situated children.

Beaumont Street

Meanwhile the battle of Beaumont Street rages more fiercely than ever. In a courteous and fair minded gesture of deference to the views of those opposed to the demolition of an admirable piece of town-planning to the greater glory and better accommodation of a museum collection, the Vice-Chancellor informed the signatories of a petition that had been dispatched from old Oxford men in London that a meeting would be called to discuss the whole matter in which three representatives appointed by the Hebdomadal Council, three representatives of the Ashmolean and three representatives of the petitioners would all have an opportunity of expressing their views. Unfortunately, particularly at a time when the virtues of democracy and free discussion stand so particularly in need of a constant demonstration of their virtues and efficiency, the meeting achieved nothing and ended indeed on a note of painful acrimony.

However, the campaign still continues and the opposition is heartened in their efforts by the decision of the Oxford City Council to refer back the report on the fate of Ship Street, as admirable an example of another and earlier style of Oxford architecture as Beaumont Street is of the Regency period, which was similarly threatened. *The Oxford Mail*, which has taken a noble and not inconsiderable part in the agitation to preserve both these streets, continues the struggle and in a leading article answers a letter from Mr. Principal Emden, Acting Trustee of the Oxford Preservation Trust and principal support of the demolition party. And there at the time of writing the matter rests.

The following is the text of the *Oxford Mail's* admirable leading article of February 28th:

"THE PRESERVATION OF OXFORD

"The Oxford City Council's decision to refer back the report on the fate of Ship-street, Oxford, will be generally welcomed, because it will give time for

the consideration of the larger issues involved.

" Prof. Randolph Schwabe, Slade Professor of Fine Art in London University, places the matter in its right light when he refers to these houses as ' part of the essential character of the city background—not of first-rate importance architecturally, but, like Holywell-street, and other minor thoroughfares, worth preserving for the very pleasant individuality that they have.' To some it may seem extravagant to sacrifice hard cash or convenience for the preservation of ' individuality,' but the City Council is clearly alive to its responsibility as the guardian of the heritage which has come down to us.

" Prof. Schwabe might have included Beaumont-street in the list of thoroughfares of ' pleasant individuality,' and it is to be hoped that the City Council will show as great an anxiety to do the right thing there as in Ship-street. Mr. A. B. Emden, Acting Trustee of the Oxford Preservation Trust, in our correspondence columns today, dismisses the agitation against the Ashmolean Museum extension scheme as the work of ' a small, vociferous band of local residents.' Unhappily, when a characteristic corner of Oxford is threatened nowadays, it is left to a small band of local residents to carry the burden which should be carried by a body which should exist for this purpose.

" The success of the small, vociferous band of local residents who have brought before the City Council the danger of destroying Ship-street offers proof that the struggle for the preservation of Oxford is not lost."

—And Whitehall Palace

The following letter, which appeared recently in the *Sunday Times* over the signature of Mr. Hayward Roberts, contains a suggestion of some interest in view of the situation in Parliament Square discussed in a note on the previous page, but one which comes probably too late for the authorities to consider. A photograph of the present excavations on the site of Whitehall Palace is reproduced on this page.

" Sir,—The House of Lords, discussing this week the National Trust Bill, seemed agreed at least that buildings of historical interest deserved preservation. While their Lordships discussed, the time came nearer when the foundations of the ancient Palace of Whitehall, with associations dating from King Henry VIII, will be hidden (and in part destroyed) by a vast new Government building.

" Is it too late to advocate a change of plan and to aim at making Whitehall a worthier center of Imperial Government? The façade of Bridge Street that faces the Houses of Parliament could very well be replaced by the new buildings that are needed ; let their site extend if necessary to Richmond Terrace, and let them hide New and Newer Scotland Yard. Leave the site of Montagu House (in course of demolition) and of Whitehall Gardens (demolished) as an open space, with the remains of Whitehall Palace as open to view as are, in Imperial Rome, the more ancient remains of the Forum."

World's Fair

That no international exhibition can be launched without a vast amount of preliminary bally-hoo is understandable, and furthermore it was only to be expected that America, the inventor of modern publicity, would undoubtedly excel in this department. However no one, in this country at all events, could have anticipated the fantastic forms it would assume, and to judge from the comments in a recent article in the *New Yorker*, extracts from which are quoted below, even Americans themselves appear to be a trifle overwhelmed.

