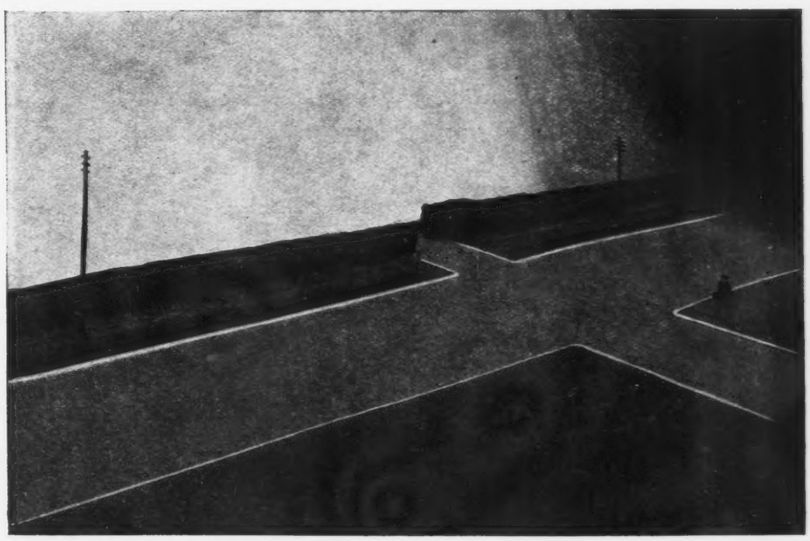
THE ARCHITECTURAL REVIEW

A Magazine of Architecture & Decoration



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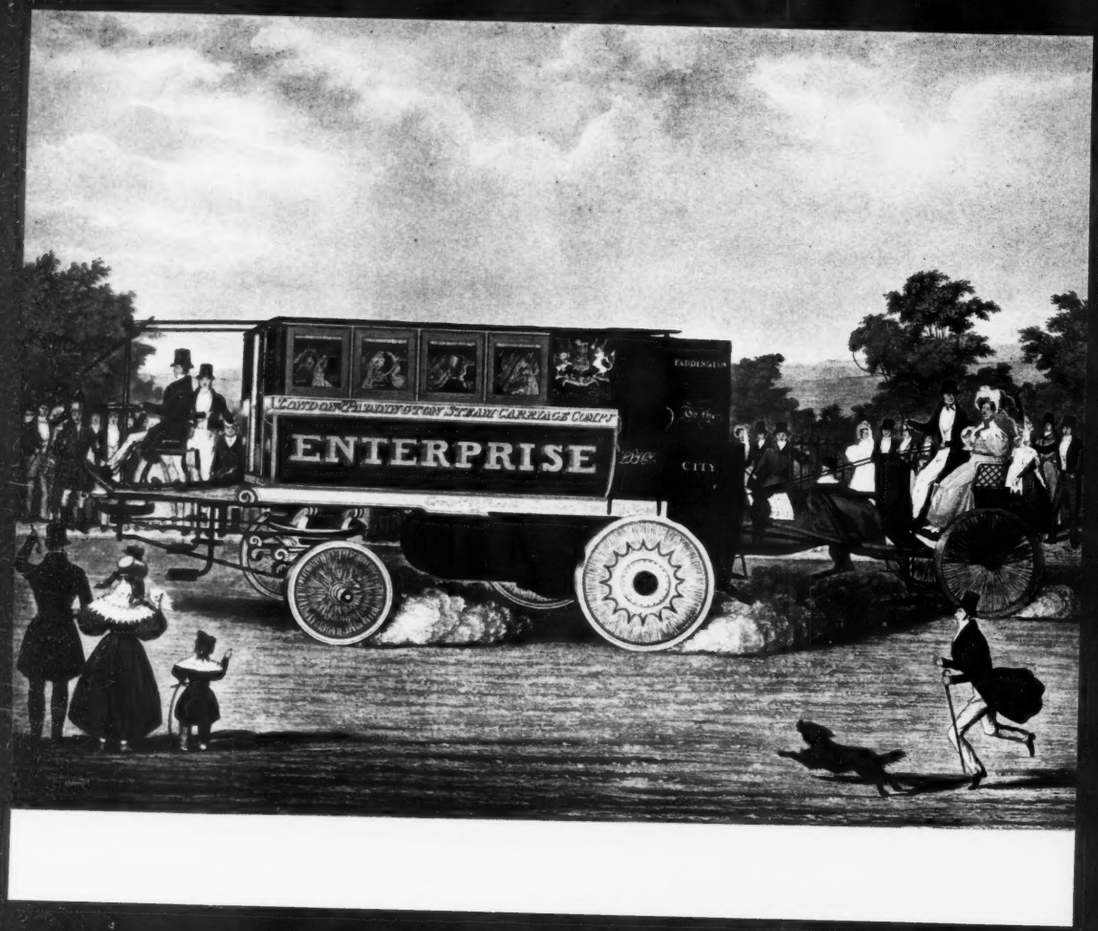

ENTERPRISE
PADDINGTON
CITY

Died April 1st, 1837:

JOHN CONSTABLE

When Constable's pictures were first exhibited in France, at the Louvre in 1824, they caused a stir : far more stir than they had caused in England. Young artists goggled at them excitedly. Delacroix repainted the background of one of his pictures after seeing them. Among the critics there was an uproar. One of them wrote something very illuminating : " These clouds have motion, but they are all alike, and produce the effect of large balls of cotton rolling one over the other . . . Artists tell us, is this what you admire ? Then the noble, the celebrated Poussin is no more anything in your eyes; he did not even know the sublime art. His paintings, always beautiful, grouped in the midst of large clumps of trees; his grounds so rich, where mountains predominate by their imposing aspect, all that is mere dotage ! All that must yield before a wretched barrack simple in design, backed with enormous cauliflowers and brooms which you will call trees." Which was quite a justified comment, on the facts, though one that showed very little understanding, and no vision. For Constable's forms were often like rolling masses of cotton and cauliflowers and broomsticks. His passion for nature and his passion for painting had concentrated and united into a singleness of purpose that few painters have enjoyed. He might well have been fifty years or so early with a parallel to Cézanne's famous remark about nature being reducible to the cube, the cone and the cylinder. He might easily have said, " All nature can be reduced to the roll of cotton, the cauliflower and the broomstick "—except that he loved trees so well that he always wanted them to look like trees, too.

This singleness of purpose was simply a constant effort to reduce the tension between his two passions—for nature and for painting. In a landscape painter this is not unusual, but he had it to a rare degree, and it often produced a fierceness in him which surprised him as much as anyone. The balance he kept between painting and nature was so delicate that whenever he was not painting he was apt to rhapsodize about each of them separately, as if the other did not exist at all. This habit led him astray in his valuations of the art of the past, and, in fact, of most art but his own, of which he knew the value exactly. His opinions of other painting, unless he had a strong feeling for it in relation to his own—were arbitrary and narrow. The notes for his lectures on landscape painting (which Leslie prints at the end of his *Life*) are worth reading only as the products of a bigoted and pompous person. He could write : " If we are to believe Pliny and other ancient writers, chiaroscuro as well as colour was thoroughly understood and practised by the great historical painters. All was, however, lost in the general wreck of Europe; and it is hardly to be expected that in the early time of the Middle Ages anything of so refined a character should appear. The Bayeux Tapestry, which is, indeed, little better than a Mexican performance, scarcely hints at it." Everything was related to his own conflict—though conflict is not the right word for something that was so normal and so profound.

In fact, this tension was very productive. It provided a new problem—or, rather, the same problem renewed—every time he painted a picture. He had only to go down to Bergholt and say to himself " how beautiful the trees are; the dew on the grass is so fresh and shining. Art is hopeless : it can never compete with nature," then to begin painting, and say " how glorious Claude was. Painting is with me but another word for feeling," and so on. He started a picture gaily and as he proceeded the conflict became more and more acute. In a delightful letter which Leslie records he says, " I have got my large ' Waterloo ' beautifully strained on a new frame. . . . It gives me much pleasure in the present occupation; but how long that will last I know not. Archdeacon Fisher used to compare himself in some situations to a lobster in a boiler, very comfortable at first, but as the water became hotter and hotter, grievously perplexed at the bottom." But when he had finished there was usually some kind of satisfactory solution. He was not, particularly in his later life, over self-critical.

For direct observation he had a wonderful eye. His power of *feeling* a particular time of year or time of day in his landscapes, without ever resorting to straight copying in form or colour, is amazing. He did a great many cloud studies, always putting on them the date, the time of year and the hour, and the direction of the wind. In most cases the information is quite unnecessary. He could describe a scene vividly in words, too. His comments on Brighton in a letter to Archdeacon Fisher in 1824 deserve quoting again. " Ladies dressed and undressed; gentlemen in morning gowns and slippers, or without them or anything else, about knee-deep in the breakers; footmen, children, nursery-maids, dogs, boys, fishermen, and Preventive Service men with hangers and pistols; rotten fish, and those hideous amphibious animals, the old bathing-women, whose language, both in oaths and voice, resembles men, all mixed together in endless and indecent confusion. The genteeler part, or Marine Parade, is still more unnatural, with its trimmed and neat appearance, and the dandy jetty or Chain Pier, with its long and elegant strides into the sea a full quarter of a mile."

Having accepted rolls of cotton, cauliflowers and broomsticks as Constable's abstract symbols, one is left to wonder at the variety and the sense of richness that soaks his canvases. Every passage between the trees, in the air as well as on the ground, seems to have been explored, and invites exploration again. Ground and sky become lively and full of meaning for one another, the trees weave branches between them and carve them into rich shapes. In " The Leaping Horse " it is not only the horse that leaps, for everything takes part in the elaborate yet clear counterpoint that is compressed within the room-like landscape, and at the same time is ready to burst and grow to

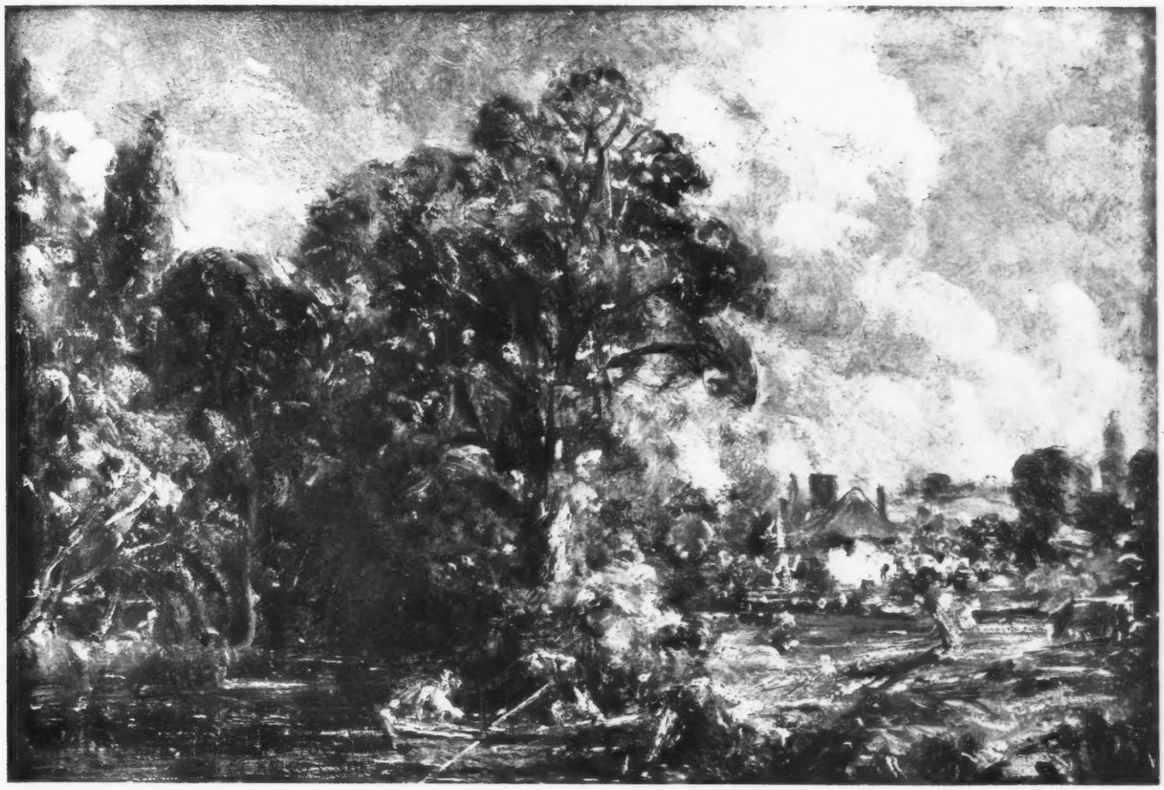
the proper size and fullness of trees in the open country. In "The Valley Farm," and in the study for it at South Kensington, Plate ii, there is a delicious gloom along the stream where it disappears under the trees, and a delicious sparkle across the field to the right which symbolize what were for Constable the limits of nature's inexhaustible range. The gloom and the sparkle—half of each, on either side of the central tree—are natural and right together, yet unlike nature and wholly pictorial. In "Weymouth Bay," in the National Gallery, cliffs, clouds, shadows, breakers, sandy and stony beach, all take part in the flowing design, that is yet calm and fixed because the flow is *through* it, like the force in a wave. Probably his sketches mean more to us today than his big paintings in the end: they are so complete, vivid and timeless. This was another of his great gifts: the capacity to see a landscape whole, as a picture. From his early days he had a feeling for pattern on paper or canvas (which is to be found in his early drawings of cottages and trees at East Bergholt), and this pattern-exploration later became space-exploration, always with reference to nature and never with complete reliance on it. It must have been this quality that moved the French artists at the time of the "cauliflower" critic's remarks. Constable, on account of it, deeply affected the course of the tradition and made the Impressionist movement, and ultimately the whole of the modern movement, possible and necessary. Most of his lessons bore fruit in France. He was largely neglected in England after his death, as well as during his life, and probably his influence is stronger today in this country, indirectly, than it has ever been. Constable was well aware of the abstract quality in his art. He developed it doggedly in opposition to the fashionable historical and, as he called them, "pantomime" effects of his day. "Shall we admire works so unusual *for these excellencies alone*?" (richness, colour and a look of nature), he quotes a contemporary critic as saying. And he writes rather croakingly to Leslie in 1832: "As to meeting you in these grand scenes [Petworth Park] dear Leslie, remember the great were not made for me, nor I for the great; things are better as they are. My limited and abstracted art is to be found under every hedge and in every lane, and therefore nobody thinks it worth picking up."

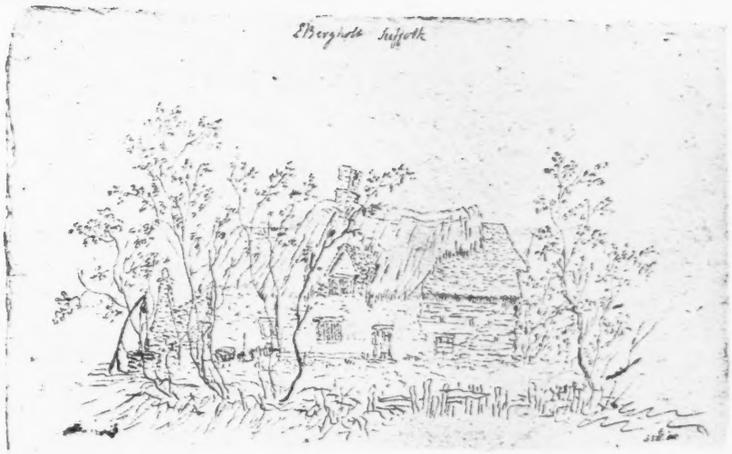
"On the Stour; Dedham Church in the distance." A wash drawing by Constable in the Victoria and Albert Museum.

Although his opinion of his contemporaries was unreliable, it was often brilliant. Of Turner he says in 1828: "He has some golden visions, glorious and beautiful; they are only visions, but still they are art, and one could live and die with such pictures." And the year before he died he burst out "Turner has outdone himself; he seems to paint with liquid steam, so evanescent and so airy." There is not much record of his opinion of Blake, who was born nineteen years before him, but Constable no doubt thought him of no importance whatever: probably as a kind of medicine-man. It is easy enough to see that there would be a misunderstanding between them, but the only evidence of it that Leslie quotes shows Constable at his most obtuse and irritating. Blake was looking through one of Constable's sketch-books, and on seeing a fine drawing of a group of fir-trees at Hampstead exclaimed "This is not drawing, but inspiration," which was obviously a great compliment, from Blake. But Constable could only reply "I never knew it before; I meant it for drawing." To disapprove of Blake would be part of his system. For Blake wrote "To imitate I abhor. I obstinately adhere to the true Style of Art such as Michael Angelo, Rafael, Jul. Rom., Alb. Dürer left it, the Art of Invention, not of Imitation. Imagination is My World." And against that one can put Constable's "What is painting but an imitative art? An art that is to *realize*, not to *feign*. I constantly observe that every man who will not submit to long toil in the imitation of nature, flies off, becomes a phantom, and produces dreams of nonsense and abortions. He thinks to screen himself under a 'fine imagination' which is generally, and almost always in young men, the scapegoat of folly and idleness." That was what he *wanted* painting to be, when he wasn't painting. When he was, "imitation of nature" was a thing he never practised. With a brush in his hand he knew his own powers exactly, and exploited them brilliantly. Ruskin, who was unimaginative about him, says his work "needed chastening and guiding from the works of his fellow-men. Constable, in his dread of saint-worship, deprives himself of much instruction from the Scripture to which he holds, because he will not accept aid in the reading of it from the learning of other men." But at least Constable was no more narrow in his relation of all art to his own than was Ruskin in his relation of all art to Turner's.

Constable was almost literally parochial. He was never at ease when he forced himself to go as far afield as Derbyshire—which was as far afield as he ever did go. But it was not sentiment that drew him back again and again to East Bergholt and Dedham. It was vivid youthful experience, which was so vivid that it intensified and matured right through his life. At its worst it could be called a kind of Peter Pan-ism that prevented him from widening his experience as he grew up, but then it never prevented him from enriching it constantly from its first and only source. He had many things in common with Gilbert White. Apart from their love of nature, and genius for observing and translating it, their art was alike in purity and integrity. Constable realized this. He says, "The mind that produced the 'Selborne' is such a one as I have always envied. The single page of the life of Mr. White leaves a more lasting impression on my mind than all that has been written of Charles V or any other renowned hero. It shows what a real love of nature will do. Surely the serene and blameless life of Mr. White, so exempt from the folly and quackery of the world, must have fitted him for the pure and intimate view he took of nature. . . . This book is an addition to my estate." Perhaps his envy was justified. He never achieved quite the purity, the detached and yet passionate attitude towards nature of Gilbert White—a quality that it is not impossible for a painter to possess: Cézanne proved that by possessing it exactly. But, in spite of his own warning about the stupidity of valuing and comparing great art and great artists, it should be said again that Constable remains, a hundred years after his death, one of the greatest artists that England has produced.

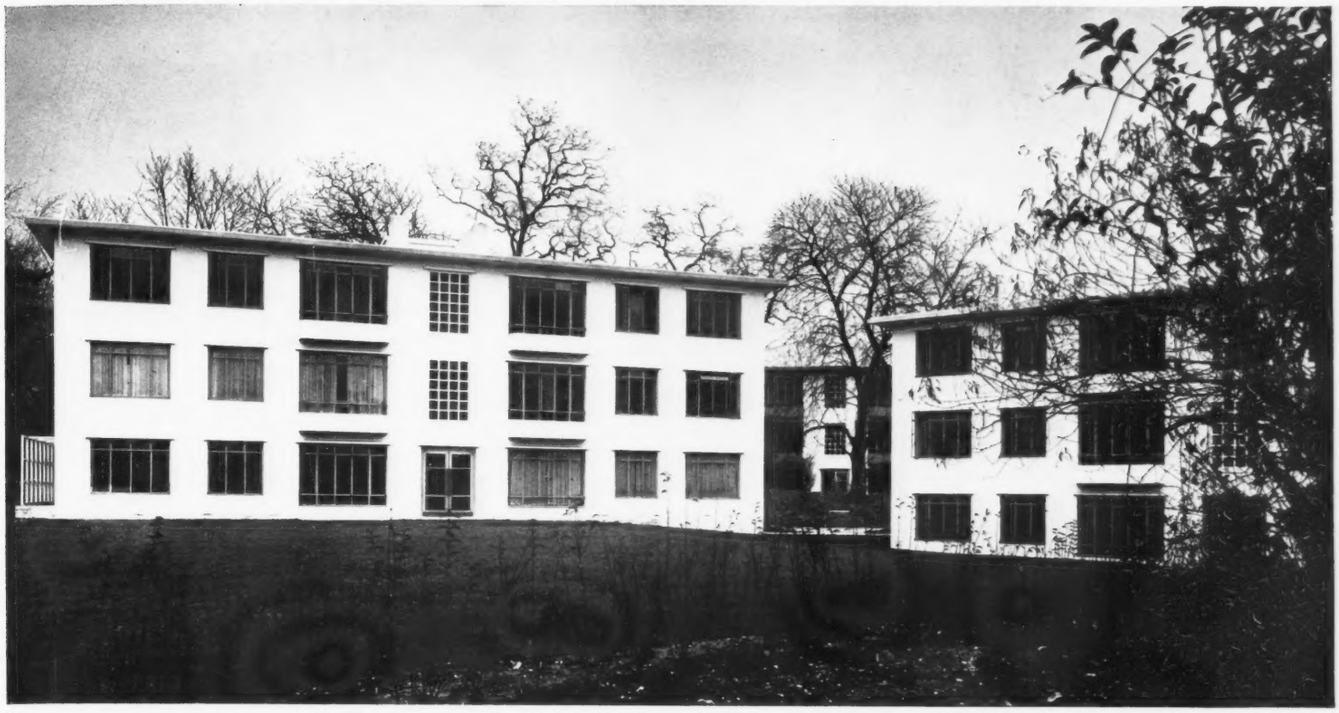
JOHN PIPER





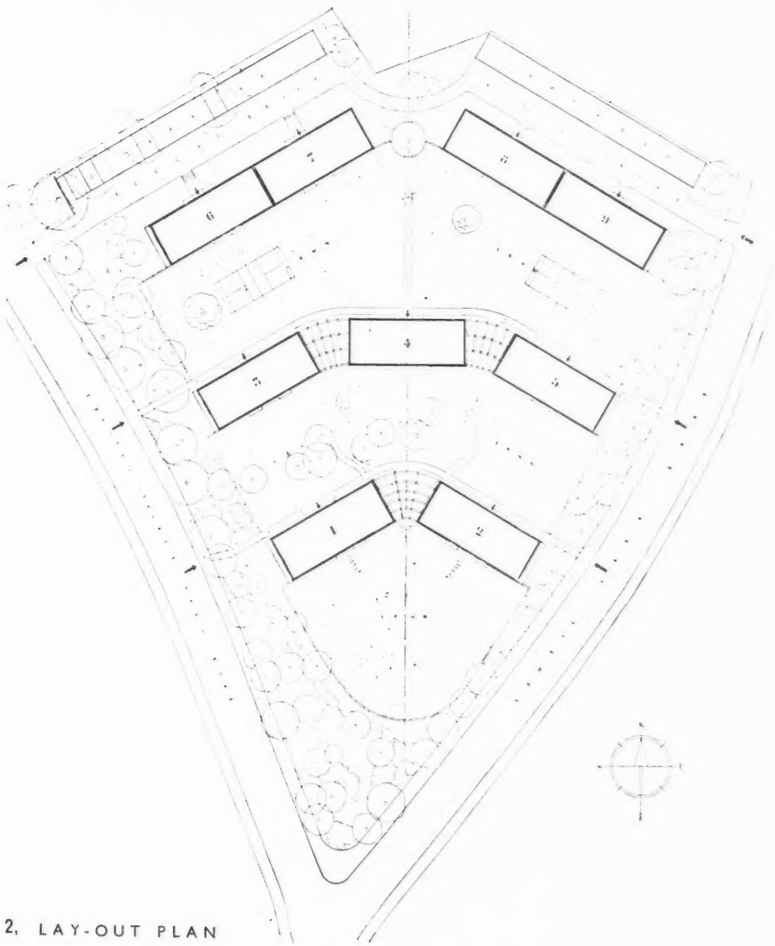
Above : "Sketch for the Valley Farm," oil painting by Constable. *Below :* "A Cottage at East Bergholt, Suffolk," one of Constable's earliest known drawings. Both these illustrations and that on the facing page are reproduced by courtesy of the Victoria and Albert Museum. John Constable died exactly a hundred years ago.

PARK COURT FLATS, CRYSTAL PALACE



1

FREDERICK GIBBERD, ARCHITECT



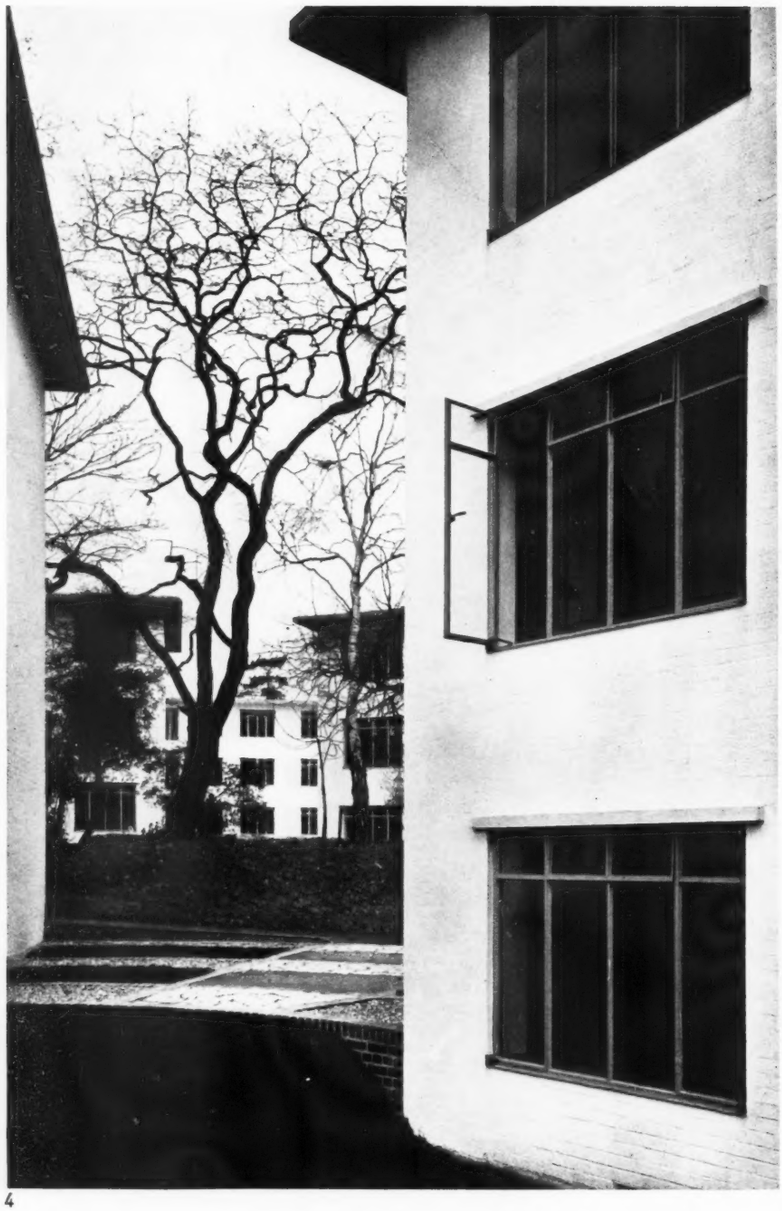
2. LAY-OUT PLAN

There are 54 flats grouped in nine three-storey blocks. Privacy and protection from road noises have dictated the general form of the lay-out, 2, in which access paths serve the rear of the blocks, and a belt of trees encircles the whole site. This lay-out has been combined with a good orientation and complete avoidance of overshadowing. 1 and 3 show views from the south and the south-west.

The original design for the flats was condemned by the Beckenham Urban District Council. An elevation was then submitted with leaded lights in the windows and applied Georgian mouldings to the wall surfaces. This was passed. After this a model was made of the original design and a photograph of the model finally accepted. The only restriction enforced was that all plumbing should be placed externally.

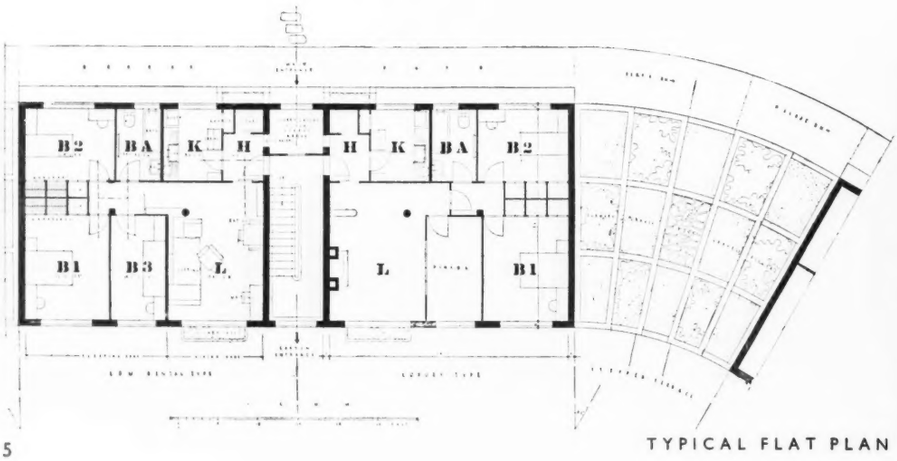
3

P A R K C O U R T F L A T S

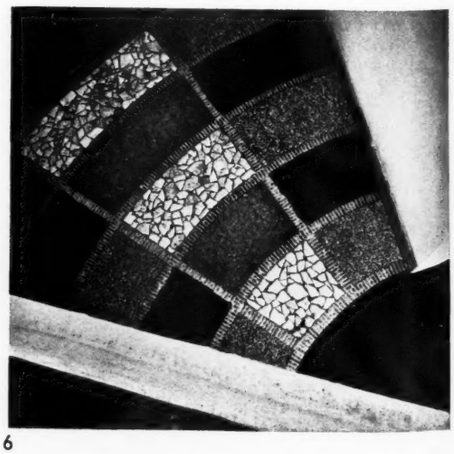


4

The problem of producing a large flat at a low rental (not more than £110 a year) demanded first of all an economical form of structure. The one adopted consists of a concrete spine, concrete and hollow tile structural floors and external walls of brick. The method of planning, with two flats on each floor served by a central staircase, overcomes many of the problems of sound-proofing, as each flat becomes a completely independent unit. Noise transmission between floors has been eliminated by the use of a patent double floor (see drawing on facing page) : a completely separate floor consisting of floor boards, battens and concrete loading slabs rests on rubber pads on the structural floor. Special precautions have been taken against noise from equipment; for example the door furniture is of the most robust and silent type, and the electric light switches are silent in action. The view between the blocks is shown in 4. The three ranges of blocks are painted in different colours. 5, typical flat plan. The left-hand plan was the type originally designed, the right-hand plan shows the more luxurious type which was eventually built, as the owner changed his requirements after the scheme was started. Between the blocks is a chequered pattern of stone, gravel and beds for planting, 6. The access to the blocks and the garden lay-out can be seen in 7. As the access paths pass behind the blocks no visitors or tradesmen pass in front of the principal rooms, and the privacy of the gardens is not disturbed. A door from the staircase hall, 8, gives access to the gardens in front. There are blocks of garages, 10, with access from both roads. The general construction is shown in 9 and a detail in 11. Special features are the soundproof floor, the tubular heating element in the living room, which counteracts the heat loss through the large areas of glass above, and the special curtain rail and pelmet board unit above the windows.



5 TYPICAL FLAT PLAN



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C R Y S T A L P A L A C E

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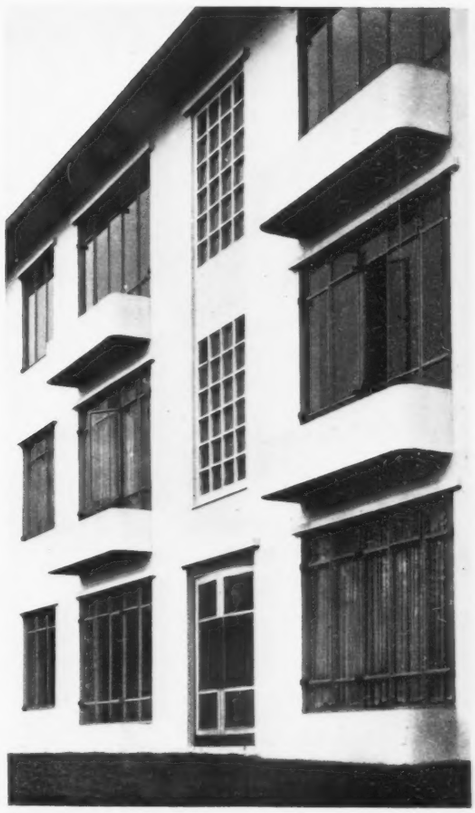

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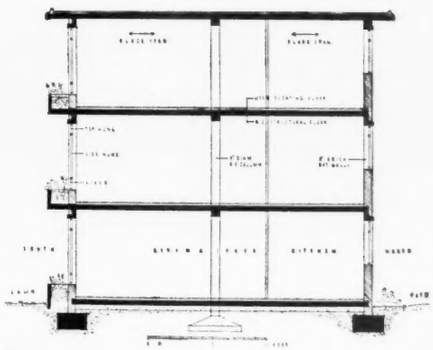
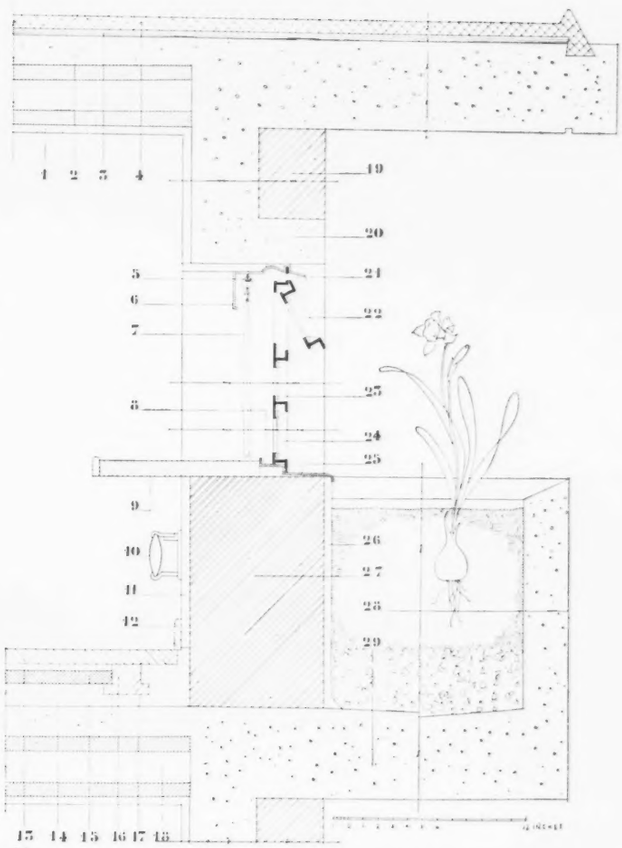


9

KEY TO DETAIL.

1. ½ in. Plaster.
2. Concrete.
3. ½ in. Insulating board.
4. Asphalt.
5. Curtain rail.
6. Aluminium pelmet.
7. Curtain.
8. Condensation channel.
9. Oak cill.
10. Electric heating element.
11. ½ in. Plaster.
12. Oak skirting.
13. Oak floor boards.
14. Air space.
15. Inertia slab.
16. Batten.
17. Rubber isolater.
18. Hollow tile.
19. Brick.
20. Concrete lintel
21. Permanent ventilation.
22. Opening hopper.
23. Casement or fixed light.
24. Fixed light.
25. Aluminium cill.
26. Waterproof rendering.
27. 9 in. Brickwork.
28. Painted face.
29. Waterproofed concrete.

10



11

PARK COURT FLATS, CRYSTAL PALACE

12

13

Folding doors divide the dining room from the living room, 12. Floors in the living zone are in polished oak in narrow widths, and the bedroom floors are in pine for carpeting. Kitchen and bathroom floors are in linoleum. In the staircase halls carpeting and composition dado are a buff colour and the walls above are painted white. Ceilings and staircase soffits are painted: some in wedgwood blue and some in red ochre. The living room, 14, has a coal fire, and supplementary heating by a tubular electric element. Bedrooms have built-in electric fires and the dining room is provided with an electric plug or point. The kitchen is fully equipped for storage, 15. The ventilated larder is equipped with wire shelves for vegetables and slate shelves for perishable goods. A detail of the batteries of cupboards which separate the bedrooms is shown in 16. The door furniture is a heavy pattern, and the finish is bronze.

14

15

16

ROADS

THE HOUSE OF COMMONS. JULY 1936. QUESTION TIME :

Mr. Attlee *asked the Minister of Transport whether he has any proposals to make for securing the improvement of the roads principally used by through traffic?*

The Minister of Transport (Mr. Hore-Belisha) : *Yes, Sir. For some time His Majesty's Government have had under review the difficulties in securing more uniform standards to accord with modern requirements on the main through traffic routes, and have reached the conclusion that the most satisfactory solution is to transfer from the county councils to the Minister of Transport, as highway authority, full responsibility for the maintenance and improvement of some 4,500 miles of the more important routes used largely by through traffic and usually described as trunk roads. It is their intention . . .*

THE TRUNK ROADS ACT COMES INTO OPERATION ON APRIL 1ST.

One thing about this Road Supplement should be explained at once. It does not pretend to deal with roads in relation to the complex activities of which they are in fact the product. It does not pretend to say where roads should go, or how they should lie relative to living and working. For to do so would involve a discussion of territorial planning which it has been our purpose here to avoid.

We are simply treating roads as objects; the idea being that by regarding them as bits of architecture and by trying to distinguish what is, and what is not, to the purpose in road design; what is workmanlike and satisfactory, or accidental and superfluous; the public may begin to grow road-conscious in a new sense, and may begin to lay down in memory and in visual habit the precedents which will establish eventually a suitable modern road idiom.

There are certain principles, however, that we must begin by establishing. It must be said that there are at least three main types of road: first, the LANE which, in the nomenclature of Colonel O'Gorman (the most notorious living debunker of the official attitude of genteelism towards transport problems), is described as the *service* road: the local track, identified in Fleet Street literature with the rolling English drunkard; secondly, the TRUNK ROAD, evoked by the demands of long-distance 10 m.p.h. traffic, whose unit was the stage and active principle the stage coach, which Colonel O'Gorman specifies as the *through* road; and thirdly, the type of track called in Italy *auto-strada*, in short RACE-TRACK, developed on the Continent as the complement of more-than-a-mile-a-minute internal combustion—also a through road.

It will be seen that the difference in the degree of speed aimed at on these roads is the factor which differentiates them, and the difference in degree of speed is so great that the roads must be regarded for practical purposes as being different in kind.

It is with the last class of road that we are dealing here, in practice if not in design. The type is shown in the diagram which repeats itself throughout this Supplement: the virgin tarmac, so to speak, upon the basis of which an efficient technique of speed architecture must be built up.

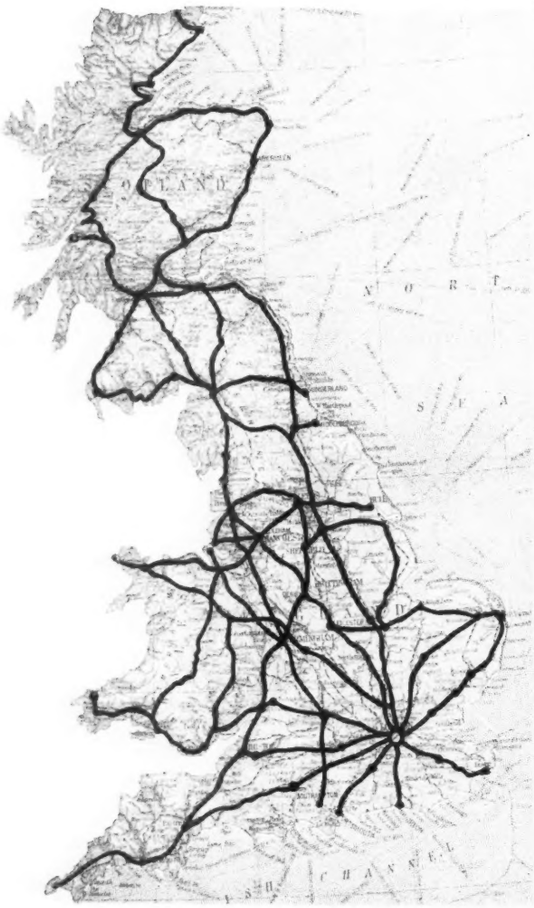
The problem of the speed-track has arisen only since the War. It should not be forgotten, however, that this problem arose in the same form almost exactly a century ago, when the menace of the steam-engine, with a speed potentially as great as that of the internal-combustion engine, led to the steam-car's isolation behind wire entanglements, where shiny metal tracks were laid to keep it on the right lines. The consequent loss in mobility since it was confined to one track, though limiting its performance, at the same time localized its territorial effects. The life and work of almost the whole population soon revolved around the stopping places on the permanent way, to which they owed their physical and economic existence.

It is, we suggest, for a potential development as great, as revolutionary, as that which was inaugurated by the railways, that the Minister of Transport has got to prepare in laying down those railless lines on which the new locomotive can fulfil its destiny. His ultimate problem is to find for the new mode of transport a medium of expression which, without reducing its mobility (the difference between the automobile and the locomotive lies in a difference in mobility), will increase its performance, not at the expense of, but as a solution for, the needs of the living community.

That in his own mind, the Minister is preparing for this, we do not doubt. We take leave to doubt, however, whether the public in

▽ "The Penguins of to-day make me think of the ancient Egyptians. According to Clement of Alexandria, Taine tells us—though he misquotes the text—the Egyptians worshipped the crocodiles that devoured them. The Penguins to-day worship the motors that crush them. Without doubt the future belongs to the metal beast. We are no more likely to go back to cabs than we are to go back to the diligence. And the long martyrdom of the horse will come to an end. The motor, which the frenzied cupidity of manufacturers hurls like a Juggernaut's car upon the bewildered people and of which the idle and fashionable make a foolish though fatal elegance, will soon begin to perform its true function, and putting its strength at the service of the entire people, will behave like a docile, toiling monster. But in order that the motor may cease to be injurious and become beneficent we must build roads suited to its speed, roads which it cannot tear up with its ferocious tyres, and from which it will send no clouds of poisonous dust into human lungs. We ought not to allow slower vehicles or mere animals to go upon these roads, and we should establish garages upon them and foot-bridges over them, and so create order and harmony among the means of communication of the future. This is the wish of every good citizen."—From **Penguin Island,** by Anatole France, **1907.**

The new National Road System of Great Britain.



general has even a conception of the implications. It must be obvious that a complicated system of studs, traffic lights, roundabouts and beacons is simply a complicated system of stage props designed, if not to throw dust in the audience's eye, at least to focus attention upon attractive incidentals, on the principle perhaps that the stage must be set before the actor can begin to do his business.

While slowing down traffic, these feats of showmanship have not reduced the accident figure; a fact that is sometimes used to discredit the Minister of Transport. This is quite unfair. No studs or beacons can diminish accidents. We say that quite explicitly, and have no fear of being proved wrong by the future. For the fact is, the accidents in England are and always have been *astonishingly few.*

Colonel O'Gorman has produced some intriguing figures showing how low they are—for the average driver: 400 years of motoring per driver to every death. Whether or not his figures are officially accepted, the fact remains, as every driver of cars will testify, that today the great percentage of accidents is due not to hogging of any sort, but to the quickness of the machine overtaking the speed of thought. Dangerous driving, where it occurs, is due to the effects of speed-psychology, effects which are the inevitable concomitant of a speed economy; and as nerves deteriorate—and motoring under present conditions is one of the greatest inducers of nervous disorders—the incidence of death on the road will tend to increase rather than decrease.

It will continue to increase unless and until what was done a hundred years ago with steam-locomotion, by an act which made it at once incomparably the fastest and the safest means of locomotion in the world, is done for the automobile: that is until tracks are laid down for specific automobile use at high speeds, designed and equipped to make high speed an asset to the nation's life, and not a liability.

We wish to make this point clear. The disaster of road accidents is due to the Government not having done today what an earlier Government did a century ago: that is, carved out for the new means of locomotion specific lines of movement.

The new lines we speak of come in our third category: *through* speed roads, and they must be *new* roads.

Here lies a danger which the public should be made aware of; that the authorities will try to turn the existing road systems (categories one and two, service roads and trunk roads designed for 10 m.p.h. travel) into a compromise on which the rolling drunkard and the high-speed projectile can fight out their right to survival.

The dangers of this course are obvious. Barring a few tracks like the Great North Road, the trunk road system of this country (category two) is based on the local service system (category one); in fact is nothing more than a knitting-together of that system, and where it has broken away from the system, as in the recent by-passes, the break has been shown to be not genuine, for the local life has chased after it and got a fresh stranglehold. *The trunk roads are already compromised.* A policy of hedging and ditching, straightening corners, and bridging crossings on roads that are *already compromised*, in so far as it encourages speed is worse than a futile policy: it is a dangerous policy. It is producing the conditions for speed where speed should not, under any circumstances, be countenanced. The last thing wanted is that road categories one and two should be "improved" to make a network of high-speed tracks woven through the living cells of the community. If this be the idea let the Minister make a good job of it: pull down the railings along the railways, encourage building development, and let the children build castles on the line. This would be *much safer* than developing the local road system for motor traffic, which is nothing less than mass murder carried out by the local, with the sanction of the central, authority.

We believe the arguments employed officially against these suggestions take two lines: first that it is wasteful of good land, of good agricultural land, to build new roads where an old one will "do"; and secondly that even if their value were agreed, where in fact are you going to build a swagger speedway in a country like England where every form of opposition, private, local patriotic, preservative, conservative, is at the service of the obstructor, and where negotiation for the acquisition of land would entail enormous expenditure of labour and money, the land of England being already, it is pointed out, highly developed and densely populated: whereas the countries which can afford to dabble with great new motor roads are relatively undeveloped, and thus have land to burn?

The answer to the first objection is that the construction of new roads, by avoiding the widening and straightening of the existing system, will actually economize land. Not long ago, the Minister of Transport said that he would not rest satisfied until every road in the country was double its existing size. Imagine the amount of land and compensation which must be swallowed up to satisfy this ambition, which would actually be a retrograde step. Imagine the amount of compensation and negotiation involved in encroaching piece by piece on all the little plots of land, in different ownership, that border our existing roads, and compare it with virgin country where acres at a stretch are in the same ownership.

The answer to the second objection is that the need of fast motor-tracks is in direct ratio to the development and density of population. The fact that England is highly developed and densely populated, the fact that the land is already burdened with manifold uses and exploited by great interests, is an argument *for* not *against* the *auto-strada*. It makes it not merely a luxury but a necessity, for the alternative is a progressive slowing down of the circulatory system as the pressure upon it increases.

Nor must we allow the railway interests to obstruct the building of these new roads. The necessary priority of the public welfare apart, it has been shown that, so far, the main roads have not taken traffic away from the railways but have brought new traffic to them. A hundred years ago men of courage laid the foundation of the Victorian scene with the picks and shovels that levelled out the permanent way. The problems of today are the result of the development brought about by that very road. To stop our own road building would be to arrest the development of our own century.

The most serious practical difficulty in the way of carrying out the great work of national road building has hitherto been the lack of co-ordination between those responsible for the work. The control of our own roads, like that of so many of our public services, is distributed amongst innumerable local authorities. This is a legacy from the days when a road *was* a local affair only, serving only a local purpose. But fortunately, a start is being made in the greater co-ordination of authority. The occasion of this Supplement on road design is the coming into force of the new Trunk Roads Act. It is hardly necessary to emphasize what an administrative revolution this Bill represents. It will transfer to the Ministry of Transport the whole responsibility for the 4,500 miles of the trunk road system of England, Scotland and Wales, roads which are now under the haphazard administration of 84 different local authorities.

Nationalization is not itself an improvement; it only offers an opportunity for improvement. The Minister of Transport has promised a thorough survey of the existing trunk road system, to be followed by provision of all the up-to-date ameliorative appliances such as fly-over crossings and pedestrian bridges. But what is more important than these is fresh vision applied to understanding what the modern motor road might be: functionally, socially, æsthetically.

PROBLEMS OF PLANNING

By C. D. Buchanan

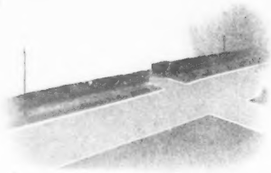
THERE are 180,000 miles of road in this country which, in legal phrasing, are "repairable by the inhabitants at large" and the task of maintaining, and when necessary of enlarging, this network of highways is one of the most important duties which public authorities are called upon to perform. The bodies legally responsible for maintaining these roads are known as Highway Authorities and they are, broadly speaking, the councils of counties, county boroughs and urban districts, and the expenses incurred are borne partly by the local rates and partly by grants made by the Minister of Transport from the Road Fund. The Minister of Transport, it should be understood, has not been, up to the present,* a highway authority, but nevertheless the grant system has enabled him to exercise a considerable co-ordinating control over the activities of the local authorities. The rate at which grants are made depends upon the locality and importance of the road and the nature of the work involved. Sometimes as much as 85 per cent. of the total cost of a scheme is borne by central funds.

The Acts of Parliament from which the highway authorities derive their powers are numerous and there is space only to mention two measures which relate to the planning of roads. The first measure is the Town and Country Planning Act of 1932, which enables local authorities, or, even more important, joint committees of local authorities, to prepare planning schemes which can define all the various uses to which the land in the area being planned can be put. The second measure, the Restriction of Ribbon Development Act of 1935, was designed primarily to check, as a matter of national urgency, the undesirable stringing of buildings along main roads, and to provide a simple and rapid procedure whereby highway authorities could reserve land for future road purposes. Subject to the approval of the Minister of Transport, the Act enables highway authorities to adopt certain standard widths for their roads. Within these widths, which represent the ultimate width to which the road will be widened, all the land is sterilized, and in the simple fact that the Minister's approval must be sought for the adoption of a width lies a most valuable power for the co-ordination of road dimensions throughout the country.

In addition to these two measures, an Act has recently been passed by Parliament which may be destined to have the very greatest effect upon the road system of the country. The main object of the Trunk Roads Act is stated to be the transfer, from April 1st, 1937, of the responsibility for the maintenance and improvement of some 4,500 miles of important main roads from the local authorities to the Minister of Transport, but the most important implication of the Act from the point of view of this article would appear to be the acknowledgment that the trunk road system is inadequate as far as the traffic capacity of its individual links is concerned, and that measures are in contemplation for its improvement in this respect within a reasonable period of time. It is not unreasonable to deduce, therefore, that these measures will have to be on a scale larger than anything yet attempted.

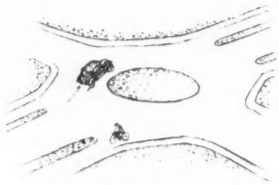
* That is, up to the passing of the Trunk Roads Act: see below.

THE PROGRESS OF THE ROAD

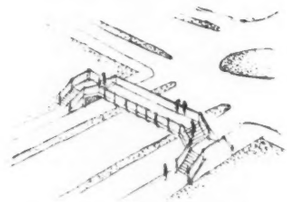


The simple cross-roads

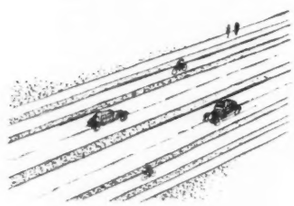
Tracks for cyclists



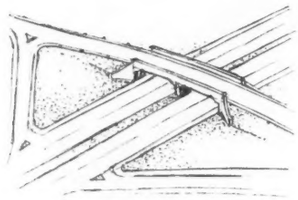
The roundabout



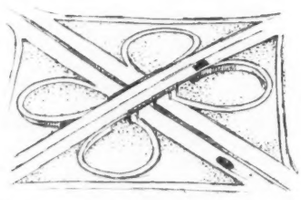
Bridge for pedestrians



Double tracks



Fly-over crossing



"Clover-leaf" crossing

The provision of footpaths. In a tree-lined road, the new footpath might be set on the far side of the bank. Intelligence must be used: the path in the upper photograph stops short at a tree instead of continuing behind it, defeating its own purpose.