" I have recently received a mimeographed booklet entitled ' Fair Play,' sent with the compliments of the New York World's Fair 1939, Inc., telling me how to give a party. These instructions are accompanied by a letter from Grover Whalen, in which he says, ' Forget 1938 with its bewildering succession of world events. Forsake that philosophy of doubt, depression, and defeat which has hung like a pall over the nation,' and advises me to give a Dawn of a New Day Party. The directions for the party are neatly departmentalized, like the N.Y.W.F. 1939, Inc., itself, into The Invitation, The Party Plan, The Entertainment, Music, The Decorations, Other Decorations, Menus, World's Fair Inspired Prizes, and The Final Word (" Let us hear about *your* party "). This is quite a departure from the kind of party I am in the habit of giving, and I welcome it.

" In the first place, the booklet says, ' This year, why not base your parties in home or club on the New York World's Fair 1939? . . . Make the World's Fair symbol—the Trylon and Perisphere—*your* party theme.' Carrying out this idea, it suggests, under The Invitation, that you take advantage of the official World's Fair colours, orange and blue, for invitations by writing on orange paper and using envelopes of ' the World's Fair shade of blue paper.' The Party Plan consists of urging guests to come either in the costumes of the sixty-two foreign nations exhibiting at the Fair (World Participation), in attire typical of various states (States Participation), in ' Togs of Tomorrow ' (World of Tomorrow), or in juvenile costumes, which tie in with the Children's World, an area in the Amusement Zone at the Fair. This gets the party off to a good start, and the novel suggestions listed under The Entertainment ought to keep everyone on his toes. For example, you can make a crown out of blue paper, trim it with white Perispheres and orange Trylons, choose a Girl of Tomorrow from among your guests, and crown her while your radio plays ' Dawn of a New Day,' the Fair theme song. After the merriment over this has subsided, you can play games like Perisphere Blow, Pin the Trylon on the Perisphere, and the Primitive Perisphere. In the first of these you blow ping-pong balls, which represent Perispheres, along the floor; the second is a timely variation of Pin the Tail on the Donkey; and in the last everybody blows soap bubbles to represent Perispheres. The one blowing the largest Perisphere wins. ' The Perisphere is nature's own idea—so why not blow soap bubbles to represent it?' the directions state. I must confess the

The excavations, now being made on the site of Whitehall Palace, referred to in the letter quoted on this page. The site is shortly to be occupied by a new block of Government Offices. The house of Richard of Ely, Bishop of London, first stood on the site, and subsequent building was done by Cardinal Wolsey, Henry VIII, James I and William and Mary. The photograph shows the remains of the staircase of the Queen's Garden, designed by Wren between 1692 and 1696.

A MINOR ENGLISH MASTERPIECE

Inkpen Rectory, Berkshire (see the accompanying note) is a little-known house but one of considerable charm and one whose garden is of such rarity as to be of real importance. It is one of the few existing examples of a formal English garden of the pre-romantic tradition (that is, of the tradition of Lenôtre, rather than of Kent or Brown). The fact that it has recently changed hands draws attention to the national value of the work of art with which its new owner is entrusted. Above, the front of the house, a garden vista towards the house and a pleached lime avenue in the garden.

gic of this escapes me. I thought the erisphere was Grover Whalen's own lea, or possibly the baby of that man ho sued the Fair and collected all that oney, but even if nature did think up e Perisphere, what's that got to do with owing soap bubbles? Nature certainly dn't think up soap bubbles, or even ap. All credit to Procter & Gamble d the whale, I say."

There were many stones left unrned at Bellahouston.

Inkpen Rectory

William Kent wrote that "Nature abhors a straight line," and with such enthusiasm were his words acclaimed by the 18th century exponents of the "romantic" and "picturesque" schools of gardening, that where today are left a hundred lay-outs by Capability Brown or Repton, there is but one by London or Wise. Lenôtre, who died in 1700, never crossed the English Channel but his influence upon gardening in this country was as prodigious as it was short lived. It was also slow of acceptance.