In Great Britain there are 11·5 mechanically-propelled vehicles per mile of road, excluding motor-cycles. So far as can be ascertained from the information available, the number for France is 5·3, for Germany 8·1, and for the U.S.A. 7·9.

"The 316 miles of the Great North Road from London to the Scottish border is an example of unsatisfactory conditions of a through route. There still remains 190 miles or nearly two-thirds of its total length where the road cannot safely and conveniently accommodate more than one line of traffic in each direction. A stationary vehicle therefore reduces the road to a single track."

THE EVENING STANDARD

Number of persons killed or injured on the roads of Great Britain, 1926 to 1935, and the number of vehicles licensed.

YEAR	KILLED	INJURED	NUMBER OF VEHICLES LICENSED IN GT. BRITAIN (APPROXIMATELY)
1926	4,886	133,888	1,729,000
1927	5,329	148,575	1,898,500
1928	6,138	164,838	2,036,000
1929	6,696	170,917	2,172,800
1930	7,305	177,895	2,260,500
1931	6,691	202,119	2,196,100
1932	6,667	206,450	2,219,200
1933	7,202	216,328	2,282,000
1934	7,343	231,603	2,395,300
1935	6,502	221,726	2,581,027

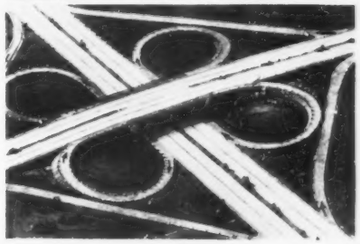
Ever since the war there has been a continual effort to render the main roads equal to the demands of traffic, and it can fairly be said that there are many miles of important main roads which, in open country at any rate, are carrying very heavy volumes of traffic with a considerable degree of efficiency. The work that has been done on these roads has consisted in the main of widening to an effective width of about 60 feet, providing a uniform carriageway 20 feet or 30 feet wide, easing or by-passing bends, reconstructing weak, narrow or dangerous bridges, improving gradients, providing super-elevation where necessary, securing some degree of non-skid surface, and forming, if not in all cases footpaths, at least verges for the accommodation of pedestrians. Many by-passes to towns and villages have also been constructed, generally to the dimensions mentioned above. In addition to these constructional measures a great deal of other work has been done which in one way or another has contributed towards easing the traffic problem. The construction of bus stations and parking places, for example, is of permanent value and contributes in the rather indirect way of removing vehicles from the streets. One-way streets, speed limits, traffic signals, the restriction of heavy traffic on narrow roads and the prohibition or regulation of vehicles waiting in busy streets, are examples of measures which should properly be regarded as temporary palliatives, even though in many cases they are likely to remain in force for long periods.

In spite of all this work the main road system as a whole still lags far behind the ever-increasing demands of traffic; in towns buses, trams, lorries, cars, pedestrians, perambulators and even terrified cattle being driven to market or slaughter struggle to make their way through streets built for the most part in days when such a volume of traffic was undreamed of; and in the open country the never-ending stream of commercial and holiday vehicles winds its way along the sinuous lines of

Tracks for cyclists. The same road (upper photograph) used by different types of traffic moving at different speeds is the greatest cause of accidents and delay. Lower photograph: segregation of traffic in a Surrey suburb.

Bridge for pedestrians. A safety measure not yet much used in this country. The one shown is in Germany.

Double tracks. A further stage in traffic segregation on through roads, avoiding the possibility of head-on collision. Again a German example.



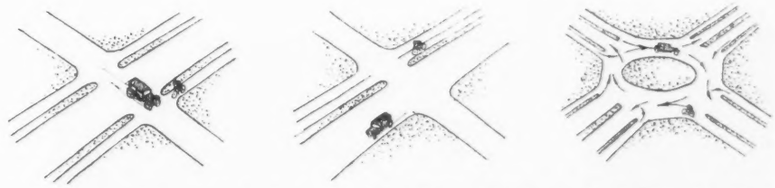
Service roads. The need for separating through and service traffic is shown in the top photograph, where waiting and entering vehicles complicate the function of an important by-pass. The other photographs show a typically disorderly service approach off a main road and one more neatly designed.

Other complications the road has acquired in adapting itself to traffic needs are the "roundabout," the "fly-over" crossing (middle photograph, a crossing over the new Winchester by-pass), and the elaborate "clover-leaf," devised so that any turn can be made without streams of traffic meeting.

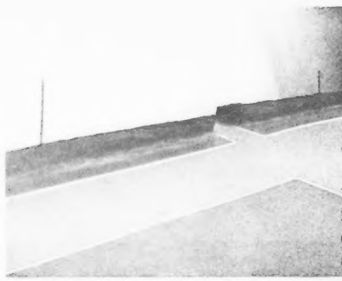
the old coaching roads, in many places so narrow that a single standing vehicle causes serious congestion. The most tragic feature of all is the reluctance of the mass of road users to appreciate the inadequacies of the system, with the consequence that 6,000 of their number are killed and 200,000 are injured during every single year.

The question of the need for a new road system that recognizes the entirely different purposes to which roads are put is dealt with by the Editor in his foreword to this Supplement. This question apart, there are a number of more detailed planning considerations which relate to the improvement of old roads as much as to the construction of new.

Turning to the æsthetic aspect, some of our new roads have achieved real beauty—the western end of the Colchester by-pass comes to mind, sweeping up to join the old Roman road, its broad verges well-timbered with graceful ash trees. Most of the new by-passes, in fact, where there has been no lateral building development, where the verges are ample and the surfaces uniform, and where no insignificant lighting standards or ugly poles for overhead wires have been erected have, in spite of their general bleakness, a certain vigour and simplicity inherent in their design. When we consider the improvements which have been carried out on the existing roads, the position is less satisfactory. The surfaces are patchy and irregular in colour and texture, the verges have too often been reduced in width by carriageway widening, one of the hedges has perhaps been replaced by a paltry iron railing or a mean concrete post and wire fence, and trees have been ruthlessly cut down with no attempt at replanting. It is fortunate that the majority of rural roads and lanes have so far escaped any drastic widening operations. Whatever may be their inefficiencies as traffic ways, they are the most characteristic feature of the loveliest countryside in the world. The increasing penetration of holiday motor traffic into every nook



Defects must be watched. The benefit of the cycle-track is lost at the intersection (just where traffic segregation is most needed). This defect could be minimized by running the two cycle-tracks on the same side. Often it is exaggerated by extra constriction through too little space being allowed for the 'roundabout' (as in the bottle-necks on the Sutton by-pass).



The new landscape of Greater London is dominated by the new sweeping ribbons of arterial road. These roads, though they have mostly been superimposed on the land with little regard for the larger principles of territorial planning, do show evidence, particularly from the air, of the impressive scale that the trunk road of the future will contribute to English landscape. Below, on the Great West Road, a bad example of ribbon development and of indiscriminate mixing of domestic and industrial building. Opposite, the junction of the Great West Road and the Bath Road at Hounslow: magnificent in scale but ugly in the alignment of its junctions and designed quite irrelevantly to the planning and utilization of the land it crosses.

and corner of the countryside will render the widening of many of these roads essential, and it should not be beyond our wit, by careful planting and judicious placing of footpaths, to make them equal to their task, at any rate as modern *service* roads, without in any way destroying their rural character.

In addition to the lapses from orderly design which have just been discussed, many of which, it must be admitted, have been due to the sheer desperate necessity for improving the traffic facilities as quickly as possible, there is one other disquieting feature of recent highway planning which must be mentioned. The failure to realize that the use and layout of the land adjacent to the road is as much part of the design-problem as is the layout of the carriageways and footpaths has led, during the last twenty years, to a wholesale destruction of amenities as tragic as anything achieved during the century following the industrial revolution. To find examples of this type of failure is all too easy, for there is not a single town which has not pushed its defiling tentacles of ribbon development into the countryside. Hundreds of miles of road have been irretrievably disfigured, and thousands of people are living in surroundings where there is as little hope of fostering a spirit of civic responsibility as there is in the slums which we are trying so hard to abolish. In addition to these grave social disadvantages, ribbon development presents the very practical drawback that it causes serious hindrance and danger to through-traffic by reason of the standing vehicles it encourages, and the presence of numerous badly-designed points of access. The complete prevention of ribbon development can obviously only be secured by comprehensive planning, but intelligent use of the very valuable powers contained in the Restriction of Ribbon Development Act can do much to mitigate the evil.

A great deal of attention has been given in the last few years to the technical problems of road design and certain principles now seem to have crystallized which may be stated briefly as follows:

1. *The chief contributory cause of accidents is the simultaneous use of roads by all classes of traffic and therefore, whenever possible, consideration must be given to the segregation of the different types of traffic by the provision of separate running surfaces. For this purpose traffic may be divided into three classes—vehicular, cycle and pedestrian, and separate reservations should be provided for each. A further refinement is to separate slow-moving from fast-moving vehicular traffic, either by the provision of separate carriageways, or by the construction of special motor roads.*

2. *Where the vehicular traffic exceeds 400 vehicles per hour at the peak hour, the carriageway should be divided longitudinally so that traffic moving in opposite directions is entirely segregated.*

3. *Where lateral development occurs, parallel service roads should be provided so that the main traffic way is not obstructed by standing vehicles.*

4. *At the intersections of important main roads consideration should always be given to the possibility of "flying" one road over the other and providing ramps for the convenience of traffic moving from one road to the other. Failing this the junction should be designed on the "roundabout" principle.*

5. *Ample visibility should be provided at points where minor roads join main roads and the layout should be such that traffic entering the major road is obliged to do so at a reduced speed.*

6. *Road surfaces should be uniform and non-skid, and for safety at night the carriageway should be of a light colour with a sharply-defined edge.*

7. *Traffic signs should be of simple standard designs and should be sited on uniform principles.*

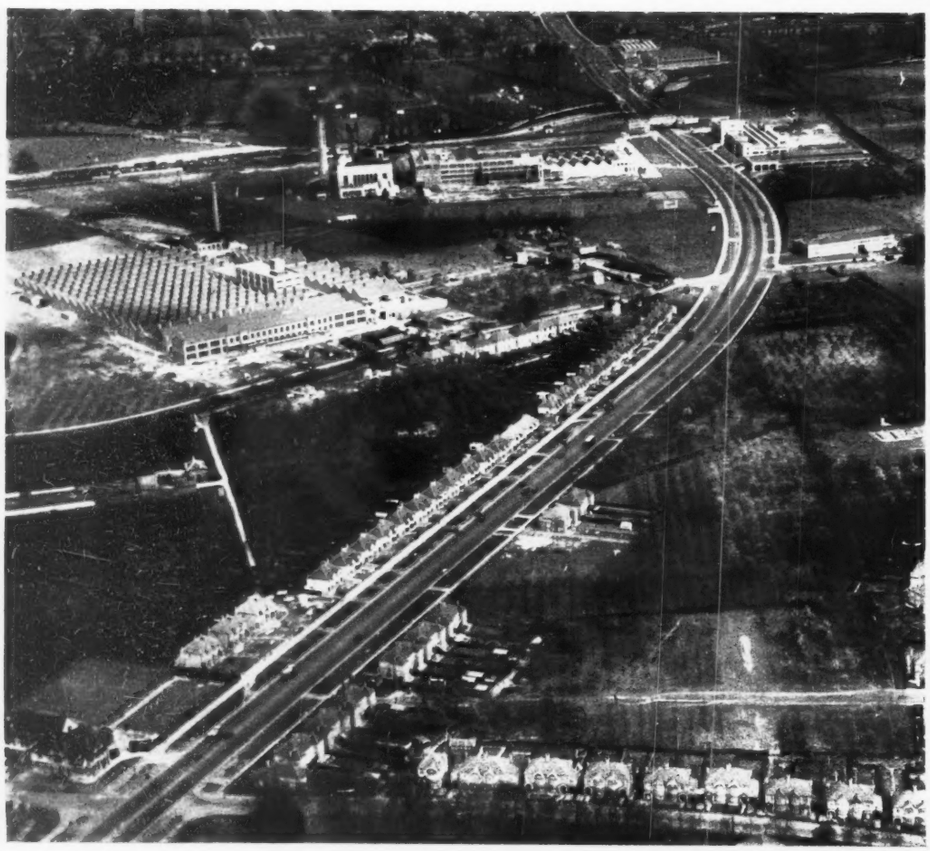
8. *Curve radii should be made as large as possible, 1,000 feet being a desirable minimum. All curves should be super-elevated.*

9. *For important roads and in normal circumstances gradients should not be steeper than 1 in 30.*

10. *Where street-lighting is provided the object should be to secure a uniform intensity of illumination over the whole of the carriageway surface.*

A Volume could be written round these ten principles, but here we are concerned primarily with the effect that these basic rules are likely to have on the appearance and efficiency of roads as objects of design. In this country 10 feet has been selected as the unit traffic lane and all two-lane carriageways are 20 feet wide and three-lane carriageways are 30 feet wide. The standard width for a cycle track is 6 feet, increased where necessary to 9 feet, and there should, of course, be two tracks. If we take the smallest carriageway width of 20 feet, allow 10 feet for future widening and add 15 feet on either side for paths and verges, we find that a total width of about 60 feet is necessary, and this is the minimum standard width which highway authorities can adopt under the Restriction of Ribbon Development Act. The maximum width which has been prescribed is 160 feet, which allows for two 30-foot carriageways, two cycle tracks, central strip, paths and verges. For most of the main roads, therefore, we may anticipate an eventual width of somewhere between these limits, and it is at once evident that great width will be the dominating characteristic of future roads. It is easy to realize how important this factor is when we recall that up to the present 60 feet, the maximum at which we have aimed on most Class I roads, has appeared wide, but that in the future it will be the minimum width for the less important main roads. If 60 feet appears wide, what will 160 feet be like? Road widening under these conditions virtually becomes new road construction, and whilst we may reasonably hope that existing trees and hedges will be preserved wherever possible, yet success will depend upon our ability to create rather than to preserve.

On wide roads tree- and shrub-planting is a matter of supreme importance, for not only does it



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The great new military road-system of Germany, the *Reichsautobahnen*, accepts the modern through motor-road as essentially a speedway. No traffic but fast motor-traffic is allowed on the roads, all the roads are double-track, and they are provided with all the accessories the speedway demands, such as fly-over crossings for minor roads intersecting them and pedestrian bridges. They also serve as an indication of the scale and relationship to landscape of the new through road. 1, a fly-over crossing in the neighbourhood of Munich. 2, on the road from Frankfort-on-Main via Darmstadt and Mannheim to Heidelberg. Similar roads, on an only slightly lesser scale, have been built recently in Italy. 3, near Florence: a concrete arch built to protect the roadway against materials falling from a cable rail overhead.

lessen the scarring effect when the landscape is viewed from a distance, but it also helps to reduce the scale to reasonable proportions as viewed by an observer on the road. There is a tendency (almost a necessity if only narrow verges are provided) to plant trees on the avenue *motif*, but this really seems to be the wrong treatment for the English landscape, for the straight, sharply-defined carriageways are in themselves a sufficiently disturbing element without any accentuation by long rows of trees.

The treatment of the central verge is an important matter in dual carriageway roads, for by planting a hedge or dense shrubbery it is possible to eliminate headlight glare between the two traffic streams. Obviously these shrubberies must be continuous, for fleeting shadows are worse than full glare, but the æsthetic result may be a rather unsatisfactory loss of balance, the road appearing to a driver to consist of a single carriageway placed lop-sidedly. The solution probably lies in making the central strip as wide as circumstances allow, interspersing the shrubbery with trees and also planting trees on the opposite verge as close to the carriageway as safety considerations permit. (See the illustrations of planting on page 176.) It is difficult to lay down any hard and fast rules for roadside planting; every yard of road is a problem in itself to be solved after consideration has been given to locality, soil and climate and any existing natural features, but generally the choice of large, slow-growing trees with spreading roots which might damage the traffic reservations, is to be avoided.

Effect, too, must be obtained within a reasonable time and the possibility of planting trees prior to road works being started is one worthy of consideration. Many years are likely to elapse before some of the road schemes now being planned are put into execution, and the planting of trees at the present time would not be expensive nor would it be a waste of money in the event of the scheme being abandoned. Roadside planting is not made easier by mechanical precision in the road layout; nothing, of course, should interfere with the proper alignment of the carriageways, but if full advantage is taken of topographical irregularities to vary the verge widths, to wind footpaths and cycle tracks in and out of the trees, to place the traffic reservations on different levels; and, if all odd pieces of land surplus to actual traffic requirements are included in the layout, then the planting of wide roads opens a vista of entrancing possibilities.

At the present time it is difficult to forecast the extent to which, in this country, we shall see the separation of fast from slow-moving traffic by the provision of special motor roads constructed on new alignments. The case for some new roads of this kind has already been made. One significant fact which may have a bearing on future developments is that we have already built a car which can travel at over 300 miles an hour (London to Edinburgh in seventy-five minutes) and, given suitable roads, manufacturers would probably not take long to mass produce cars capable of half this speed. However, looking at the question broadly, it is rather hard to see that in our small island the necessity or even room exists for more than a limited number of these roads, forming a super highway system connecting the most important towns and industrial areas. The chief features of such high speed roads would be their straightness and absence of interference from side road junctions and crossings. To form an idea of the way in which such roads can be made to merge into the countryside, we can hardly do better than to consider briefly the work which is being undertaken in Germany in the construction of the *Reichsautobahnen*. Many of the principles involved could, of course, be equally well applied to the multi-purpose type of road which seems likely to predominate in this country.

The new German roads are confined to motor traffic only and are being built for speeds of 112 m.p.h. They consist typically of two 25-foot carriageways with a separating strip 16 feet wide; the running surfaces are concrete and on the outside of each is a shoulder strip of bituminous macadam 3 feet wide, flush with the running surface. This macadam shoulder defines the edge of the running surface by reason of its contrasting colour, and at the same time provides an emergency running space for vehicles forced to the side of the road. Outside the shoulders are grass verges which are also flush with the running surface. The normal total width of the highway is 80 feet. This layout is not, of course, always adhered to, and where circumstances necessitate it, the width of the separating strip and marginal verges are varied, and carriageways themselves may sometimes be at different levels. The slope of low embankments is made as gradual as possible and on higher embankments the lower third of the slope is given a gentler gradient than the upper part with the object of increasing the appearance of stability and reducing the contrast of the bank with the surrounding country. In excavations the same principle applies, the top of the slope being cut back at a gentler angle, and in some cases rounded off. Whenever possible all drainage is put underground and the use of side ditches, which are difficult to maintain in a clean and tidy state and which form breeding places for mosquitoes, is avoided. The greatest care is given to the planting, from the storage and preparation of the soil to the choice of trees and shrubs, and it is interesting to note that arboricultural reasons determine whether on straight stretches the carriageways drain inwards to the centre strip or outwards.

The many bridges which occur on the German roads, both where the roads cross rivers, railways and other roads, and where they pass under minor roads and footways, is providing the builders with many opportunities for vigorous architectural expression. There is no toying with traditional

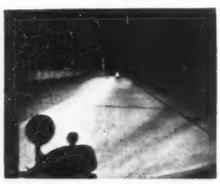
In the month of January, 1936, 448 people were killed as a result of road accidents. In January, 1937, 521 were killed.

"During the 40 years of the motor era, not one-half of one per cent. has been added to the mileage of roads that was extant in England in the reign of Queen Victoria. In that same 40 years the number of 'through' vehicles travelling has increased many hundreds per cent. It runs to millions. Counts of traffic on the road confirm one another in this, that there has been a continuous growth in the numbers of vehicles on them at the rate of about 35 per cent. every five years, and the rate increases. The contrast between the ½ per cent. growth of roads and the many hundreds per cent. growth of vehicles is a warning disregarded."

COL. M. O'GORMAN

The legacy of the railways. The planner of modern roads is faced with many obstacles put in his way by the railway engineers of a century ago, in the days when all roads were largely service roads: the narrow bridge, for example, that has somehow to be widened, and the dangerous level-crossing that has to be circumvented.

A vital factor in road-design, from the point of view of safety and of appearance, is lighting. An important principle has been found by experience to be the even illumination of the road surface itself, leaving no pools of darkness. Above, two photographs (by courtesy of G.E.C.) of the same stretch of road-way at Romford. Left, before the introduction of a diffused lighting (mercury discharge) system. Right, after; with all dark patches illuminated. A light colour for the road surface itself helps night visibility. Below, headlights picking out a car ahead by reflection off the road surface.



forms here—constructed in reinforced concrete or steel in straight girder or flat arch forms, the bridges have a strong horizontal emphasis and their long, taut spans are remarkably suggestive of the speeding lines of traffic which they carry.

It is impossible not to admire the boldness and comprehensiveness of thought with which the Germans are constructing these roads. In England, firmly convinced that we already have all the amenities we are ever likely to have, we get no further than talking of preservation; in Germany, realizing man's creative abilities, they set out to create amenity. However, the large questions of landscape and amenities are dealt with in detail elsewhere in this Supplement. Here we are concerned with how the road performs its modern function.

The treatment of important main road intersections is governed largely by consideration of expense. Where two important roads cross, the ideal solution is that known as the clover leaf (see page 159), whereby one road is carried over the other, curved ramps providing communication between the two and the speed of through traffic on either road is uninterrupted. This layout has been used in America and a modified example can be seen in Stockholm. Great expense and the very large area of land required are its disadvantages, and the Germans have evolved some interesting and less expensive adaptations of the principle for use on the *Reichsautobahn* system. In this country the few examples of fly-over crossings have been due more to the nature of the ground (one road, for instance, naturally lower than the other) than to any deliberate effort to avoid a straight crossing. A less expensive method of treating road intersections which has been widely adopted in this country and which is really very effective is the roundabout. For important roads the general opinion now seems to be that the central island should be circular and at least 150 feet in diameter with a surrounding carriage-way not less than 30 feet wide, and the layout of the roads entering the junction should be such that traffic, by having to make a sharp turn, is definitely checked in speed before joining the gyrating stream. The disadvantage of the roundabout is, of course, that it does check speed to about 15 m.p.h. and the extent to which fly-overs will be used in future in preference to roundabouts will depend, among other things, upon the necessity for preserving the speed value of the road. To prevent headlight glare it is not unusual to bank up the central island about 4 feet, but so far little has been done in the way of planting. An island 150 feet in diameter represents quite a large area of land, large enough for a grove of ash or birch trees whose light trunks would stand out at night.

One feature of modern road planning which puzzles many people is the way in which carriage-way widths are sometimes deliberately restricted. It frequently happens, particularly at forked junctions, that a very large open expanse of carriageway occurs, and it has been found that this tends to cause accidents by reason of there being no defined path for vehicles. The usual method of treatment of such a junction is to restrict the carriageway width and re-align the carriageway of the minor road so that it joins the major road at right-angles, with kerb radii of 30–35 feet. This arrangement is not only practical in defining the vehicle path and obliging minor road traffic to check speed before joining the major road, but it is also valuable in reducing the area of dead, dull carriageway and allowing the introduction of grass verges. An illustration on page 176 (the second from the bottom in the column of examples) shows a junction which has been treated in this way, the layout is clean and neat and the black and white kerb forms an effective edging to the carriageway.

It is unlikely that the wide roads of the future will continue at the same width where they are carried on bridges. Here, obviously, for reasons of economy, the width must be kept as small as possible, and, whilst retaining the traffic capacity unimpaired, the verges and separating strips must be cut down to the minimum. Aesthetically this is an advantage, for wide bridges only look well if the length is correspondingly great, and further, to the observer stationed above the level of the bridge, the sudden restriction of the wide road with its tree-clad verges to the narrow severer width of the bridge contributes an element of vitality.

"We know that the Minister of Transport has, in the August 1935 Report, found that the responsible cause of road accidents is to be ascribed to the 'human factor' of the road users, viz., 49 per cent. to pedestrians (largely children), 25 per cent. to motor drivers, 16 per cent. to bicyclists and 10 per cent. to various. These figures are the statistics of our trusted police, but the police in the absence of specific instructions to the contrary naturally accept the historic 'layout' of our roads as they would the geography of England. That, and the fact that we have 300 per cent. less roads per vehicle than any other country and no single through artery is outside their province to criticize. To them, not unnaturally, accidents caused by slippery places, obstructions or blind corners, etc., are the only ones ascribable to the road's condition; consequently they only ascribed to the roads 3 per cent. instead of the 78 per cent. of total accidents that were found in the Oxfordshire experiment to be due to road conditions when bad road 'layout' was included as a cause."

Col. M. O'GORMAN

The forms which the bridges of the new road system take will depend upon the extent to which the needs of economy oblige us to build in a straightforward manner with undisguised materials and to abandon our tendency to clothe steel and concrete in traditional trappings. Structurally, the arch will be retained for long spans, but that inherently simple and economical form of construction, the straight girder, seems likely to predominate for short spans, and it provides the obvious solution in the case of fly-over crossings where the difference in level between the two roads must be kept to the minimum. A probable new feature will be the construction of viaducts to reduce the gradients where the roads cross valleys, or to obviate the dangers and uncertainties of weak formations where the roads pass over marshy ground.

The secret of successful road lighting, from the traffic point of view, is the even illumination of the road surface so that objects upon it appear dark and are thus rendered conspicuous by contrast. It seems that this can best be achieved by overhead lighting, with the illuminant source some 25–30 feet above the carriageway. The present accepted standard of good lighting is that which enables traffic to proceed in safety at 30 m.p.h. without headlights. From the civic point of view street-lighting should illuminate more than the carriageway and should cover the whole of the road and forecourts and the buildings up to first-floor level. This should be sufficient for public convenience and policing purposes—the majority of people do not like their bedrooms floodlit, but so far there seems to be no arrangement whereby the illumination can be cut off from the buildings at first-floor level without causing additional reflected glare on the roadway.

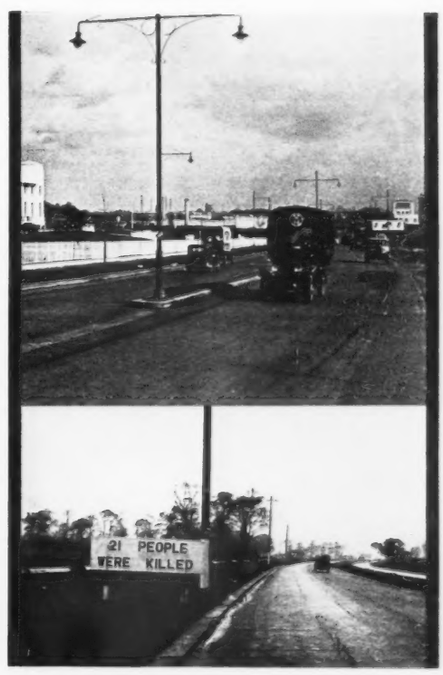
Modern lighting practice tends towards the use of electrical discharge lamps as opposed to filament lamps. Sodium discharge lamps give a warm yellow-red light, mercury discharge lamps a green-blue light. Excellent as are the latter for traffic purposes, they have the unfortunate effect of imparting a ghastly livid greenish-blue hue to the human features.

Lighting standards are usually staggered on either side of the road, lanterns overhanging the carriageway by about 6 feet. Central lighting of a carriageway is expensive to instal and seems to increase the reflected glare, but it has to be adopted where there are trees overhanging the road. A dappled light is pleasing on a footpath, but must be avoided on the carriageway where anything in the way of shadows or pools of darkness is a source of danger. Lighting standards along one side only of a carriageway can be made to function satisfactorily and this is probably the solution to the lighting of dual carriageway roads, standards being erected along the central strip with balanced arms projecting on either side, smaller standards with filament lighting providing illumination for paths and forecourts.

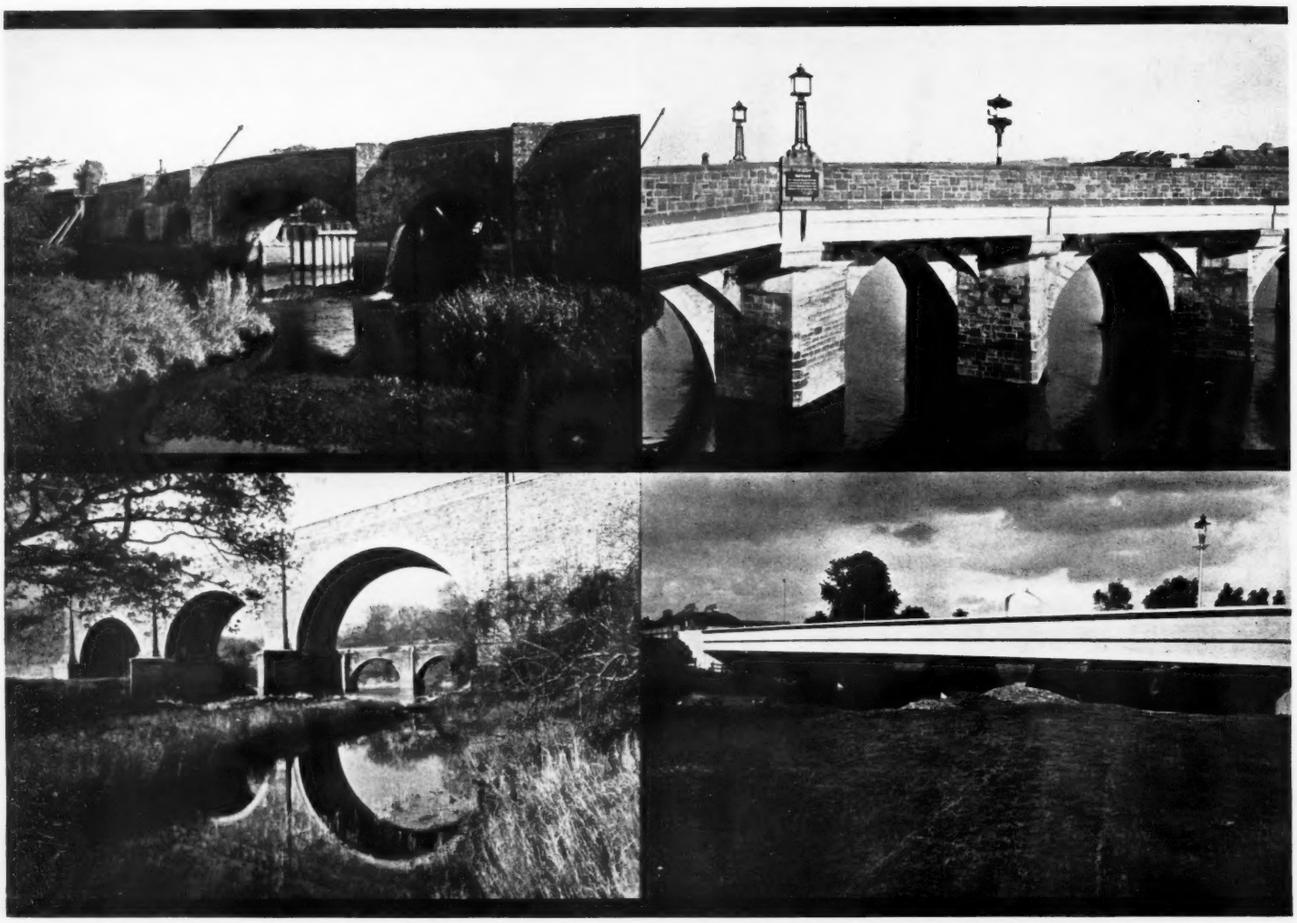
The problem of road development in towns is one of great difficulty. In the majority of large towns the main street is not only the principal shopping street, but it is also the through-traffic route, and the congestion arising from the dual use is a very serious matter. The most important palliative is the construction of a by-pass to remove the greater part of the through-traffic, and further relief can be obtained by regulating or prohibiting waiting vehicles, constructing parking places and installing traffic signals. In many towns, however, even where all these measures are in force, the congestion still remains so serious that one is forced to the conclusion that the only remedy lies in drastic street widening. In the present state of affairs few local authorities seem willing to face up to the task of widening a main street, and the most that is done

"In the past it was the duty of Local Authorities to arrange for roads suitable for local distribution of local goods to local people. They did their duty. They built up our network of roads and road junctions as we know it, so that it properly connects the dwellings, etc., in the countryside to the market, or the church and one another. This was, and is, a network of 'service' roads. Only a slight inconvenience (balanced by an appreciable economy) was caused by such 'service' roads often being tortuous; so far as they are so, it is to avoid hills and the 'severance' of countless bits of property, by circumnavigating them. Today these very roads are still necessary as 'service' roads and must continue to perform this their long-established function. They achieve this purpose by passing close to the house doors and the shop doors in the main streets of the various hamlets, villages and townlets they pass through. On occasion they even pass through farmyards. Their primary purpose was never to carry 'through' traffic."

COL. M. O'GORMAN



The awful warning of the Great West Road: the tragedy of insufficient foresight. The Great West Road (upper photograph) was built to be the last word in modern traffic routes. Before long the necessity of a double track arrangement became apparent and a dividing strip was laid down with the result that each carriageway is far too narrow. Lower photograph: can this notice be taken as official admission of another similar tragedy? It occurs on the Southend road, only recently built as an up-to-date arterial road.



Old bridges present a problem that the road engineer often meets. This country is peculiarly rich in beautiful bridges of all periods, that are now inadequate for the modern purposes the roads they carry have to serve. While the mere preservation of something antique is seldom the best policy, these bridges are often of sufficient value as monuments to our past to be worth going to some trouble not to destroy. One fact has proved itself: if it is not possible to preserve an old bridge whole, it is seldom worth preserving it at all. The first picture (top left) shows a fine old bridge scheduled as an "ancient monument" but soon to be "preserved" by doubling it in width. Will the character of the bridge remain? The next photograph shows the unhappy effect of this method of preservation. Below are two legitimate alternatives: a new bridge built alongside the old, harmonizing with it in scale and material; and a frankly modern bridge, as representative of this century as the old one was of its own.

is to take advantage of any rebuilding operations which occur to set the frontage back a few feet. It is difficult to foresee any change in this attitude as long as widening remains on a basis of compulsory acquisition and payment of compensation, but one is tempted to speculate whether the time is not far distant when the danger, crowded footways, noise, traffic blockages, stench of exhaust gases and general inefficiency of main streets will be tolerated no longer, and they will be widened by mutual co-operation between frontages and authorities. Such a proceeding would obviously radically alter the character of our towns: it would give us the chance to turn narrow, crooked streets with tall buildings into broad thoroughfares with ample footpaths, parking facilities, trees, flowers and grass, and fronted by buildings planned for their purpose where to shop or work would be a pleasure. That mediæval atmosphere, nowadays so often merely superficial and apparent only when the street is viewed along its length with half-shut eyes, could be turned into real architectural achievement.

Roads, like every other form of municipal undertaking, are only a means to an end, the end being to make the country a place where man, in work and play, can live his life to the full. It is very important, therefore, that we should preserve a proper perspective and ensure that the sacrifice to traffic is reasonable and that the value of the achievement outweighs the value of that which has been destroyed. In Bristol, for example, there is now under construction a new internal by-pass cutting through a densely built-up area of drab warehouses and commercial buildings. Situated in the centre of this area, like an oasis in the desert, is Queen's Square, a large open space bordered by a double row of plane trees, a place where children can play and men can lie on the grass and forget the stress and turmoil of life around them (see page 176). So great, however, are the demands of traffic that the new road, 80 feet wide, is to sweep across the square from corner to corner, and even now the picks and shovels are at work. This is not intended to be a harsh criticism of the scheme, the case is only mentioned as an example of the kind of sacrifice that we are having to make in the interests of traffic; whereas this sombre part of Bristol was once relieved by St. Mary Redcliffe and Queen's Square, now alas, it has only St. Mary Redcliffe, and it is a matter for profound regret that replanning, which might have made so fine a focus of Queen's Square, should have been obliged, as a first step, to obliterate it.

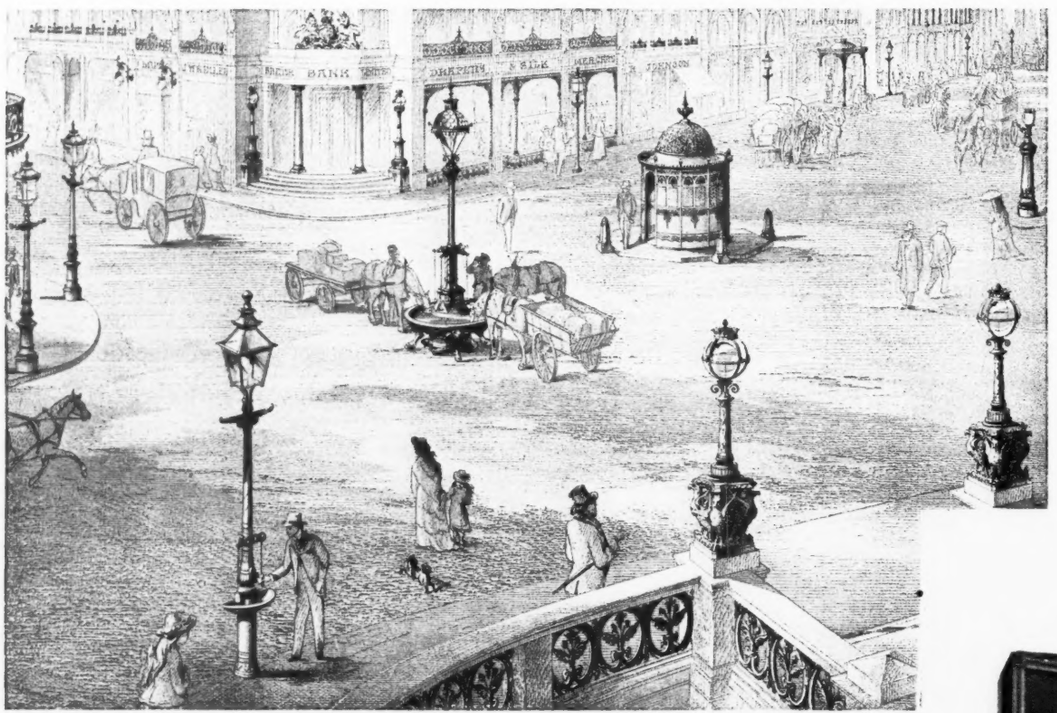
In our small country, which has suffered more severely than any other in the world from the depredations of uncontrolled industrialism and commercial vulgarity; where, for a century and a half, the contributions to civic dignity have been pathetically few, and where the right use of leisure is likely soon to become one of the most critical questions of the day, it is a matter of supreme importance that we should safeguard the amenities already existing and avail ourselves of every chance of adding to them. Few activities provide as many opportunities for the creation of agreeable surroundings as does that of road construction, but at the same time, few are set with as many pitfalls and few, if wrongly handled, can produce such terrible and lasting damage.

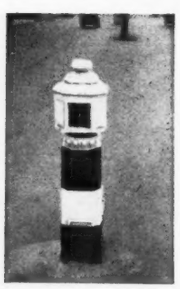
The aerial photograph below, taken on the Great North Road near Welwyn, suggests how the great trunk road of today, far from being an unnatural imposition on the landscape, an evil to be put up with as inevitable, can provide fine scenic effects of its own, can contribute something new and alive to a landscape that has always lived by change, and conform at the same time to the traditional park-like character (superhuman but intimately humanized) that belongs essentially to England. The great through road, itself a new idea, is new; the old service road is seen winding across the left-hand side of the picture—a necessary separation that we are only now beginning to insist on. By way of contrast is shown, on the right, a section of the Kingston by-pass between Hinchley Wood and Tolworth. Here the two functions of the road are wretchedly confused: domestic building, and the local use of the road which that involves, clashes

fatally with the use of the road as a speedway; the land is unplanned and ugly, the scale of the road indeterminate. Result: here, towards the end of last year, 102 accidents took place in four months.

ROAD ACCESSORIES: THE WRONG . . .

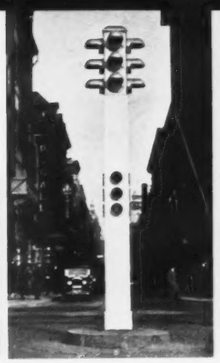
The design of road accessories is a most important branch of road architecture. The modern high-speed road, of large but simplified scale, demands design not only good in itself but agreeing in character with its modern road setting. The specimens at the top of this page represent recent designs from different parts of this country — designs created in the twentieth century. The thatched telephone kiosk comes from Eastbourne; the lamp standard from London is typical of the more imposing municipal taste; the third example is a petrol station on the Oxford-Henley road.





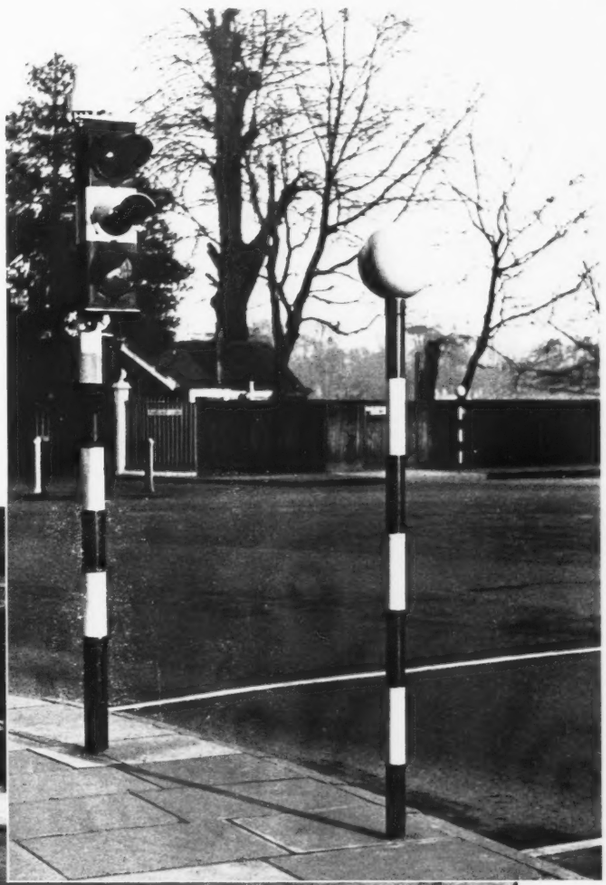
Some cautionary examples. Above, left to right: an untidy accumulation of signs—a common sight where any number of authorities are independently at work; a modernistic specimen from one of the new German autobahnen, an example of misplaced monumentality; the black and white idiom praised on the facing page loses its virtue in an ungainly design; and a ludicrous example of the necessity many authorities seem to find of decorating even the satisfactory traffic light—here with a realistic flambeau on top. Right: adaptation is not enough: an ordinary old-fashioned post awkwardly converted to modern use.

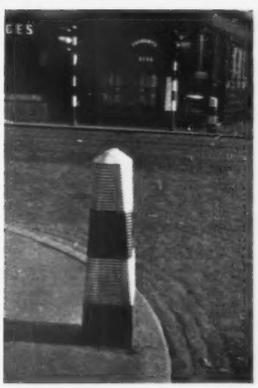
Right: the most unfortunate of all the recent official contributions to road appearances: the standard and ubiquitous London "one way" sign; over-elaborate and arty, to be contrasted with the simple elegant machines opposite.



By way of contrast with the examples on the opposite page, the specimens of road accessories above set a respectable standard of modern design. The petrol station this time is an Italian one, near Padua. Next is a good concrete traffic-light column from Copenhagen, and one of the lamp standards outside the Stratford Memorial Theatre (Scott, Chesterton and Shepherd, architects). Finally, a glass and metal telephone kiosk in Berlin; a great improvement not only over the thatched eccentricity illustrated opposite, but over the dim classical compromise of the standard English design.

. . . AND THE RIGHT IDEA





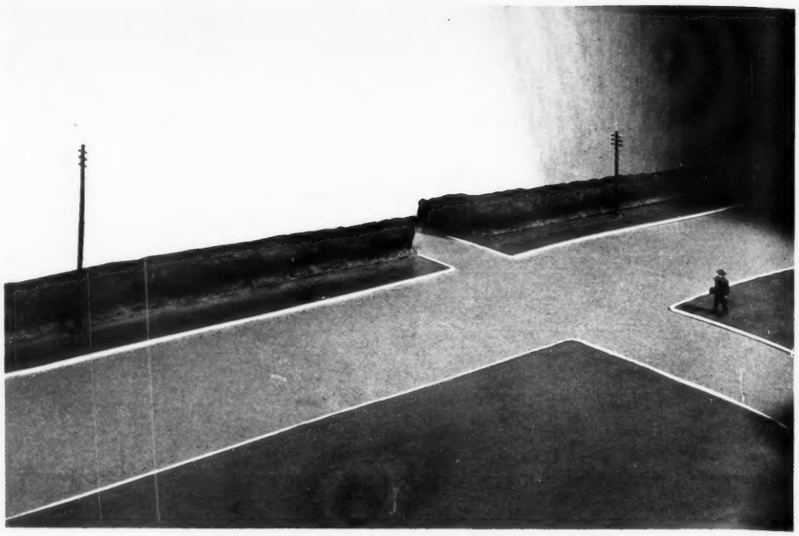
In our search for a true modern idiom for road accessories we do not have to look far to find the germ of it in the familiar black-and-white posts, traffic-lights and beacons. This black-and-white idiom is based on the need for maximum visibility, but at the same time it has, when not compromised by added ornament, an elegance well in accord with a modern æsthetic. Furthermore, it belongs to the historic English tradition of bold black and white design that has hitherto occurred chiefly in nautical contexts. The post in the bottom right-hand photograph is an old, not a modern, one, and demonstrates the continuity of the tradition. Signs painted on the road adhere to it also.

The right note of appropriateness and elegance for the design of road accessories has already been set on the roads by the best modern vehicles: the latest models of omnibus, tramcar and trolley bus.

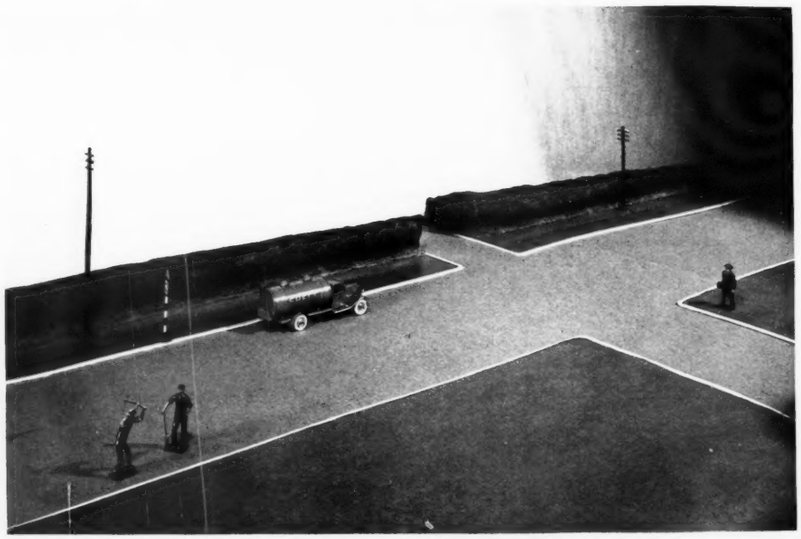
THE BRAKE'S PROGRESS

OR CHAOS AT THE CROSS-ROADS

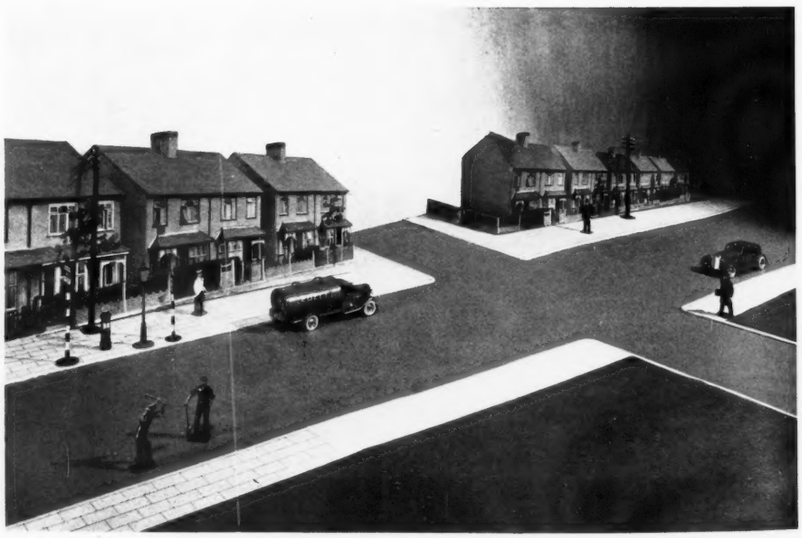
Scene one. The simple country road, bordered by grass verges and lined by hedges. Only a couple of telegraph poles serve as reminders of the towns or villages which it links together. A minor road crosses it. A solitary pedestrian.



Scene two. Traffic on the road. A danger sign erected on the grass verge suggests the growth of traffic. Workmen arrive: the town is coming nearer and the locality is ripe for development. The road is altering, as well as enlarging, its function.



Scene three. Development has taken place, as it were, overnight. Pavements supplant the grass verges. Evidence of the local services of which the road is now a part: street-lighting, a pillar-box, the milkman on his rounds. Additional traffic.

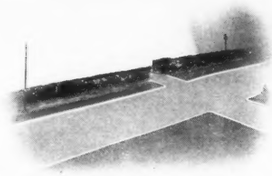


Scene four. Traffic increases: a bus stop appears, together with more warning signs. The petrol station arrives to meet a new demand. The cross-roads become for the first time a problem on their own: an A.A. scout on point-duty.

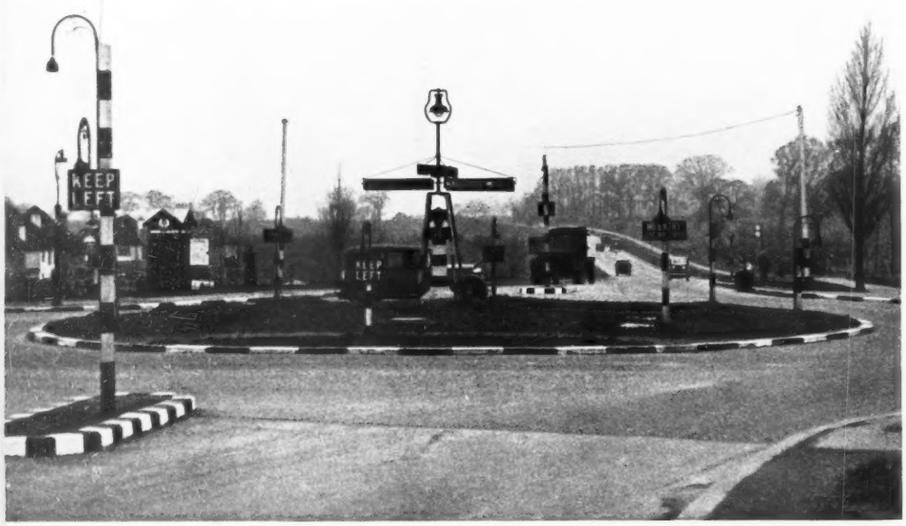
Scene five. Busier still. More lighting needed: central lamp-standards on islands. The need for control realized: a policeman replaces the emergency scout, and a speed limit is imposed, with beacons to mark pedestrian crossing places.

Scene six. The furnishing of the road complete. Traffic lights installed. Signs and accessories everywhere, on the road surface as well. But their multiplicity by now quite defeats their purpose. Chaos and, inevitable arrival, the ambulance.

COST. "In 1929 it was estimated that the cost to widen the Boston Post Road from 66 to 166 feet would have been over one million dollars a mile for the land alone, whereas to purchase lands for the Hutchinson River Parkway, having an average width of 500 feet, cost an average of 264,000 dollars a mile. A still better example may be cited in the case of the Albany Post Road, in the same county. To widen the Albany Post Road, in 1929 from 66 to 166 feet was estimated to cost 792,000 dollars per mile. Lands for the Saw Mill River Parkway, averaging 500 feet in width and paralleling the Albany Post Road at a distance varying from 1 to 2 miles cost at the rate of 138,600 dollars per mile. In other words, the cost to have widened the Albany Post Road would have been six times the entire cost of a 500-foot parkway."—REGIONAL PLANNING, PART III—NEW ENGLAND (U.S.A. National Resources Committee).