In 1657 Lenôtre designed his famous gardens for Fouquet at Vaux-le-Vicomte. It took half a century before English squires patronised the disciples of this great genius, and between 1700 and 1710 they did so with a vengeance. John Rose, London and Henry Wise reaped fortunes between these years, yet today little can with accuracy be ascribed to their hands. The gardens at Hampton Court, at Wrest Park, Bramham Park, Belbourne and Westbury Court, are the sole remaining witnesses, in anything like unspoiled condition, of the Lenôtre tradition in England. Of these gardens by far the best preserved is the one at Bramham Park, Yorkshire, covering an area of approximately 2,000 acres.

But England is a country of infinite and bewildering resources, and now with the recent sale by Queen Anne's Bounty of the little Rectory at Inkpen, on the edge of the Berkshire Downs, another garden in the Lenôtre tradition is brought to notice. This garden must be unique of its kind, for the whole compass of it is confined within four or five acres. The Rectory, practically untouched since the day of its erection by Dr. Brickenden, Master of Pembroke College, Oxford, dates from about the year 1710. There are no records to indicate who the Doctor employed to devise the contemporary garden scheme. In the shape of an almost perfect square, the Inkpen garden pivots upon the house, and from a crescent-shaped opening before the south elevation there radiate straight rides of lime, interspersed with beech and yew, carrying the eye towards the skyline of the downs beyond. An intersecting ride crosses from practically the north-east corner to the south-west corner of the square. At the south-east corner is an artificial mound bearing a clump of yew. At the north-east a narrow avenue of pleached lime, that has never been replanted, extends the axial line from the crescent towards the east beyond the layout.

That this "Lenôtre" garden lay-out in miniature is of the utmost rarity there can be no question. That it has survived intact, together with the Queen Anne house which is its nucleus, is presumably due to the dynastic family of "squarsons," by the name of Butler, who resided at the Rectory from 1757 until 1933, and to the exemplary care it has received from the hands of the late incumbent. The Rectory and the garden at Inkpen constitute a monument whose preservation is of national importance.

Love Indeed Triumphant

"A painting claimed to be a Tintoretto, worth thousands of pounds, has been discovered neglected in a storeroom at the Compton, Surrey, home of Mary Watts, widow of G. F. Watts, R.A., the famous Victorian painter.

"It had lain there for years, dusty, unnoticed, because 'Mrs. Watts set little value on paintings which were not by her husband.'

"The Tintoretto is now in the hands of a West End firm of picture restorers, and is to be offered for purchase to the National Gallery. The present owner of the picture wishes to be anonymous. . . .

"G. F. Watts died in 1904, aged eighty-seven. Among the most famous of his pictures are 'Hope,' 'Love and Life,' and 'Love Triumphant.'"—*The Daily Express.*

The Engravings

The engravings of cottages that decorate the pages of "Marginalia" this month are taken from Loudon's *Encyclopædia of Architecture*, that remarkable work, first published in 1833, that covers the complete range of architectural practice in 1,317 closely printed pages, with 2,342 engraved illustrations, including a chapter on "The Principles of Criticism in Architecture" and numerous series of designs not only for cottages, villas, mansions and other sorts of building in every current style, but for every

A NEW STYLE FOR LONDON

Among the variety of architectural styles with which our city is constantly being enriched there has hitherto been one notable absentee—namely that peculiar brand of modern French architecture which reached fruition at the time of the Exposition des Arts Decoratifs, 1925. Until now our streets have been the poorer for the absence of that fancy brickwork, elaborately pointed, those inset concrete placques with allegorical devices in formalized *bas-relief*, and those curious triangular headed arches. Now this omission has been remedied as a masterpiece of this rare, and today almost forgotten, style has been opened by the President of the French Republic himself; it is situated rather startlingly amidst the sober stucco of South Kensington. Above and left are two photographs of this building, the new Institute Français, the work of M. Patrice Bonnet, chief architect to the French Government, in collaboration with Mr. A. J. Thomas. The building was formally opened by M. Lebrun and H.R.H. the Princess Royal on March 21st during the former's recent visit to this country.

item of their furniture and equipment as well, not excluding farm-buildings, windmills, dog-kennels and even "a Hedge Alehouse of the smallest Size" and "the Fundamental Principles, and the Rules derived from these Principles, for designing and fitting up Schools for the Education of Children in Masses."