One of the most unfortunate results of the need for more and more elaborate control as traffic gets thicker on roads that were inadequately planned to take it, is the multiplicity of signs, notices and signals, each representing a separate attempt to help and instruct the unfortunate motorist but without co-ordination between the various authorities responsible, so that the final result is only bewildering, besides producing a scene like a battlefield or "special area." The cautionary series of pictures on the previous pages shows in its simplest form the process of accumulation of this multiplicity of accessories. Here are two real examples, one Tibbett's Corner, Putney Heath, the other an intersection on the Kingston by-pass. Each displays a really remarkable collection. A recent count at Tibbett's Corner (though of course the collections are added to almost weekly) revealed the following: 11 Belisha beacons, 11 lamp standards (of three different designs), 13 "Keep Left" signs (10 with flood-lighting apparatus attached), 8 direction signs of different sorts, 4 assorted notice-boards, 1 large "roundabout" island with a decorative pole in the centre and 6 small islands, 1 telephone box, 1 police box, 1 fire-alarm, 1 pillar-box, 1 milestone, 1 seat, numerous small posts and trees and the remains of a horse-trough.



Objection is often taken on æsthetic grounds to the advertisement hoardings that line many of our roads. But even when, as in the top two photographs above, the hoardings are neat and orderly, there is another good reason for controlling them: their power of distraction. Advertisements are designed to attract the eye: by doing so in a position such as this, they tend to take the motorist's concentration away from the skilled task of safe driving. The third photograph above and the two below show another reason for control: important traffic signs obscured by their background of advertisements and multi-coloured lights. In each of the photographs below there are traffic-lights that ought to stand out clearly and simply.

"AMENITIES. The Minister specially desires that every care should be taken not merely to safeguard existing amenities but to add to them. The beauty and interest of the countryside depend largely upon the preservation of ancient cottages and other picturesque wayside buildings, and in studying the alignment of the road, the effect upon amenities should be carefully borne in mind." — *The Ministry of Transport's "Memorandum on the Lay-out and Construction of Roads," 1937.*

The wayside cottages of which the Minister speaks are many of them worth preserving, but preserving intact, still functioning within their ancient setting. When their setting is converted to a new function they are only spoiled and their charm submerged in the accessories of that function. An even more important problem is to create equivalent charm in the new roads that serve the new functions.

PROBLEMS OF APPEARANCE

By J. R. Hilton

"In the meantime let us qualify for the material improvements that must ensue by a better psychological attitude towards the actual advantages we have . . . There are societies concerned with saving the amenities of Nature from destruction. Human life must also be preserved."

These words of the Minister of Transport expose a danger and suggest its remedy. The danger is in the assumption that good, safe roads can only be obtained through the sacrificial destruction of æsthetic values. The remedy is a better psychological attitude towards both actual advantages and possible creations.

The assumption that, in imposing a great engineering work on the face of Nature, we are necessarily destroying scenic values, is without basis and contradicted by facts. Is the suggestion too far-fetched that beneath this attitude lingers a remnant of the processes which have always prompted sacrifice; the feeling that the work cannot prosper without compensation to the infinite, the feeling that tenderness is dangerous to pride, the faintly pleasurable regret for the fair victim, the distinct exultation in ruthlessness applauded by conscience? At any rate, whatever its springs, the attitude is one to which we are all prone, and is a danger, not only to our immortal souls, but to the work concerned. For the belief that the work is essentially destructive, on a large scale, of scenic and sentimental value, must inevitably discourage zeal for making the most of opportunities in detail. While the knowledge that any great and honest engineering work can be fine in itself and in relation to the country in which it is founded, will go far to inspire care in the detail both of its elements and of that relation.

This defeatist belief that civil engineering is destructive of beauty is perhaps not so much the fault of the engineers—who, left to themselves, would mostly rejoice in the grandeur of their works—as of those well-intentioned people who resent the destruction of a field, a hedge and an old cottage to build a road, but cannot see that they should have equally resented the destruction of a forest to make the field, of a common to plant the hedge and of a marsh to raise the cottage. If they are logical and say the wilder the better, we can thoroughly sympathize and ask them to direct their energies to obtaining national parks rather than a half-hearted ribbon-preservation on a window-box scale. If they are illogical and say "it is all very well up to a point but now we must draw the line," we can only suspect them of accepting an inheritance the dynamics of whose formation they have failed to understand. There are different beauties.

It is not after all so great an imaginative effort that is required in the present case. Nothing so novel is involved as in the case of the electric grid, which proved such a touchstone of true scenic understanding. The road has long been a familiar and welcome element in the landscape; and ways much more "unnatural," much more the products of engineering, have long been accepted and, by many, loved. Think of the canals. What could be more artificial than gashing the countryside with a trough of water changing level only by jumps. Yet there is nothing more charming in England than the average canal lock. And the railways. No more horrible violation of Nature could be imagined. Yet how agreeable we find the plume of smoke or chain of lights threading the distant prospect, and how difficult on nearer view to feel anything but admiration and even affection for the express thundering across the embankment,

The ancestor of all long-distance roads: an ancient Roman road, engraved by Piranesi.

Roads in England are probably ugliest at the approach to a town, where "mining-camp" scenery indicates the outward growth, usually unplanned. Sometimes, however, the town begins with honest urban building which (as in the lower photograph), poor as the architectural design may be, does recognize the town's proper characteristics.

shaking the very roots of the primroses among which we wander.

These things have lived through hostility to become subjects for painters, to become friendly, to become essential ingredients of the loved landscape. There is nothing to be afraid of in roads if we do not make them in fear. Make them boldly and make them real roads leading from place to place, not clothes lines for the dirty linen of estate development.

Any track or trace running beyond sight breaks a bound for us and is moving. "Oh, yes," says the *rentier* of the accumulated past, "but isn't there a faint difference between the romantic pack-horse track or the coaching turnpike and your velodromes for a generation which moves along by bursting gases in whirling mazes of metal?" Well, as a matter of fact there is not much difference in principle. All these vehicles need a surface which is not the surface provided by Nature; they all prefer bridges to fords, and gentle gradients to steep. They may all serve the best and basest purposes. And if the objector will not see that a motor-road may be as fine in its way as any other, he must be content to acknowledge that the motors are here and that they are better on their own track than on that of the coach or the pack-horse or the rolling English drunkard.

So the first thing to remember is not to be afraid, not to be rattled into the defiance of saying "better a blow in the eye for the landscape lover than a child run over." This is true, but quite irrelevant. There need be no conflict. Most landscapes which may be affected in this matter are already through and through the work of man; and a fine road, undertaken with faith, can be as splendid a work as any.

When the Society for the Preservation of the Amenities of the River Garde heard of a project to carry a town water supply from bank to bank of one of its grandest and most desolately beautiful gorges, it raised a very proper outcry; but without avail. So it went fishing elsewhere and never saw the Pont du Gard.

The visual lay-out of roads is not a problem distinct from that of design for safety, but to a large extent identical with it. Distraction, confusion and exhaustion of the eye create a dangerous situation. At the opposite pole unbroken monotony causes a dulling of the senses and instability of the will. Freshness and harmony are not external irrelevant factors, but the vital attributes of an environment which is stabilizing and invigorating to the whole physiological and psychological apparatus; on the finer workings of which, good driving depends.

A spring balance is least accurate towards zero. Human senses also need to be to some extent in tension before serving accurate judgment and precise action. In conditions of monotony and perfect symmetry they become entranced or erratic. It is therefore encouraging to find in the Ministry of Transport's latest memorandum two warnings against the production of such conditions. "It is not always desirable to plant in avenue form . . ." "A continuous row of shrubs of even level may become monotonous. Small trees should not be planted in a straight line along the central reservation . . ."

Substitute "scarcely ever," and "must" for "not always" and "may" to obtain axioms of great value. An avenue should be thick-set and narrow and should lead up to something of importance. At the approach to a town an avenue might be suitable if the trees were close enough and big enough, though the necessary width would diminish the effect.

On a wide road in the open country an avenue merely produces the effect of a suburban street which has temporarily outstripped its suburb (see the drawings on page 177). And it has all the disadvantages of monotonous symmetry. Far better would be to plant the double number of trees on one side of the road only, in irregular formation. This would make a better wind-break and give greater scope for winding footpaths and cycle tracks among the trees. (In the open country would not one footpath be enough? And would there not be some advantage in keeping both cycle tracks on one side of the road? This would halve the intermingling with other traffic at junctions. And the pooled strips of grass or plantation would make a pleasanter place to walk or cycle in.)

Painters have always been fond of roads turning in front of trees. The road gains life as it swerves, acknowledging the living obstacle. A clump on the outer side of a curve is always welcome; it closes the line of sight down the straight and helps to indicate the bend by day and night.

The problem of shrubs is more dangerous. Trees can never be wholly vile. Shrubs can. Laurels and similar camp followers of the estate developer must be taboo.

On cuttings and embankments where bareness in winter is only proper, the ordinary things, thorns and gorse and bracken, wild roses, and heather where it will grow, are worth considering.

The Ministry of Transport has called attention to the possibility of using earth or turf banks on the outer edges of embankments and hillside roads, where they give more protection than fences. They also look infinitely better; and should always be given preference wherever possible, particularly in bare country. Where a concrete post and wire

"It is now admitted by most people that the motor-car has passed the limits of mere experiment, and that it has become a practical vehicle. Motoring has already entered, and will in future enter yet more largely, into our social life, though we may still be far from the time when the horse-drawn vehicle will be a rarity upon country roads and London has begun to save fifty thousand pounds a year now spent in road scavenging. . . That the motor-car has come to stay is a commonplace, but few can foresee what a change it will make in our economic, political, and social life. I believe that the revolution worked by railways is a small thing compared with the revolution to be produced by the motor-car."

J. SCOTT-MONTAGU, M.P.,
in "Motors" (The Badminton Library), 1902

"... roads under the Trunk Roads system will constitute speedways for rapid and direct travel and relief and softening will form no part of the programme. To hamper the work by any consideration of the amenities would mean defeat of the object for which they are to be constructed . . . modern conditions call for modern methods, and landscape architects will, we fear, play a very small part in the future development of the highway system."

THE SURVEYOR (*leading article*)

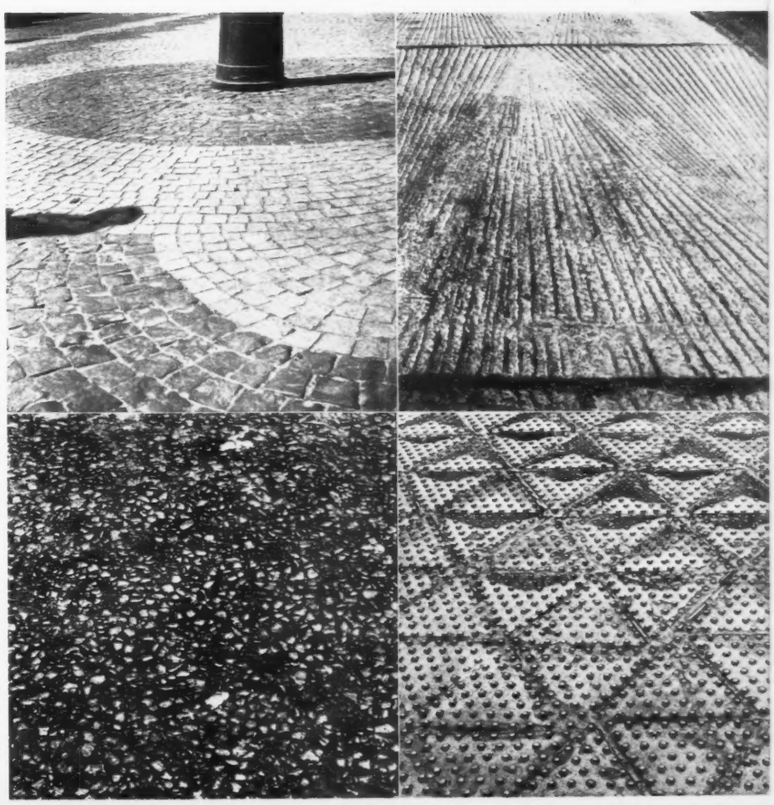
"Our conception of tradition has led us to the conclusion that, inevitably, we must hand on as well as receive. Immediately we are under the necessity of deciding what we shall hand on. What indeed? Shall it be nothing but a tale of vulgarity and an ever-diminishing supply of 'beauty-spots'? Surely our civilization has something to offer us out of which we can create new beauties, not only in spots, but generally throughout the land. At least it is necessary for us to believe that it has, and to this end we must learn to know our civilization. Meanwhile we may take heart from the knowledge that that this is not the first time in history that the Englishman's world has, so to speak, tumbled about his ears."

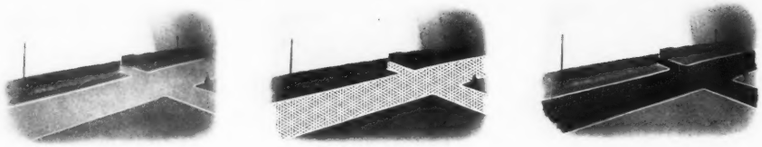
W. A. EDEN

The greatest change that motor-transport has brought to town or country scene is the purple tar-mac as standardized substitute for the local road-surface. The familiar shiny asphalt is at its most characteristic on a wet London Sunday, when the road-surface is occupied by the ghosts of elevations upside-down. Above, Georgian Westminster.

There are, however, some pleasant possibilities in the textures and colours of modern road-surfacing materials, and some quite the reverse. Right, four close-ups: granite setts laid fanwise (Ealing Broadway); anti-skid surface—concrete, fanwise-textured (Coventry Road, near Dunstable); the not very attractive coarse bitumen and chip surface; and steel setts as now laid in the City of London.

On the facing page: the pictorial and spatial quality of the road-surface brought out in a photograph by Moholy-Nagy.

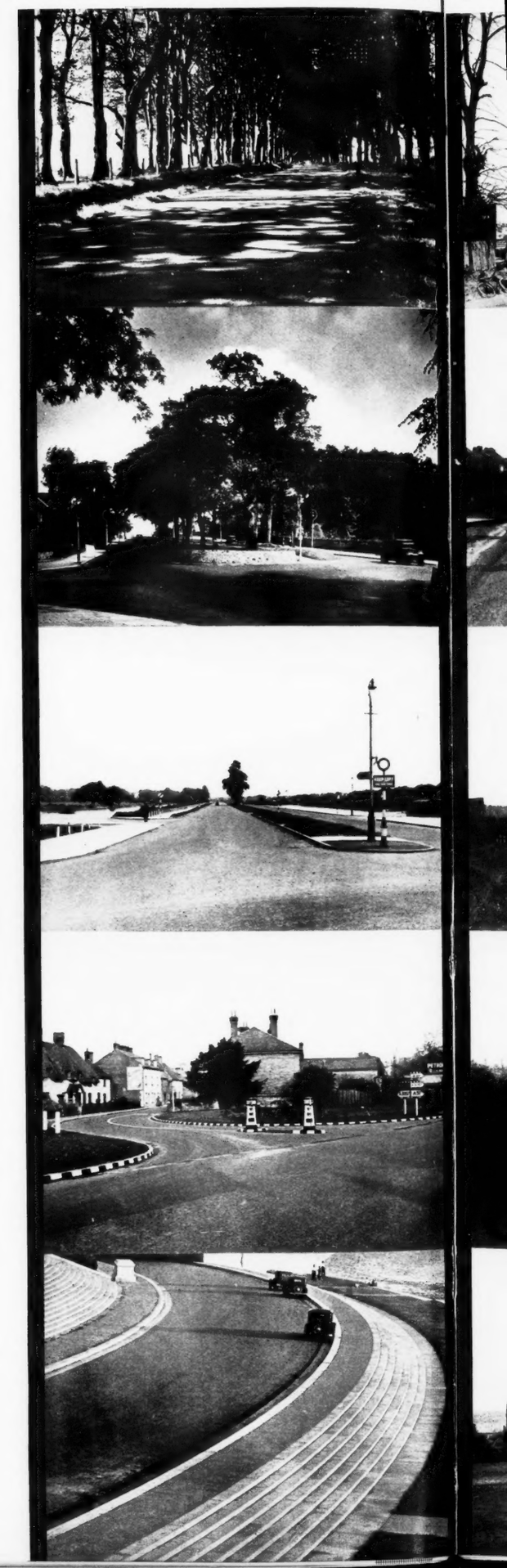




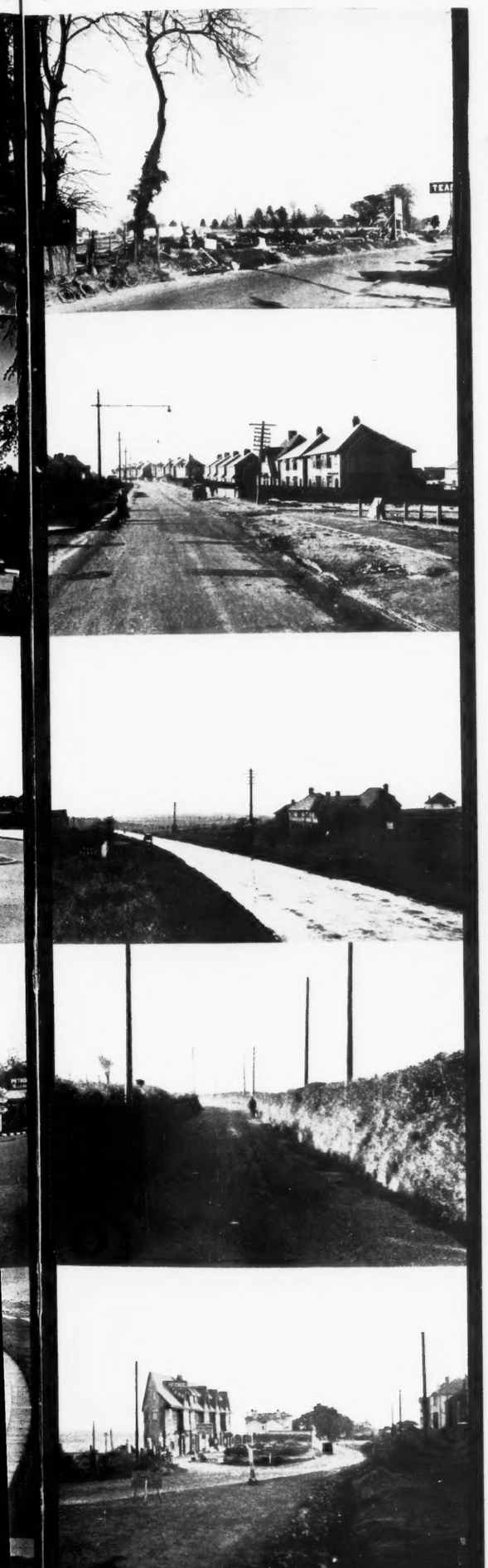
The surface colour and texture of roads more drastically affects the scene—strikes the key-note of the new or radically alters the old—than is generally realized. These diagrams suggest the change of values brought about on the normal country road by a change in road surface to textured paving, dark smoothness (as in the familiar purple tar-macadam) and staring white (as in new concrete).

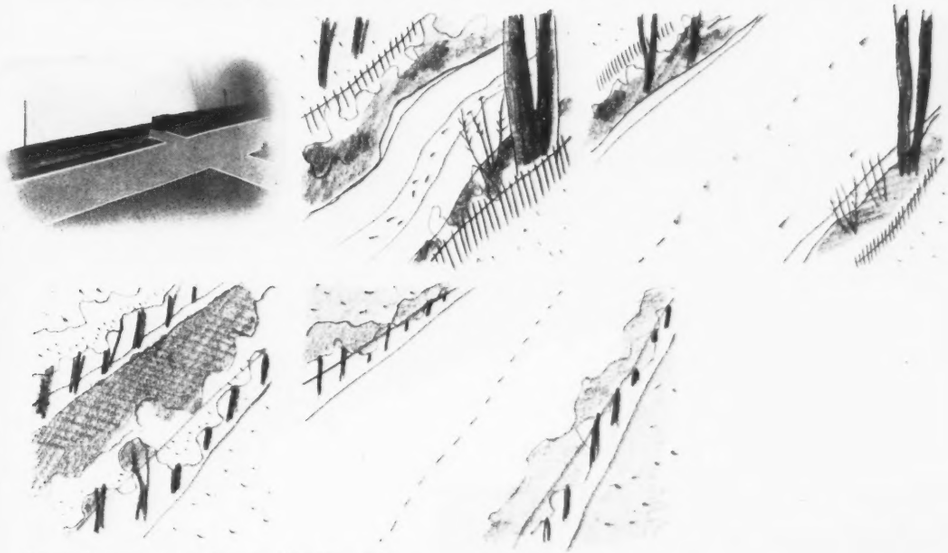
The open road. The view into and across the landscape is the most valuable "amenity" the country road possesses. It must be studied and made the most of. The humanized but informal nature of English landscape does not demand the vista along the road (the avenue should be used only to mark the approach to a focal point) but demands the oblique vista: diffused in kind, as in the landscape view above or of more concentrated kind as in the park-like scene on the facing page. The hedge or fence beyond which the landscape is seen can make or mar it. It should, where possible, partake of the character of local vegetation and agricultural practice, as above.

It should hardly be necessary to caution against the wanton cutting down of trees along the country roads (left); and still more is it important to preserve them in the town, where their value, by virtue of their rarity, is even higher. Lower photograph: Queen's Square, Bristol, where it is proposed to drive a new arterial road straight through from corner to corner.

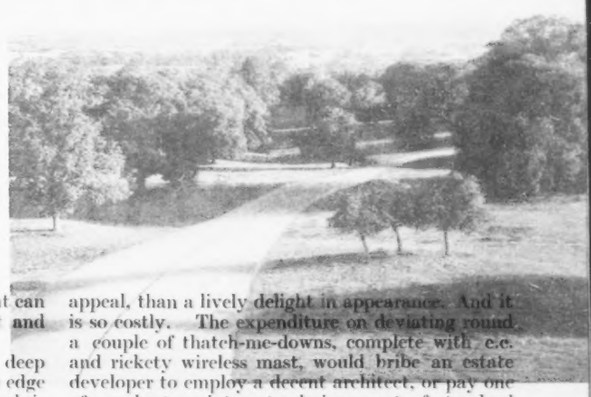


. . . . AND OFTEN ARE. ALSO COMMON SENSE IN PLANTING





Grouped trees, according to direction and contour, accord far better with the park-like scale of the new roads, as on the right, than the conventional planting of symmetrical avenues. The drawings above show the absurdity of the latter practice. Top row, an ordinary country lane, lined with trees and hedgerows, and the same trees and hedgerows either side of a wide modern road. Bottom row, an ordinary suburban road with trees equally spaced on either side, and the same trees entirely out of scale when separated by a broad strip of modern roadway.



fence has to be resorted to, the only advice that can be given is "make the posts twice as stout and twice as far apart."

Where a fence is placed on the bank of a deep cutting it should be kept as far back from the edge as possible. On the other hand where the bank is low the fence is best placed at road level, the bank being cut back a few feet if necessary.

The Ministry of Transport has some other good things to say. The need for considering the natural characteristics of each district is properly emphasized. The elimination of redundant signs is urged. The possibilities of dealing with disfiguring advertisements and of securing dignified architectural treatment at junctions and roundabouts, are politely referred to. But the new Memorandum begins its section on Amenities (members surely of the frigid family which includes the Proprieties and the Decencies) with the statement that "the beauty and interest of the countryside depend largely upon the preservation of ancient cottages and other picturesque wayside buildings . . ."

Official recognition that appearances matter is so rare that it may seem ungrateful to carp. But a palace approached only by a cart-track is no sillier than the embalmed and pensioned cottage oozing snacks on to an arterial road. A street of Georgian houses is another matter. The tragedy is that a morbid antiquarianism is so much commoner and so much easier to propagate by snob-appeal, than a lively delight in appearance. And it is so costly. The expenditure on deviating round a couple of thatch-me-downs, complete with c.c. and rickety wireless mast, would bribe an estate developer to employ a decent architect, or pay one of our best sculptors to design a set of standard signs to be cast in aluminium.

Our signs have a simple homeliness that appeals to our boyishness; they are part of a great game of toy trains, survivals of the days when motoring was a joke. The L.P.T.B. has grown up, but the Ministry of Transport is not yet old enough to be a pupil-teacher in this matter. Their recently-issued sign for bicycle tracks (see page 178) appears to have lifted the picture from a catalogue and the word from a double-acrostic, so oddly spaced are the first and last letters.

The variety of poles that sprout along roads is barbaric. A greater uniformity of colour, if not of materials, should be easily attainable.

Where a choice of surface is possible, let the neighbouring country or buildings or the local characteristics of connecting minor roads have full consideration. Where concrete is used let an expansion joint of similar colour be found. Let the wilder suggestions for coloured concrete pass by; but find some way of avoiding the dead glare of crude concrete. Avoid patchwork.

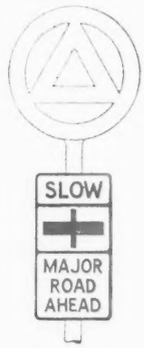
Agreement seems general that the surface of the road should be non-reflecting but light in colour. This being so, the most careful consideration should

The left-hand column of photographs shows the margins of the road treated in a decent, orderly and appropriate manner: an avenue of fine trees (a legitimate occasional motif): a wide strip well planted, separating the carriageways on a double-track road: a more sparsely planted road with individual trees serving as punctuation: the replanning of a road junction to make a right-angle entrance, neatly carried out: and, an urban example, neatly designed margins to an American park drive. The right-hand column shows, by way of contrast, unsightly and disorderly margins: "improving" a tree-lined road: ribbon building near Dunstable: undefined margins, shacks and shanties in the same neighbourhood: a forest of poles ruining a country road: and the first glimpse of the sea on the approach to a Devonshire town.

be given to the method employed on the new German motorways of defining the edge of the track by a dark strip of asphalt or tarmacadam. The advantage in appearance over a continuous line of narrow white curb must be enormous. And this is a case where discomfort of the eye may seriously impair efficiency. It is well known that a hen placed on a white line is frozen in complete hypnosis. With the lighter road surfaces, there would be as sharp a contrast with the black as with the white for defining the edge at night. With concrete roads the contrast would be much sharper. Yet all the experts in this country appear to favour the light curb. The Germans incidentally appear to do without a curb altogether. This eliminates a danger and, in country or parkland, an unnecessary imposition.

The offensiveness of much of our road systems is due to factors which are incidental to the road itself; to filthy "development," to advertisements, to shop signs shouting at such a pitch that none can be heard. (A new danger may arise if ever we succeed in keeping development away from main roads since the intervening space will very likely be filled by allotments and threadbare playing fields. Some way must be found to mitigate or, if necessary, hide their usual dinginess.) But however important the fight against these wholly avoidable accidents may be, it should not obscure the necessity for thinking about the road itself, and seizing any chances that engineering requirements allow. The general principle of road scenics should be: crisp, clean, complete consistency in the road itself and all its accoutrements (no shoddy junctions, no tea-caddy lamps on fluted stalks, no *pumpes*, no sacred but gently suppurating relics) and complete flexibility in its liaison with the country through which it is passing, adding variety and fresh interest to the ordinary country, and taking its place as quietly as possible, but nevertheless proudly, in the extraordinary country.

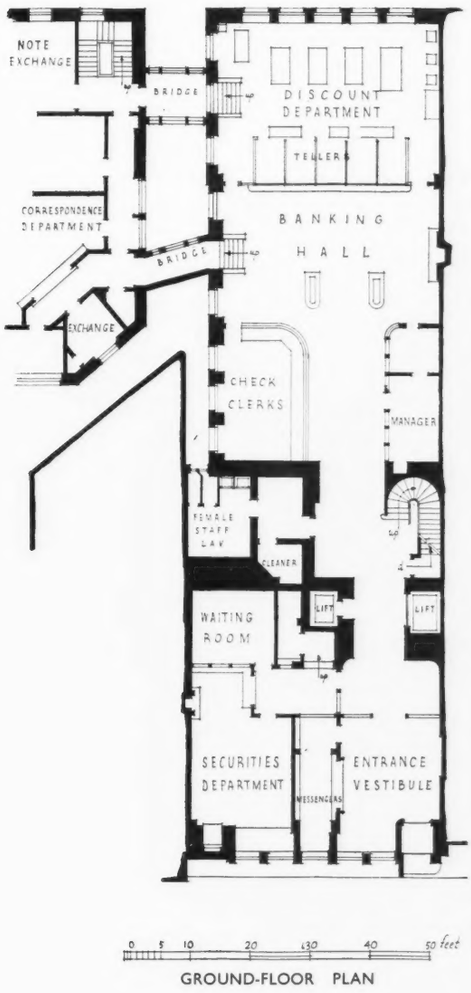
Change in the road. The traditional caravan route that deviates over the landscape becomes the straight through road of diminishing local importance. And this in turn becomes the speedway, seen in process of conversion into the high-speed double-track form.



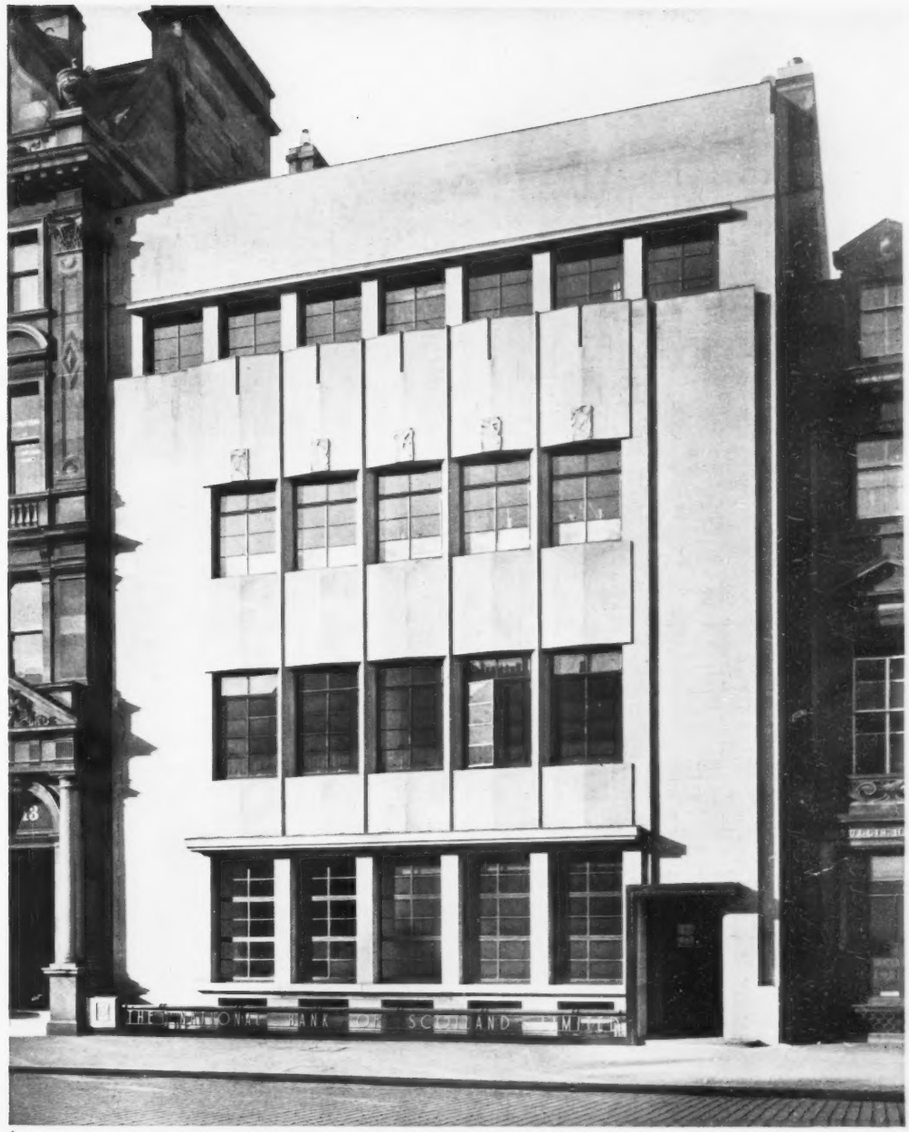
The standard English road signs, black on a white ground, are adequate for the most part, if rather inelegant in proportion. The lettering could be more legible and, though the more abstract symbols, such as for a bend or cross-roads, are satisfactory, the more elaborate ones—school, level crossing, etc.—are insufficiently conventionalized—too pictorial. This criticism particularly applies to the new Ministry of Transport sign for a cycle-track (below). The absurdly realistic bicycle, fidgety in detail, could well be replaced by a more abstract symbol. The best signs in use are probably the two recent ones (30 m.p.h. speed-limit and "delimit") at the bottom of the adjacent column. It is unfortunate that, although these designs are standardized, complete standardization of signs does not in fact exist owing to the other yellow-and-black and blue-and-white series put up by the private motoring organizations and the many others that are allowed to accumulate almost accidentally.

CURRENT ARCHITECTURE

1 THOMAS P. MARWICK AND SON



GROUND-FLOOR PLAN



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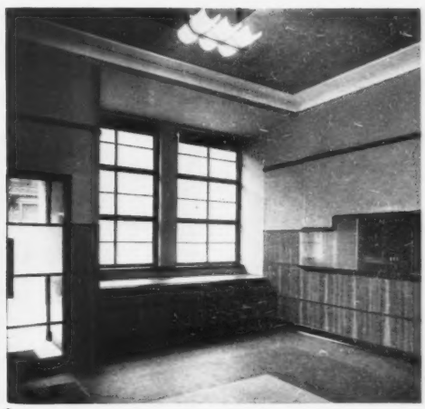

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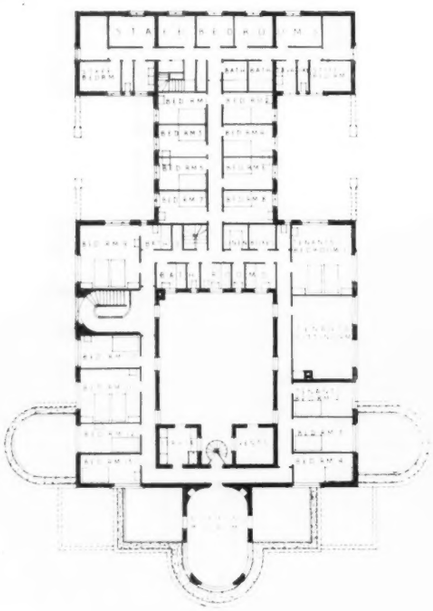
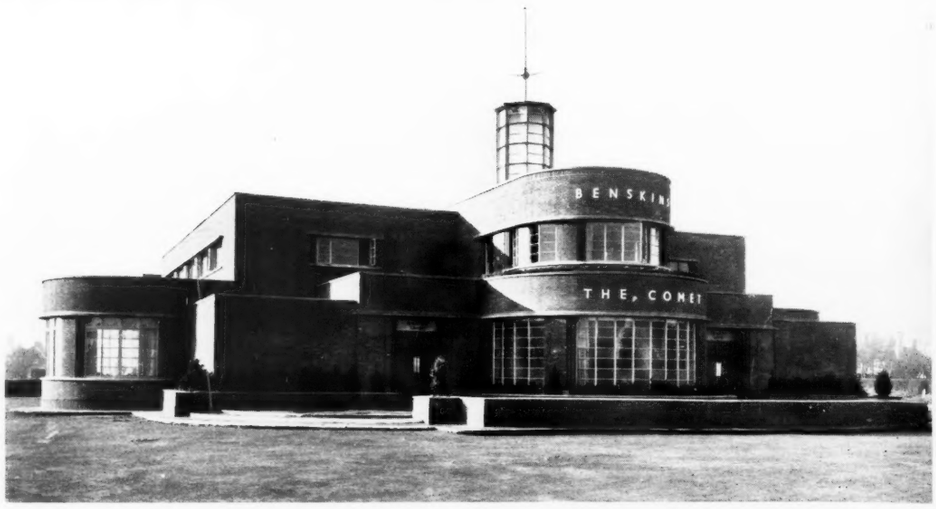
This building is designed to give temporary accommodation for the National Bank of Scotland in Edinburgh, during the rebuilding of their present head-quarters. Much of the structure of the old building has been incorporated in the new, and the nature of the alterations is suggested by the varying wall thicknesses on the plan. The facing of the main elevation is of stone : the five decorative plaques over the second floor windows were designed by Thomas Whalen. The view of the entrance vestibule, 3, gives an indication of the materials used in the interior ; linoleum for flooring and wood veneer for wall finishes. In the banking hall, 2, Indian red gum veneer is applied on plaster, three-ply and wallboard. The furniture is in mahogany blackwood, walnut finished, and some in ebonized wood with green corduroy and natural hide upholstery. The fireplaces are of Italian and German travertine and Swedish black granite. The panels of figured glass are examples of a material extensively used in the building. The glass is tinted, obscured and velvet finished. A feature of the equipment is the "calling" system of lights and buzzers and the installation of intercommunicating loud-speaking telephones.

2 E. B. MUSMAN





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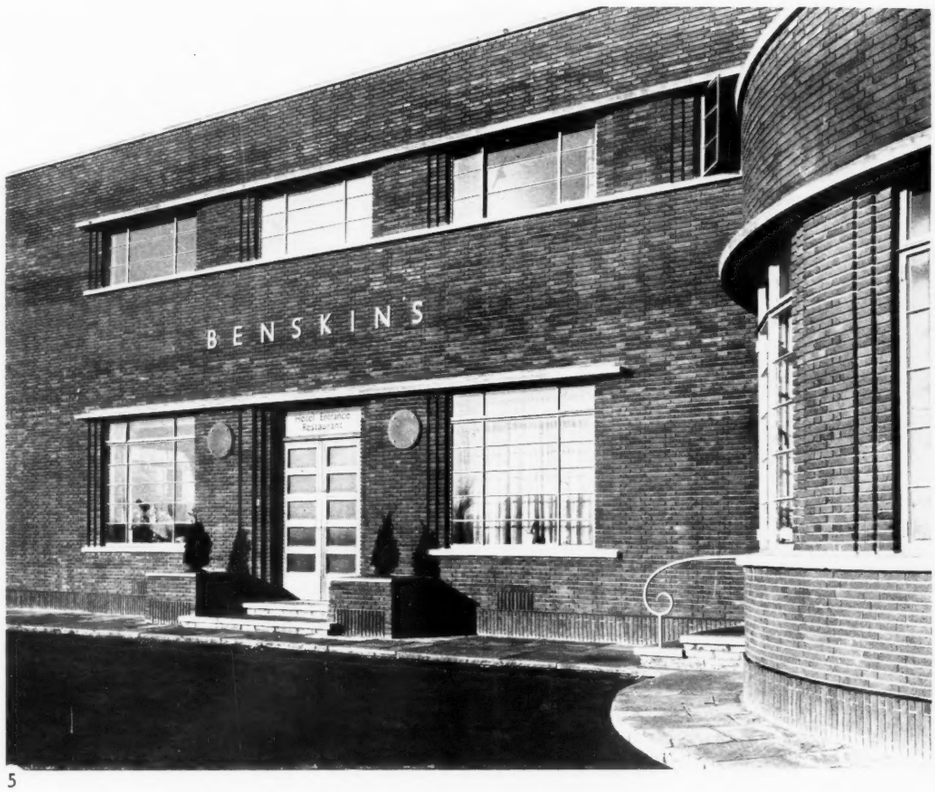

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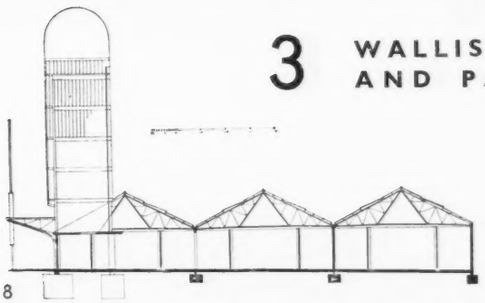
" The Comet," Hatfield, Hertfordshire, is a public-house building which gives a well-considered solution to the particular problems of road-side accommodation. It provides a comprehensive series of lounges, bars and restaurants in order to combine the services of a public-house with those of a small hotel. Sleeping accommodation is provided in a series of twelve to fifteen bedrooms, among which are included sitting rooms for the tenants. The doors to the front sitting room are shown in 7. The rather special requirements of the building have been given a direct statement in the plan, which, in its general form, consists of bars and restaurants grouped round a central kitchen. The planning of entrances is interesting, and also the placing of lavatories in relation to them. Here all plumbing is in the interior, and throughout the building no pipes obtrude on external wall surfaces. Behind the main building is a staff wing and lock-up garages. Beside it is a car park. There is also land available for future extensions and a garden lay-out. The structure is partly of steel frame, with hollow tiles for floors and roof and partitions of sound-resisting slabs. Exterior walls are of rough brown-coloured bricks

3 WALLIS GILBERT AND PARTNERS

6



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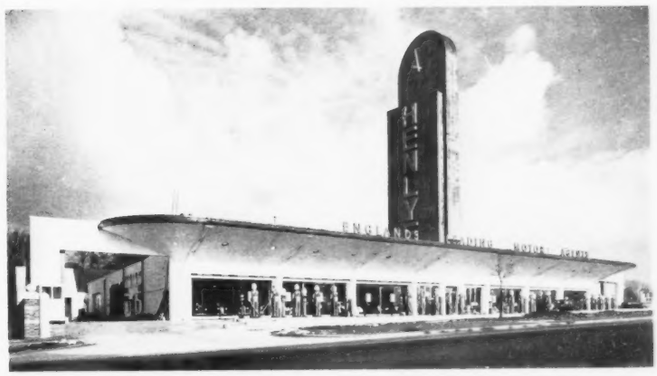

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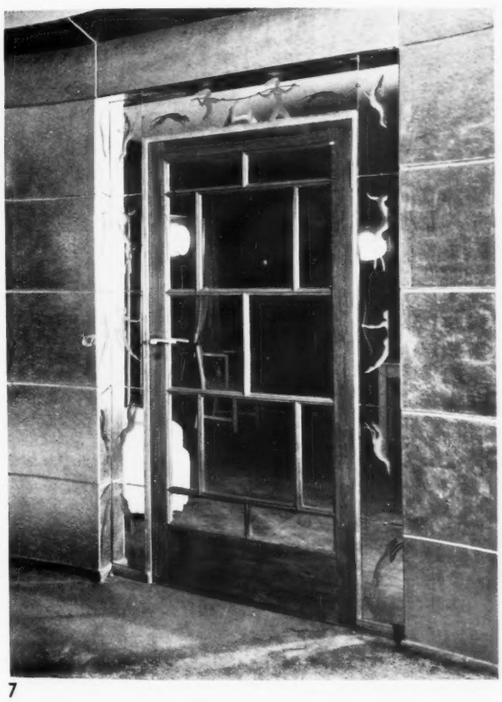

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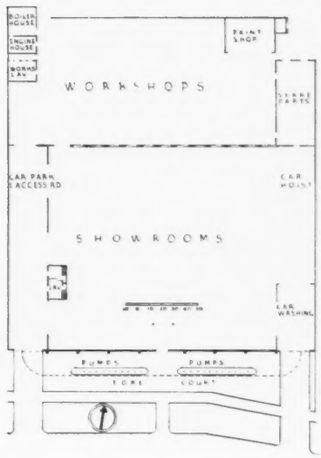

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treated with linseed oil, 4 and 5. In the saloon lounge, 6, doors, seats, counter front, etc., are in waxed teak, and the floor in squares of buff rubber with dark brown joints. The circular table tops are finished in asbestos, coloured dark brown. Chairs are teak, upholstered in hide of dull yellow. The building has a romantic interest in being designed to commemorate the Melbourne flight of the " Comet " plane, which was made at the nearby De Havilland factory. In front there is a sign in the form of a pylon with carving by Eric Kennington illustrating peculiar methods of flight.

In Henly's garage at Brentford a showroom is combined with a fully-equipped service station. The main building, consisting of the showroom with workshop behind, is in steel construction, 8, and a canopy cantilevered over the filling station gives shelter for inspecting the cars in the show window, 9. The central tower, splayed to display the garage name clearly to passing traffic, is covered with copper sheeting and lacquered. In the interior, 10, the administrative department and lavatories are raised above ground-floor level to give an uninterrupted area for display.

4 RAYMOND McGRATH AND WALTER GOODESMITH

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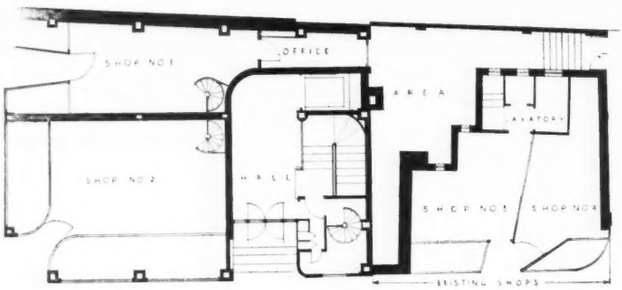
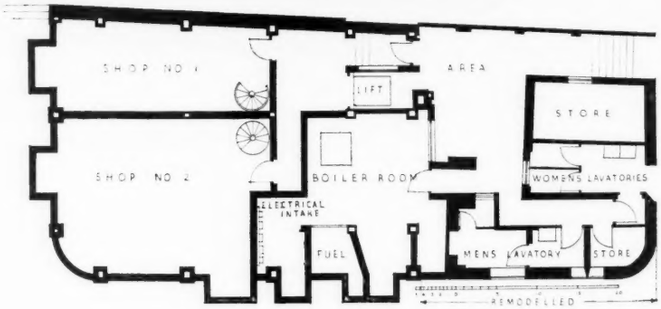
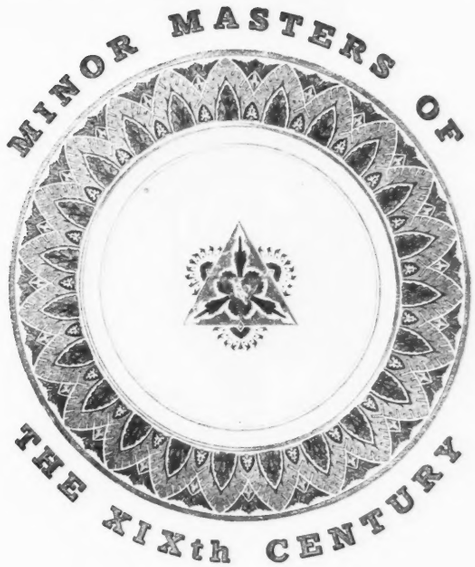




The Pearl Assurance Company's building at Bournemouth consists of two floors of shops on the ground and basement floors, with offices above : a suite of offices for the owners on the first floor and offices for letting on the floors above. It is to be completed by an addition 30 ft. long on the right of the building, 12. The structure is in steel framework with basement floor and foundations in reinforced concrete. The steel frame is encased in concrete with deep lintels down to the heads of windows. Floors and roof are of precast, hollow concrete and hollow tile slabs. Walls are of cellular bricks, and partitions of hollow pumice concrete blocks. Facing is of buff-coloured terra-cotta slabs. The temporary external wall, the lift motor room and the tank room are rendered, and painted white. The windows are of standard sections and sizes above the first-floor level and are of steel, zinc sprayed and painted white. The external metalwork : hand-railing, etc., is also painted white. The balcony and setback on the fifth floor, 11, are the result of town-planning conditions which limited the vertical height on the building line. The hood is in concrete, painted light green.



IX. Christopher Dresser
Industrial Designer

By Nikolaus Pevsner

If you look into the usual text-books, you will get the impression that the history of the applied or decorative arts in the nineteenth century consisted of remarkable achievements of handicraft up to about 1820 or 1830, followed by the abominations of Albert's Great Exhibition of 1851, and then by the revival of the Arts and Crafts initiated by Morris and spread by his followers. Of industrial art proper some words might be found in connection with Josiah Wedgwood, but that would be all, hardly anything on design for industry during the decades of the industrial revolution or the Mid-Victorian boom. And yet, looking back from our position today, a position at the same time extremely complicated and alarming, it is evident that any information as to the appearance, the æsthetic quality and the methods of producing designs at that time of victoriously progressing mass-production would be of value. Are there no industrial designs prior to 1890 worth recording? Even the names of the designers seem completely forgotten.

While engaged in research on the origins of the Modern Movement, quite by chance I came across the name and two isolated examples of the work of Christopher Dresser. The two pieces, two cruet sets, 3 and 4, which I subsequently illustrated, were of a surprisingly high standard, so I tried to obtain some more particulars about their designer. This, however, proved almost impossible. Dresser's name appears neither in the *Dictionary of National Biography* nor in the *Thieme-Becker*, the great German encyclopædia of artists. The *Studio* once published an article on him,* but that was all I could discover. The library of the Victoria and Albert Museum contains his books, and the department of ceramics two rather disappointing pieces of pottery designed by him. Not even the dates of his birth and death were known. It was only after a good many inquiries among such veterans of the Arts and Crafts Movement as I had the pleasure of meeting, that, in a roundabout way, I was led on to the right track. I heard that the Misses Dresser, Christopher Dresser's daughters, lived in a North Down village and would in all probability be prepared to help me. They received me most kindly, and the majority of the data on Dr. Dresser contained in the following pages is based on the information they gave me.

The Dresser family is of Danish origin although it has resided in England since the seventeenth century. Christopher Dresser was born in 1834. After leaving school he studied botany, and soon became a lecturer on the subject in the newly founded Department of Science and Art at South Kensington. He published a book called *Rudiments of Botany* in 1859, and another book *Unity in Variety* in the same year. At about that time, or slightly later, an honorary degree was conferred on him by a German university.

In spite of this academic success, he made up his mind to give up botany and embark on industrial design—a step that may appear a little less surprising if it is added that he had been teaching the botanical drawing classes at South Kensington. At any rate, in his first book on applied art, he already mentions those "eminent manufacturers" who kept asking him for designs. This book, *The Art of Decorative Design*, was published in 1862. To Dresser, truly Victorian or rather truly nineteenth century to this extent, decorative art is tantamount to ornament. He is dealing with ornament exclusively which, according to his definition (p. 1) is "that which, superadded to utility, renders the object more acceptable through bestowing upon it an amount of beauty that it would not otherwise possess." He is by no means averse to the beauty of past styles, but does not deny either that there are contemporary products of high decorative value, above all in the work of Owen Jones at the Alhambra Court and the Greek Court of the Crystal Palace and at St. James's Hall in Piccadilly. Nevertheless he teaches (p. 10) that, for modern use, "a repetition of ancient forms is not appropriate; for ornament, like architecture, must express the sentiments of the age in which it is created." Pagan temples, he says, cannot become Christian churches, and medieval cathedrals are unsuitable for Protestant service. It is therefore of vital importance that our architecture and ornament should express "in a new form the refinement of our age." The task which Dresser has set himself is to define those laws which underlie the creation of all ornament and which should therefore be familiar to everyone concerned with decorative art. He firmly believes in the existence of such laws, as is to be expected from an author brought up and living under the tradition of Victorian rationalism. He therefore discusses a great number of rules of varied value and interest. By far the most extensive section of the book, in fact its central feature, is the one headed Adaptation. Here the author says (p. 116): "In order that art become loveable in the eyes of the people it is necessary that it in no way militate against the utility of the object which it adorns," and he sums up his theory of Adaptation by writing (p. 117) that "perfect regard to fitness can alone save art from suffering condemnation."

Strange as it may at first sight appear, it is this principle of "regard to fitness" that relates Dresser's theory of ornament with his original study of botany. In the structure and the growth of plants he sees the laws of utility and adaptation working to perfection, and descriptions and illustrations of flowers and leaves are for this reason frequently used to explain axioms. But he does not encourage any copying of actual plants for ornamental purposes. On the contrary, Dresser is most strongly opposed to what he calls "the Natural School." What he really wants to encourage is the study of flowers in order to grasp the principles underlying their shapes and the application of these principles to abstract or "conventional" ornament, be it of simple or complex form.