The engravings here reproduced are taken either from the chapter entitled *Cottage Dwellings in Various Styles* or that entitled *Designs for Ornamental Cottages*, the difference being that the latter series were to be regarded as part of the embellishments of a gentleman's estate. The illustration of each, which includes plans and sketches, is accompanied by notes on the method of construction, an estimate of the cost, and a paragraph of criticism which suggests that the designs represent Mr. Loudon's collection of works by other contemporary authors. But, knowing the practice at this time of publishing architectural designs as such, we need not assume that all of these cottages were actually built.

The engraving on page 215 is entitled "A Dwelling for a Working Man with a Family of Children." It is estimated to cost between £136 and £272 according to whether the cubic cost be taken as 3d. or 6d. per foot—the variation being in the materials used. Mr. Loudon adds:

"*The Expression* is evidently that of an old English cottage. We should have preferred the chamber windows in the ends, which would have been less picturesque in effect, but cheaper to execute and much easier to keep in repair. . . . This done, and a parapet on the platform and pinnacles over the pendants, are all that are wanting to render this Design very much to our taste."

The first engraving on page 216 represents "A Cottage Dwelling in the German Swiss Style for a Man and his Family, with accommodation for two Horses and a Cow." The cost is estimated at between £212 and £424. Mr. Loudon adds:

"The effect of the walls of the ground storey being of stone is good, by giving the idea of great solidity in itself, and of stability and security in the superstructure. The outside stair, by artificially increasing the distance between the living-rooms and the stable, must in some measure diminish the quantity of effluvia from the cattle, conveyed thither by the clothes of those who attend on them. For our own taste, we should have preferred having two windows in each gable end, and none in the roof; dividing the garrets lengthways. We should not have truncated the gable, and we should have made a better preparation for the chimney stack, raising it higher, and in a bolder style."

The other engraving on page 216 represents "A Cottage of One Storey with Four Rooms, a Kitchen, Back Kitchen and other Conveniences." The cost is estimated at between £360 and £733, and Mr. Loudon adds:

"The veranda in this Design being an object of Luxury, or at least of elegant enjoyment, the wooden columns ought to have had plinths and caps, and the steps to the platform an air of more consequence conferred on them. However, the general form of this building being that of a cube, is good, and the idea of a veranda on three sides is highly commendable."

The first engraving on page 217 represents simply "A Cottage Dwelling of Four Rooms, with other Conveniences." The cost is between £133 and £276, and this design was, it appears, actually executed at Chingford, in Essex. Mr. Loudon says:

"We by no means approve of the plan of having the outside walls of a cottage in wood; but, in many cases, it cannot be avoided. When an old cottage with walls of this description, is to be improved, the weather-boarding may be covered either with what is called weather-tiling, or with tiling so marked as, when put up, to resemble bricks, and known as brick weather-tiling. Much of the effect of such a cottage will depend on the disposition of the flowering shrubs and trees on its veranda and trellised porch."

The second engraving on page 217 is from the chapter referred to above on *Ornamental Cottages*. It represents "The Dairy Lodge erected at Chequers Court, Buckinghamshire, for Sir Robert Frankland Russell, Bart., by E. B. Lamb, Esq., F.I.B.A. It was built in brick and flints in chequered courses, and had timber verge-boards, pinnacles and mullions, painted to imitate oak, and a thatched roof.

Finally, the engraving on this page, from the same chapter, is "The Penshurst Gate-Lodge, at Redleaf, the Seat of W. Wells, Esq."

"Much of the beauty of this cottage," Mr. Loudon says, "results from the break in the roof, by which the vulgarity of so large a plain surface is removed, and a second horizontal shadow obtained, in addition to that produced by the eaves; this breaking up the plain surfaces and rendering them more picturesque."

Entente Cordiale

It was not, it appears a foregone conclusion that M. Bonnet's master piece, which is illustrated on this page would make an immediate appeal to the taste of the L.C.C. His collaborator, Mr. A. J. Thomas, had his doubts But M. Bonnet's Gallic charm assured him a complete victory:

"M. Bonnet is under medium height bearded, and beams with genial French courtesy through his spectacles. For all that he is a stalwart amongst architects.

"He came to London and saw the authorities at the County Hall. Everything he had planned was passed. His victory was the more notable as M. Bonnet does not speak a word of English."—*Daily Telegraph.*