Though many of Dresser's arguments and also the appearance of his own ornament are clearly dated, there are some remarks amongst those quoted which seem strikingly ahead of their time. While one is quite prepared to admire Dresser's genius in putting forward such a good case for "regard to fitness" more than fifty years before "fitness to purpose" became the slogan of the supporters of a twentieth-century style in industrial art, it would be historically incorrect not to look first for a possible derivation of this revolutionary-sounding doctrine of Dresser's. It is unnecessary to say that William Morris's lectures cannot be regarded as such. Morris did not begin to speak in public before the seventies, and had only just produced his first ornamental designs ("The Trellis" 1861, and "The Daisy" 1861), when Dresser's book came out, but there are the writings of other great English theorists of art who were older than Morris and Dresser and undoubtedly influenced Morris, above all those of Pugin and Ruskin.

On the title-page of Pugin's *Contrasts*, that admirable pamphlet which he published in 1836, there are mock advertisements such as these: "Designing taught in six lessons, Gothic, Severe Greek and mixed styles"; "A large quantity of Gothic cornices just pressed out, from 6d. per yd."; "Compo Fronts forwarded to all parts of the Kingdom"; "An Errand Boy for an Office who can design occasionally"; "Wanted a person to do showy foregrounds for competition drawings." Apart from the profound foresight with which Pugin denounces conditions even more topical today than they were in his own time, it must be said in our connection that Dresser's abhorrence of thoughtless copying of old ornament may well have been influenced by these and similar indictments of Pugin's. It may also be well to compare what Dresser teaches on the function of ornament and on its fitness with the following quotations from Pugin's *True Principles of Pointed or Christian Architecture* (1841). "There should be no features about a building," Pugin writes, "which are not necessary for convenience, construction or propriety." Every detail should "serve a purpose." Ornament should "beautify, and not disguise," and these points are even exemplified by remarks on textile and wall-paper design.

Of Ruskin's works published before 1862, Dresser may have regarded *The Seven Lamps of Architecture* (1849) as particularly stimulating. Here he could find the idea that the beauty of architecture lies in ornament more than in construction, and that the beauty of ornament is "derived chiefly from the external appearances of organic nature," and here also the dislike of the use of Pagan forms for Christian churches, and the interpretation of architectural values as a "vivid expression of the intellectual

* Vol. XV, p. 134, 1898.

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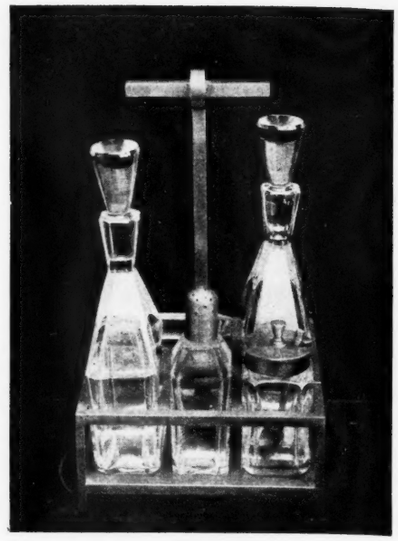

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life which has been concerned in their production."

However, on the whole, Dresser's matter-of-fact style is wholly different from that of Ruskin's sonorous sermons. Dresser wants to set up laws of immediate use to the practical designer, Ruskin expatiates upon "principles of right." His *Lamp of Truth* and his *Lamp of Obedience* are not there to enlighten the architect or designer but to edify the general public. Ruskin pleads for only a few styles as able to achieve the salvation of architecture, whereas Dresser is as catholic in his taste as any successful designer of his age could be.

This as well as many other qualities point to a direct influence on Dresser by Owen Jones, the architect whom he mentions with great respect right at the beginning of his book and whose words he keeps quoting in the most important pages of the chapter on Adaptation. On Owen Jones (1809–74) it is not necessary to say much here, as tribute was paid to his eminently advanced theories by Mrs. Gray in the February issue of THE ARCHITECTURAL REVIEW. It may, however, not be amiss to single out those points which were especially relevant to the formation of Dresser's ideas. They can all be found in a series of lectures delivered by Owen Jones at the Marlborough House School of Practical Art in June, 1852, immediately after its opening.* Jones proceeds from a description of what contemporary design seems to him to be like. "Chaos and disorder" (p. 2), is what the Great Exhibition of 1851 has revealed everywhere. Now industrial art would not have declined so badly had it been supported by a sound architectural style; for "architecture is the great parent of all ornamentation" (p. 4), and decoration "should properly be attendant upon Architecture" (p. 4). As to architecture, Jones says (and Dresser almost literally repeats) that it "is the material expression of the wants, the faculties, and the sentiments of the age in which it is created" (p. 5). It is therefore—and this argument too has passed into Dresser's book—"vain and foolish to make the art which faithfully represents the wants, the faculties and the feelings of one age, represent those of other people under totally different conditions" (p. 8). The reason for which Jones recommends the study of the past corresponds once more exactly with Dresser's aims set forth ten years later: "The Principles discoverable in the works of the past belong to us; not so the results" (p. 39). Our goal should be a new style of our age; knowledge of the laws embedded in historic ornament is supposed to be necessary to attain this. After these introductory theses, Jones goes more into details, and there again Dresser follows him. Proportion is discussed, and Dresser asserts exactly like Jones that of two proportions the one which it is more difficult for the eye to detect will always be preferable. Thus 5:8 will be better than 4:8, etc. (Jones p. 24, Dresser p. 102). Dresser's attacks on contemporary carpet and wall-paper design also find their model in passages from Jones's lecture. His prescription is—to give a final instance of the complete accord between Jones and Dresser—that "flowers and other natural objects should not be used as ornaments, but conventional representations founded upon them" (p. 36).

These two points, however, make it necessary to introduce into our procession of theorists one more man, the great architect Gottfried Semper (1803–79), whose two epoch-making treatises on Polychromy in Greek architecture came out in German in 1834 and 1851. He had to leave Germany after the breakdown of the revolution of 1848. In 1851 he was commissioned by Mr. Shadwick to arrange the Canadian, Egyptian, Swedish and Danish sections of the Great Exhibition. He did this and laid down his impressions of the exhibition in a brilliant pamphlet published in Germany under the name of *Wissenschaft, Industrie und Kunst* in 1852. This book greatly impressed Prince Albert and, owing to his wish and that of Henry Cole, Semper was appointed Professor of Metallurgy in the New School of the Department of Practical Art. Of his lectures nothing survives. Of his extensive plans, which were of prime importance in the foundation of the Victoria and Albert Museum, an interesting manuscript is preserved at the library of the museum called *Practical Art in Metal and hard materials, its technology, history and styles*. Semper also contributed an essay on polychromy to Owen Jones's *Apology of the Greek Court at the Crystal Palace* (1854). But as he left London in 1855 to follow a call to the new Technische Hochschule at Zurich, it is not easy to analyse the effects on England of his ideas on industrial art. It appears most probable that Owen Jones received almost as much inspiration from Semper as Dresser received from Jones.*

After this discussion of Dresser's theories an account must now be given of his practice. As was said before, he began to supply designs to manufacturers between 1859 and 1862. In 1859 Morris had built and furnished the Red House. In 1861 he had founded his firm. This defines the historical situation in which Dresser started. After his first book he brought out several other publications, dealing with similar matters. One of them, called *The Principles of Design*, came out in an intensely Victorian magazine, *The Technical Educator*, in 1871-72. In 1877 he went to Japan to present the government with English articles for a Japanese museum. He arranged these much to the satisfaction of the Japanese authorities and at the same time studied Japanese art which had, I understand, interested him as early as 1862, when he saw some of it at the International Exhibition. After his return, he was presented by the Mikado with casts of four Japanese ceilings of which three are now at the Victoria and Albert Museum (numbers 390, 391, 442—1905). In 1882 he wrote a book on *Japan, its Architecture, Art and Art Manufactures*. Dating from 1886 there is another large publication, *Modern Ornamentation*. In the eighties he also originated an organization for selling artistically designed furniture called the "Art Furnishers Alliance" with showrooms in Bond Street. I was unable to find more information about this. He died on the 24th November, 1904.

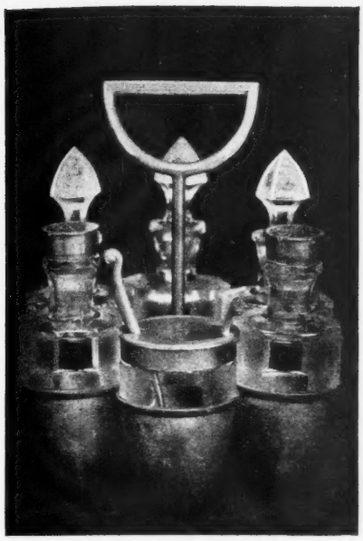
Of his work not much seems to survive, or at any rate not much is now traceable. All the illustrations in this article except two are taken from what the Misses Dresser have carefully preserved.

Before passing on to a few remarks on the style of Dresser's designs, it may be well to have a look at the business side of his activity. It should be kept in mind that he was a professional designer and not an architect, as, for example, Voysey remained even during the years of his most prolific production of designs for textile and wall-paper manufacturers. The amount of designs produced by Dresser must have been enormous. We see from some surviving account books of his, into which he entered notes and sketches of all that was supplied to firms between 1866 and 1885, that in 1869 he sent 158 sketches for silk damasks to Ward's of Halifax, and 67 sketches for carpets to Brinton's, besides many designs for other manufacturers; in 1871, 142 carpet designs to Crossley's, etc.

Fees—this may be worth mentioning—seem to have been in his time the same as they are now. For pottery designs he received from Minton's 4 guineas for a breakfast cup and saucer, and 10 guineas for a big vase; for carpets we hear of fees between 3 and 10 guineas; for later

* Published in 1863 under the title *The True and the False in the Decorative Arts.*

* In Dresser's book Semper is quoted only once (p. 129). "Professor Semper used to say that the history of a nation can be read in the form of the water-vessels."



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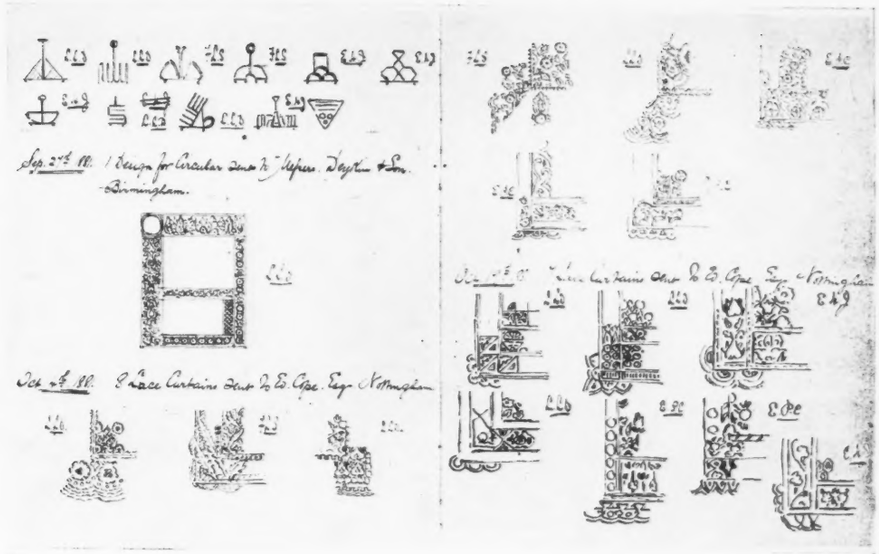

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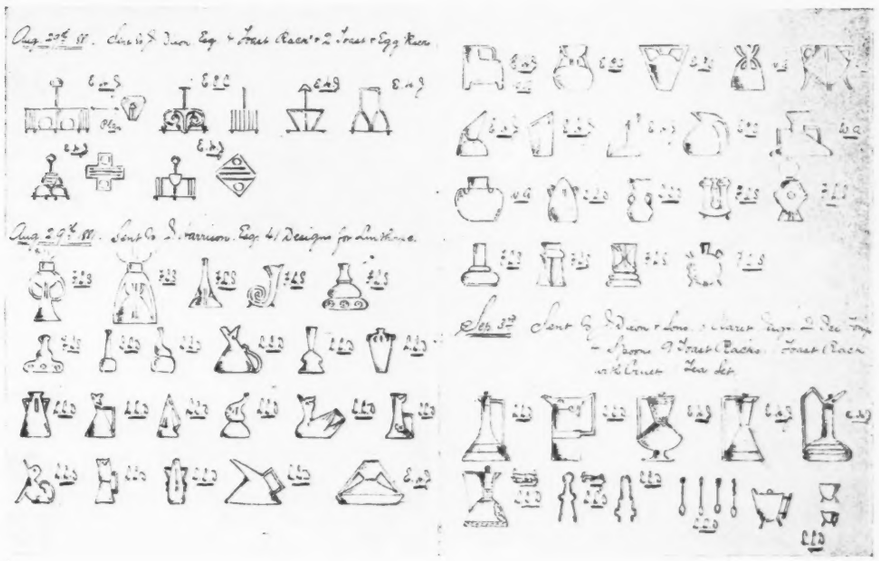

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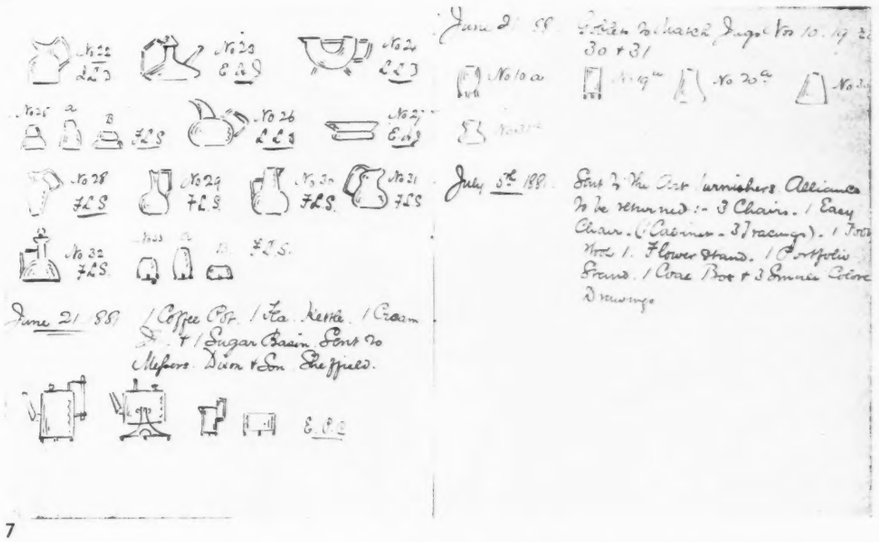

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Designs by Christopher Dresser. 1, *tea kettle in copper.* 2, *vase in "Clutha" glass, about* 1880–90. 3–4, *cruet sets,* 1877–78. 5–7, *pages from Dresser's account books for* 1881, *showing designs for lace curtains and metal-work. The headpiece on page* 183 *is a dinner-plate design, about* 1870–80.

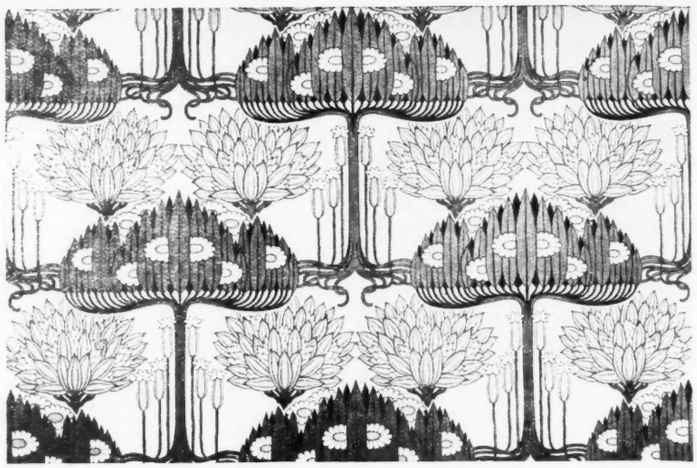
fabric designs anything between 10 and 20 guineas. Incidentally it should be noticed that most of the manufacturers for whom he worked are still in the front rank in 1937, a striking proof of that continuity of development characterizing a country in which copper coins with the head of young Victoria are valid to the present day. There are Crossley's and Brinton's in the carpet trade, and Minton's in the ceramics industry; Elkington, Hukin & Heath, Dixon's in the metal trades; Barlow & Jones, Turnbull & Stockdale, Warner & Sons, Tootal's, Wardle's in fabrics; Jeffrey's and Essex's, Sanderson's and John Line's in wall-papers.

As to Dresser's style, one has to differentiate between structural and ornamental problems. He was at his best when he had to shape objects, but he was more popular as a surface decorator. His early handwriting comes out clearly in a design for linoleum dating probably from the seventies.* It is still very similar to what ornament there is in his early books, and also to his *Studies in Design*, a portfolio of the seventies. Qualities to be stressed are a peculiar sombre colour-scheme of night-blue backgrounds with olive-brown, olive-green and gold, and certain spiky forms of wilful expression, which have scarcely any dependence on the past. This is also what makes some of the pottery which he designed in the same decade look so unusual amongst the ordinary period imitation then in fashion. There is no doubt a strong will and an original brain behind these designs.† The colour is harsh and rather crude, with unblended blues, greens, reds and gold.

The same harshness and wilfulness, not to say ruthlessness, is expressed in Dresser's designs for metal-work. I said before how much

* Comparable to linoleum designs in the account book for 1874.

† I cannot say that I have found the same appeal in what I have seen of Dresser's production for Mr. Harrison's Linthorpe Pottery at Middlesbrough for which he worked in the late seventies and the early eighties.



8–9, *textile designs dating from about* 1890–1904, *showing two of the many changes of fashion during these years as reflected in the work of a free-lance designer.*

I was impressed by two cruet sets which he did for Hukin & Heath's, 3 and 4.*

The Back-to-Fundamentals attitude of these square and uncompromising shapes is unexpected in the seventies, and a group of sketches in the account book, 5–7, shows that he was all the time—we are in 1881 now—experimenting with new shapes. Many of them are odd, some are decidedly ugly, some are extremely interesting as endeavours towards functionalism, but scarcely any are conventional or dull. And again in a copper kettle such as the one illustrated, 1, we find that same strong sense of individuality.† One has only to follow the weird curve of the handle with its pre-Art Nouveau rhythm opposed to the firm roundness of body and neck and the queer angularity of the spout to convince oneself of the exceptional character of Dresser's art. A further corroboration can be derived from chairs of his in a stern Neo-Empire and others of a lighter and more independent style, and from vases, 2, which he designed during the eighties for James Cooper & Son, of Glasgow, producers of "Clutha" glass. There is some period influence in these no doubt, but how boldly it is treated. Some of the spirit that led Morris, when he made his first crude and heavy pieces of furniture, seems to live here too.

However, Dr. Dresser grew older, he passed the age of fifty, and found an ever-increasing market for his designs. So he settled down, specializing more and more in textile designing and by degrees giving up his search of originality and function.‡ The illustrations from fabric designs of his can only serve to show how an accomplished draughtsman reacted to the various phases in the development of style which took place during the nineties and the first years of our century. There is a charming pomegranate and peacock pattern inspired by English textile traditions; there is a chrysanthemum pattern decidedly Morris or rather Crane in type; there is Beardsley looming large in another design, 8. This above all shows how far mere imitation has now replaced Dresser's previous directness of approach. On the other hand a series of patterns illustrating the Days of the Creation still contains something of that genuineness which one must admit and may admire in his earlier work. Then fashions follow each other more rapidly, and Dresser can be seen under the influence of Voysey, 9, of Mackintosh and of Copenhagen porcelain. Most of these designs are as competently set out and as well drawn as Dresser's work of years before. Yet success seems to have deserted him at the end of his life. When he died on a journey at Mulhouse in Alsace, the *Architect* in a short obituary note* only stated that "he believed in conventionalism and flatness." That was all, and at that time it was meant to be derogatory. It is no longer so now. On the contrary, this faith of his should by itself suffice to secure him a niche—though not a particularly prominent one—in that queer and mixed pantheon of fighters against the spirit of the nineteenth century.

* Vol. LXXII, p. 360.

* These I discussed in my book on *The Pioneers of the Modern Movement*, p. 63. The designs were according to the account books posted to the manufacturers on 24 Oct., 1877.

† I understand that his designs for copper were carried out by Benham & Froud's of London.

‡ Fig. 5 shows that earlier textile designs of his were also far more traditional and less significant than his contemporary designs for metal-work.

Book of the Month

A European Housing Survey

By Elizabeth Denby

HOUSING. Vol. I. By the Building Centre Committee. London: The Rolls House Publishing Committee. Price 30s.

THE Building Centre Committee deserves, and will no doubt receive, the congratulations and thanks of the architectural profession for its admirable survey of selected low-rented housing schemes in England, France, Holland, Sweden, Denmark and Spain.

Intended primarily for architects, this book is of infinitely wider appeal and use. It is a mine of information, and, unlike most mines, it can be worked easily by the merest tyro, though the more skilled the worker the more rich the materials which he can excavate.

To begin with, the information and its presentation have been strictly standardized. Each section is introduced by a short summary of the financial provisions governing the housing policy of the country. This is followed by a much fuller description of the city in which the scheme is situated—its population, climate, industries, wage-levels, the amount and disposition of open spaces, of working-class residential areas, and of the local available building materials. Housing policy, management, and the social services available to working people in the city are given in some detail, together with the influence of municipal or geographical considerations on the planning of site and building blocks.

With this general introduction, the business begins. The different methods of construction and finish used in each scheme are tabulated, ranging from the general system and external walls to details of joinery and fittings, services and equipment, and followed by details of the Housing District (scale 1 : 8,000), the Group (1 : 2,000), the Block (1 : 400), and the Dwellings (1 : 200), tabulated and drawn with exquisite clarity.

For ease of reference and comparison, such treatment is admirable.

There is no confusion, no uncertainty in the presentation. Each point in construction, planning and equipment is allowed to tell its own tale, but it has been faultlessly coached.

Angles of light between blocks and within the living rooms; percentages of gross area to living area in the individual dwelling plan; percentage of window area to living area; percentage that the rent bears to the usual unskilled wages in the district—every detail is given coolly, impartially, sometimes with deadly effect.

Consider this description of the almost insoluble slum problems with which Paris is wrestling, and compare it with the present "development" policy in London:—"in the centre of Paris the density is as high as 400 persons per acre . . . open spaces have continually been reduced by the exploitation of land and buildings . . . . These dense slums are exceedingly expensive to clear." Villeurbanne, outside Lyons, shares with Chapman House, London, the doubtful honour of being the most densely developed estates with the greatest area devoted to roads, and with least open space.

	Built-on area %	*Roads* %	*Open space* %	*Density per acre buildings*	*persons*
Villeurbanne (1931-34)..	49	47	4	192	610
Chapman House(1934)	45	37	18	121	421

This can be compared with

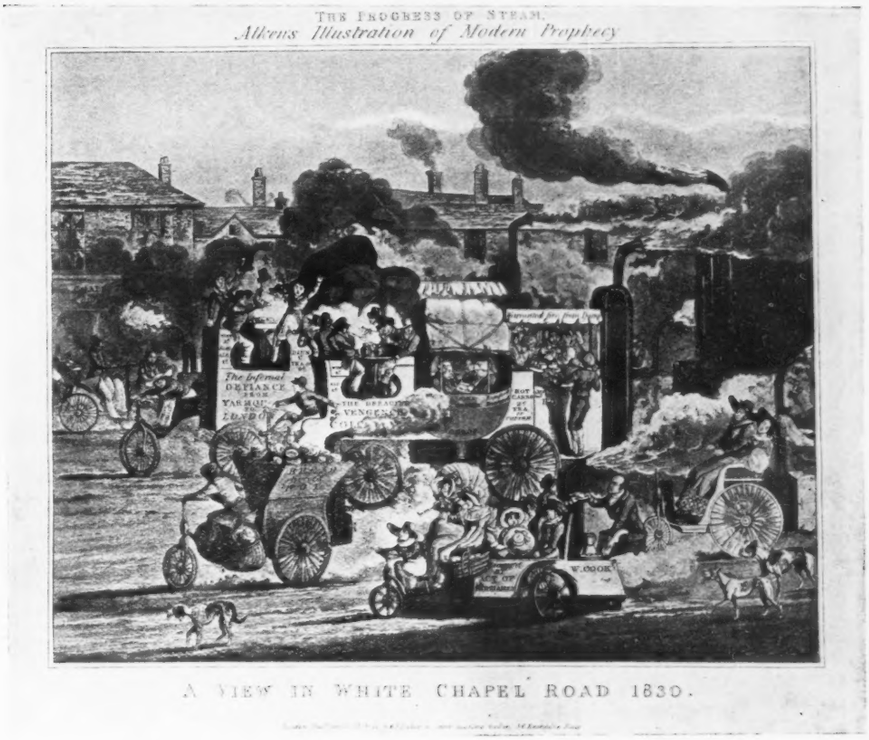
Bergpolder, Rotterdam (1934) ..	11	27	62	48	131
Quarry Hill, Leeds (1935) ..	14	27	59	36	126

Equally interesting comparisons in density of development are shown in the cottage schemes illustrated. Stockholm is obviously in a different category from any other of the estates, being built by the tenants themselves for a definitely suburban type of life. Birmingham, however, with its 12 cottages and 58 persons to the acre, is in striking contrast to the two Amsterdam schemes with 27 and 29 cottages containing 179 and 157 persons per acre respectively, i.e. more densely inhabited than six of the block developments illustrated in the book, but obviously inhabited by large families who would be quite unsuitable for life in flats.

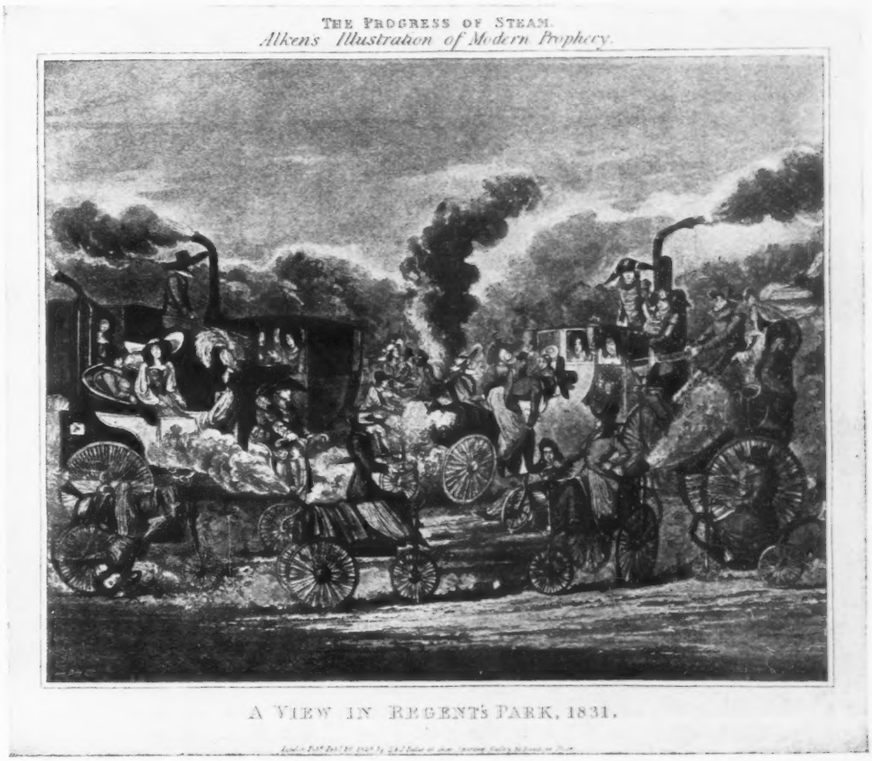
What emerges from this comparative study of site plans, dwelling plans and equipment? First that in Britain there has been an extraordinary neglect of the possibilities for smoke abatement during the recent rehousing drive, plan after plan showing the installation of crude coal ranges. Then that smaller attention is paid in Britain to the importance of light and air in the home, compared with the window areas provided in the equally chilly climates of Sweden and Denmark. Next, the monotony of one-roof-levels whatever the scheme, unless the contours of the countryside collaborate in providing diversity. Leeds stands out as the only town to experiment in methods of building construction and of refuse disposal (which have been tried out with such success in the schemes outside Paris); to experiment in rent-rebate economies (the book omits here to state what were the financial results of the scheme which was in use for such a short but important period); to experiment in providing furniture for families whose slum furnishings had to be destroyed just as imperatively as their slum dwellings: in allowing the tenants to decorate their homes according to their individual tastes, instead of according to outside ideas of comfort and homeliness.

Throughout the English section it is assumed that rehousing schemes need not include social

THE STATE OF THE ROADS: A PROPHECY OF 1830



A VIEW IN WHITE CHAPEL ROAD 1830.



A VIEW IN REGENT'S PARK, 1831.

The story of the Steam Carriage has been outlined on Plate i. The time of its most conspicuous successes was the thirties of the nineteenth century when, following the investigations of the Select Committee of 1831, *there seemed every likelihood of an enormous development of steam transport on the roads. Speculation on its consequences was a subject particularly well suited to the contemporary genius for caricature. One set of examples is Alken's "Illustrations of Modern Prophecy," which portrayed conditions on the roads not very different from those of the present day. The real sting of the caricatures lies in their resignation to an inevitable failure to develop the roads on the scale demanded by the progress of mechanical locomotion.*

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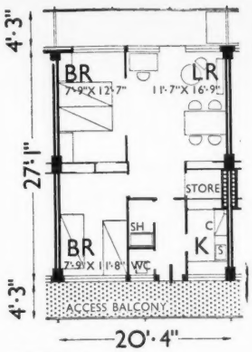

TYPE A

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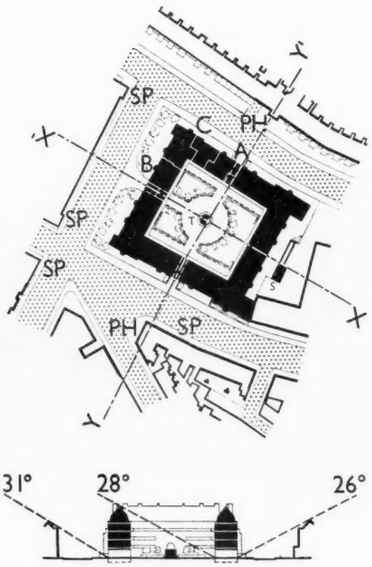

SECTION YY'

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Bergpolder Dwellings, Rotterdam, 1934; 1, *view from north;* 2, *typical flat plan. Newquay House, Kennington, Housing Group,* 1932; 3, *site plan and section YY. It is to be regretted that this form of site planning is still so popular. The overlooking of adjacent corner dwellings, the overshadowing, and the echo within the enclosed courtyard, are disadvantages from the tenants' point of view. The letters on the plan represent: PH—Public House. SP—Shop. S—Store. T—Transformer. From "Housing."*

services, since provision is already theoretically available for the district as a whole. This is of course very far from the case, for the new estates are either built on undeveloped land on the periphery of towns, or on an area in which everything has been destroyed and only the public houses rebuilt, or in a district which was anyhow short of the ingredients for a full life.

There are odd remarks scattered tantalizingly throughout the Continental examples: "wine cellars to every flat," "it is the custom for families living in central areas to own allotments, with small summer houses, on the outskirts of the city, and to spend the week-ends there in summer," "a coffee room is planned on the same floor as the communal laundry," "a large number of people own boats, often home-made." These straws hint at a wind which might well be encouraged to blow through English manufacturing towns. The naughtier side of the architectural profession is apparent every now and then, as in Rotterdam where the "kitchens are small to prevent them being used as dining rooms!" Why shouldn't they be used in the way the housewife finds most convenient? I have found this attitude in many modern schemes throughout Europe, and it never fails to rouse the same furious rage in the working woman's breast. There is, incidentally, no nonsense about "minimum kitchens" in the Stockholm cottages which the workers build for themselves.

But these examples explode the fallacy that the Continental living plan is infallibly good. Look at the Villeurbanne scheme, and imagine yourself poked into one of those cells looking north on to a narrow well: consider the glut of water in Holland and the absence of baths: appreciate the under-implications of the following statement—"The carrying of prams and bicycles up the common stairs has caused so much damage to the walls and painting that the present policy is to provide central stores in the cellars or open spaces." Yes: that is the way many reforms are screwed out of a tight pocket.

There is some confusion between Paris and Greater Paris, which should have been given for reference with Greater London, especially as all the schemes illustrated were from this outer-Parisian area. Overcrowding at the density of over two persons per room is incidentally 9 per cent. both in Paris and in London.

In only five out of the 29 schemes are rents below one-fifth of the income of an unskilled man, two of these schemes being in Liverpool, two outside Paris, and one in Rotterdam. In one of the Swedish schemes rent is quoted as 264 per cent. of such an income—but the question naturally arises, why then was the scheme chosen for illustration? In four of the schemes, rent accounts for one-third of income.

Land and finance have, perhaps wisely, been ignored, or mentioned only obliquely. It would have been interesting to have been given the

charges for land in the different schemes, the amount of direct or indirect subsidy in each scheme, and the maintenance costs either estimated or expended.

The high level of intellectual integrity and resource required to reduce such heterogeneous information to its present simplicity, order and lucidity, is so discreetly shown that it will not be immediately apparent. The editorial committee is to be congratulated on its choice of colleagues, Miss Blanco White and Miss Crowley, to carry out the production of this valuable book. Subsequent volumes will be awaited with interest and impatience.

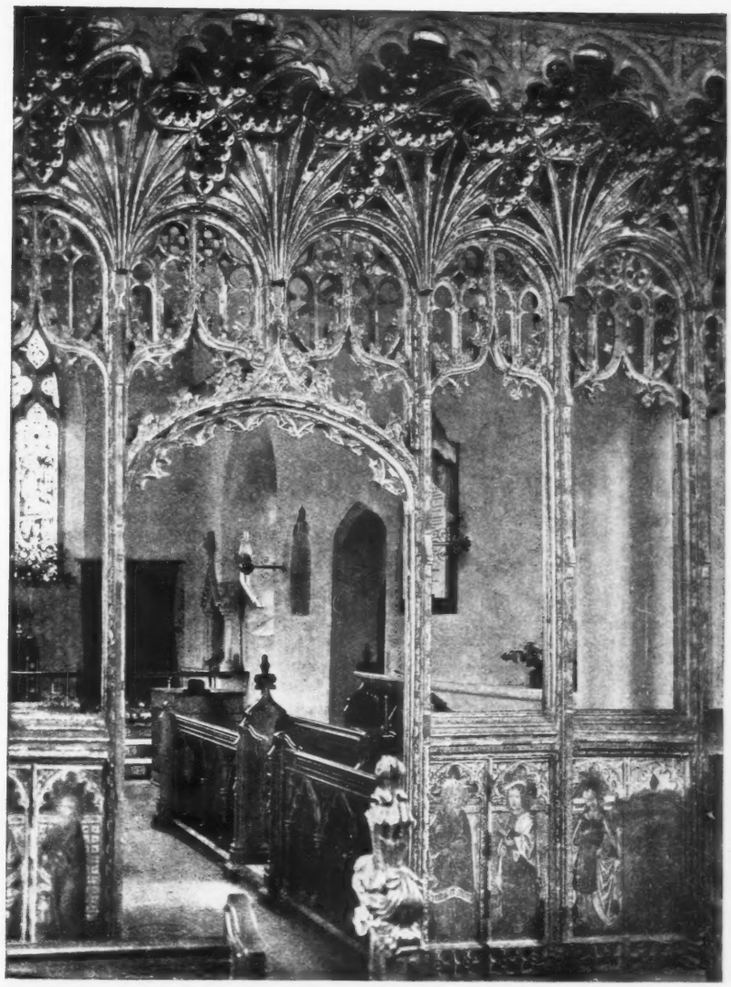
Craftsmanship in Church Woodwork

ENGLISH CHURCH SCREENS. By Aylmer Vallance, M.A., F.S.A. London : B. T. Batsford, Ltd. Price 25s. net.

"If any man says he loves Pointed architecture and hates screens, I do not hesitate to denounce him as a liar!" So Pugin, with characteristic vehemence, declared in his *Treatise on Chancel Screens*. This new treatise on the same subject is of a kind to make it almost impossible to hate screens. It brings together a wealth of good photographs that, in their range and variety, must be the most comprehensive collection yet published. They constitute a wonderful revelation of what beauty, sometimes simple, sometimes sumptuous, many a church enshrines in mediaeval woodwork, and if anyone can look through such a book without having his admiration quickened, his senses must be dull indeed.

In writing another book on a feature of churches that has already received detailed attention from such authorities as Mr. Francis Bond, Mr. Howard and Mr. Crossley and, perhaps still more notably, from Mr. Bligh Bond and Dom Bede Camm in their two imposing volumes "Roods and Rood-Lofts," the author justifies his claim to have broken new ground and not produced a mere *réchauffé* of existing information. His conclusions are, in some details, new and original and supported by evidence well set out and carefully argued. He is able to demonstrate that many hitherto accepted theories as to the origin and purpose of various features connected with screens and rood-lofts are contradicted by the very nature of these features themselves. Thus the often-repeated fallacy of the rood-loft having been used for the reading of the gospel at Mass is convincingly disproved by the usual dimensions of the staircases that lead up to the lofts. Their narrowness and the steepness of the steps would have rendered it quite impracticable for a priest, wearing the Mass vestments, to ascend with either ease or decorum. Similarly the notion that the holes in the wainscot of some screens were intended for use by penitents at the confessional is controverted by the fact that in some screens these holes occur too low down. The author advances the much more probable explanation that they were used as squints to enable children to see the elevation of the Host at the altar. A child kneeling in the nave would otherwise have had his view blocked by the solid base of the screen.

It is interesting to learn that the Elizabethan order of 1561 requiring the destruction of rood-lofts was not intended to authorize the removal of the screens themselves. The screen was to remain or, if destroyed, to be replaced by a new one; there was to be some separation of chancel and nave. Since this order moreover has never been repealed, it is, according to the author, still binding. Yet, as an injunction positively requiring the erection of screens, it had become a dead letter in little more than a century. Under the influence of Laud and after the Restoration, when there was a disposition to revive old ways, the design of screens enjoyed a short burst of vigour which found notable expression in the north. Cosin, Bishop of Durham, stimulated a series of works in his diocese of which the Gothic character, in view of its late date, is little short of extraordinary. But the seventeenth and eighteenth centuries contributed little to carry on the tradition. The comparatively few screens of that era are interesting and often of considerable charm; Cruys Morchard in Devon, which somehow has escaped mention, may be quoted as a good specimen, being part of a complete refurnishing of the church after a fire in 1688 and showing the ideas of that time as to propriety in church furnishing. To the nineteenth century it was left to open the darkest period in the history of screens. The author's indictment of those persons and authorities responsible for the disappearance and destruction of screens is severe but not unjustified. Some perished from sheer neglect, some from misplaced zeal, some from blind ignorance. Any number were swept away in the fever of church restoration and, more recently, it is painful to note that not a few



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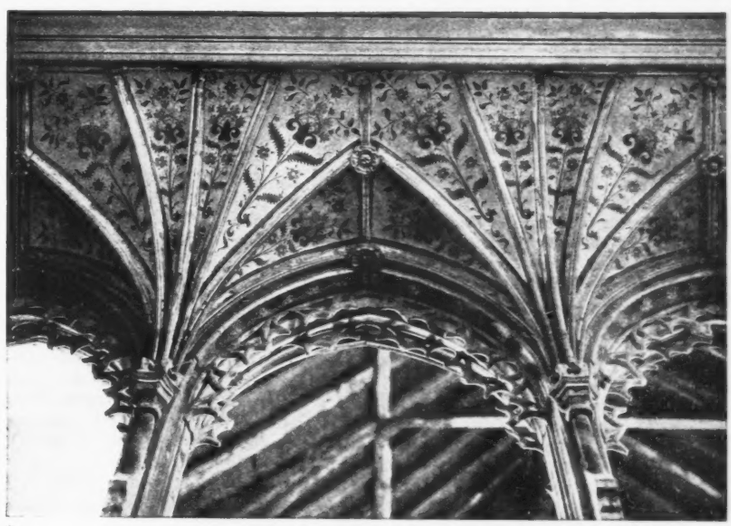

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1, *Bramfield, Suffolk. Detail of rood-screen from the west. "The hanging arches along the top are modern and ill-formed."* 2, *Ranworth, Norfolk. Detail of painted vaulting of the rood-screen. From "English Church Screens."*

have been destroyed by fire—in one case the deliberate work of suffragettes. A particularly flagrant offence has been the supine abandonment to the action of wind and weather of such a church as Downton-in-the-Rock, Herefordshire, so that in the space of forty years, this little sanctuary, exhibiting screen arrangements of almost unique completeness, has become a hopeless ruin. The photograph reproduced of Winterbourne Tomson Church, Dorset, is not quite up to date. This tiny church, which also seemed likely to become a wreck, had the good fortune to fall into the hands of the Society for the Protection of Ancient Buildings and it has been well and reverently repaired.

The author raises a point of some importance in his contention that the existence of Diocesan Advisory Boards and the necessity of obtaining a faculty from the Diocesan Chancellor are not yet sufficient safeguards to prevent damage being done by irresponsible church authorities. The possibility of doing the damage first and obtaining a "confirmatory" faculty afterwards, or of obtaining a faculty and then flouting the terms of it are abuses that, it is suggested, call for more stringent control and deterrent penalties.

S. E. DYKES BOWER

Escape from Escapism

ENGLISH PANORAMA. By Thomas Sharp. London: J. M. Dent and Sons. Price 7s. 6d. net.

In spite of so much talk and some action in the matter of town and country planning, it has been difficult for the layman to get a clear idea of the present position in England, and how it came about. Most writers on the subject are either too technical or too sentimental, and there is a danger of the whole problem falling between the two stools of the machine-agers and the preservation-maniacs.

Thomas Sharp, in a style both graceful and learned, has stepped into the breach and presented us with a clear account of the whole matter. He gives us in the first place a well balanced historical survey, some small part of it already familiar to readers of this REVIEW, and he disposes once and for all of the idea that town planning or even country planning just happened.

After a masterly description of the gradual change from primitive settlements to the England of the "wool revolution," he explains the rise of the town idea, quoting Thomas More's plea for urbanity (and incidentally his preference for flat roofs). He describes the "unpretentious scale of quietness and easy familiarity that was to continue throughout its whole course to be the most delightful and notable characteristic of English civic design."

With the industrial revolution, comforts came in and design went out, and an interesting distinction is drawn between the romantic movement and the reaction against machinery, as twin causes of the big change. Both of course were children of escape, escape from too much ordering about, and both still survive, semi-detached, in the chalets of Beckenham and Mill Hill. Mr. Sharp has interesting things to say of the real town-planning reformers of this period and he is to be thanked for his reintroduction of a neglected character, J. S. Buckingham.

The great decline from Metropolitan Improvement to Estate Development is well presented, but as far as towns are concerned, the part played by our system of land tenure is perhaps underemphasized. The present restrictive control can only be looked upon as a half landing to the higher policy of public ownership.

For many, however, the most valuable chapters will be the final ones. His account of Ebenezer Howard's "Marriage of Town and Country" is followed by a plea for easier divorce. One thing or the other: Town or Country.

Mr. Sharp joins the general attack on straggling suburbs. Our confusion of ribbon development and green belts, with a certain amount of red tape thrown in, has provided us with a knotty problem, but it should be borne in mind that with rapid transport, star-shaped growth is natural to large cities, and gives the greatest amount of real country to the greatest number of people, though it may favour the native at the expense of the motorist. The crux of the problem is urban design as much as the planning of suburban development and "the countryside's salvation lies largely in the towns being made once more a place fit to live in." Here the architect is much to blame, in the suburbs he is less so, and while it would be worth considering a greater architectural effort in that direction, perhaps through a judicious revival of the pattern-book idea, we must not forget our responsibilities in "built-up areas."

The book is pleasantly, if a trifle dully, got up. The photographs are very well chosen both as pictures and as illustrations. It is a pity, however, that they do not correspond more exactly with the text; a redistribution according to content might be less engaging, but it would make for easier reading. The inclusion of an index is good.

GODFREY SAMUEL

England and Art

"CREATIVE ART IN ENGLAND." By William Johnstone. London: Stanley Nott Ltd. Price 21s. net.

A subtle but definite change seems to be taking place in the attitude of the English public to matters concerning art. The intensity of the industrial advance in this country early last century and the greater completeness of industrialization in comparison with the rest of Europe affected, inevitably, not only art but the public's attitude to art. Although strongly based on individualism this industrial society fears and dislikes the individual; individualism is interpreted within narrow boundaries, boundaries partly of class but mainly of purpose; if the conventions and aims of the society are questioned, rejection *must* result, since it is the weapon nearest at hand and simplest in use for society to quiet its fear. Too little attention has, perhaps, been paid to the extent to which fear has contributed to the deterioration of the place of art in recent life. The psychological factors have been ignored and the history of that deterioration has been read in purely material terms so that something, surely, has been missed.

Whatever the basic reason, industrialism found no use for the artist and rejected him. And yet today there seems to be this change taking place. More and more foreign artists, as well as architects, doctors and hundreds of students, are coming to live in this country, or visit it and depart convinced that it is, in fact, becoming a cultural centre, possibly usurping Paris's throne—a fact not altogether explained by the closing of German, Italian and, to some extent, Russian doors to progressive cultural movements. There is, too, a certain reassessment here of the English cultural tradition in many of its aspects: the part played by Morris, Voysey and their contemporaries and their influence on decoration and architecture have for some time been accepted; more recently Cecil Sharpe and, since his death, Vaughan Williams have reinstated English folk music. And in art? Apart from a tardy award to Constable of paternity to French Impressionism art has been largely neglected. Yet England has a tradition in art of no mean stature, and now, with a renewal of vital activity both indigenous and actuated by foreign stimulus, would seem a particularly appropriate moment for its stature to be revealed.

That is what *Creative Art in England* sets out to do. Unhappily a great opportunity has been badly missed. A lot of money has been spent on the book—there are some 180 illustrations—and obviously a lot of trouble. But Mr. Johnstone's knowledge of his subject and his discrimination appear, from the book he has produced, to be lamentably slight; and his prose is very inferior to the art he writes about. The result is a hotch-potch consisting of many excellent illustrations, many omissions (there is not a single example of stained glass) and a lot of loose theorizing. Excelling all, in the capacity to aggravate, are the captions to the modern work, which parcel up the artists, tie a neat label round their necks and conveniently place them on the shelf. Everything cut and dried and you know just what every one stands for.

Mr. Johnstone's survey ends with three appendices, covering some thirty pages, in which he disposes of "the essential elements of painting and plastic art," The Future of Art in England, The Bases for a British Art, and Art in Industry and Schools. The matter is all very sensible but not exactly new or original, nor does the manner of writing attain the level one expects in a guinea book on art.

S. JOHN WOODS

Data for Civic Design

TOWN HALLS. By A. Calveley Cotton, A.R.I.B.A. London: The Architectural Press. Price 6s. net.

The ideal competition programme should obviously state all the absolutely known facts concerning the problem; to send the competitors on a sort of buried treasure hunt for what, in any case, is already settled in the mind of the assessor is merely waste of everybody's time and energy. It also introduces the undesirable element of luck at the wrong point. Assessors and promoters of architectural competitions are still very remiss in this matter and so Mr. Calveley Cotton has come to the rescue with a book which deals with both facts and opinions in Town Hall design, being careful, however, to distinguish between the two. The words Town Hall are used in their widest sense to include Municipal Offices and Assembly Halls and Law Courts.

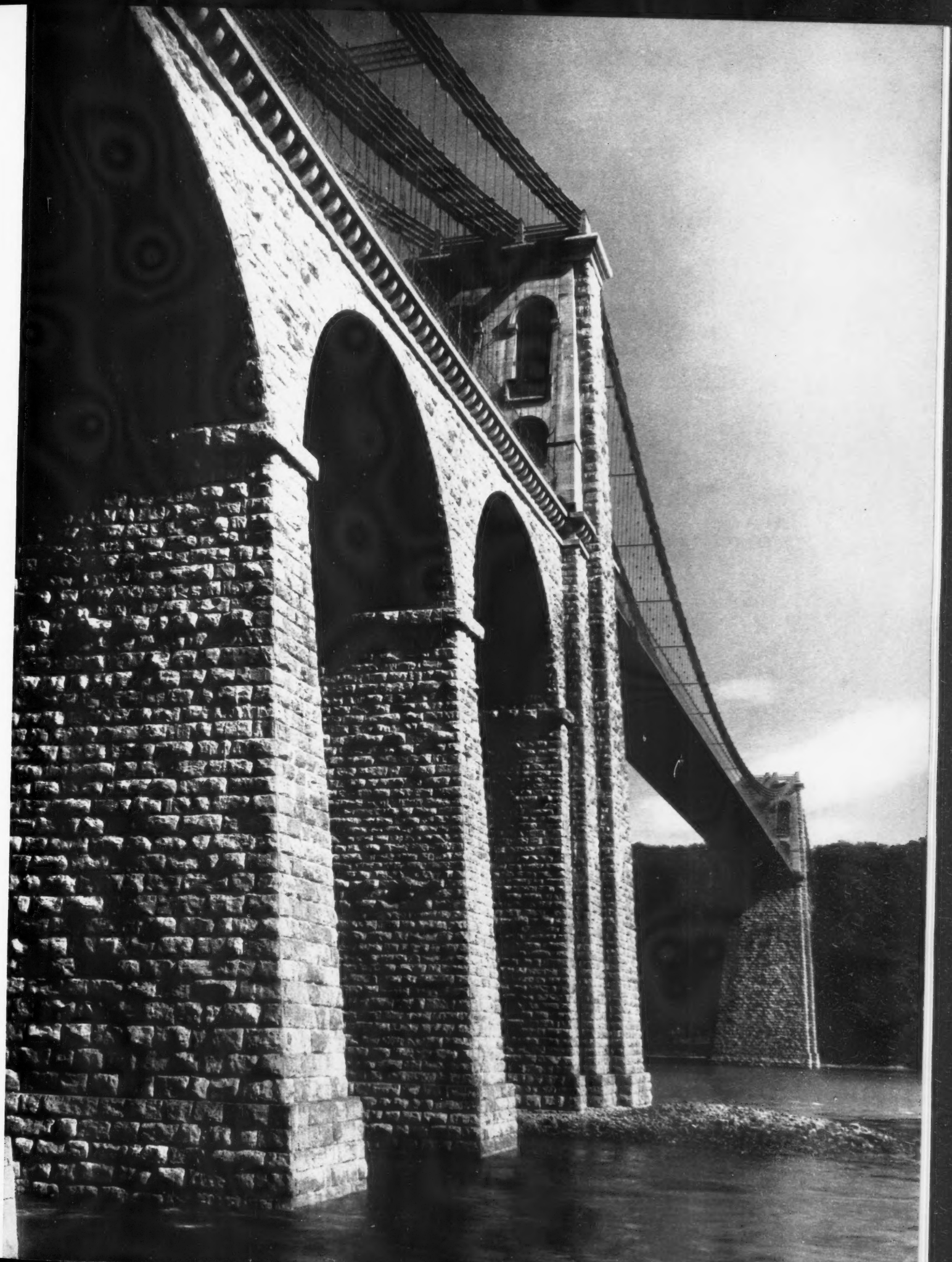
Municipal authorities have at last realized the merits of the competition system and the open competition is now the usual method of selecting the Town Hall architect. Two or three such competitions are nearly always in full swing and to the competitors this book will prove invaluable; incidentally, it might be useful to the assessor! The only trouble is that when the clean plan has at length been arrived at with everything nicely placed in accordance with Mr. Cotton's principles, one will suddenly realize that nearly all the other competitors will have bought or borrowed the book, too.

The author gives a number of invaluable plans "as finally built" (a good point this, although it unfortunately cuts out Norwich which is still under construction), some useful local statistics without which the plans cannot be fully appreciated and a full argument as to the pros and cons of planning in each department. A lot of valuable dimensions are also given; in the long run these are usually the most used part of a book of this type. In his general arguments the author is sound, if orthodox, and he is probably right to be so, assessors and town-clerks being what they are. The book is intended to be of really practical use to contemporary designers and it probably achieves its purpose. After all, as the author says:

"There are many difficulties in the way of Utopian schemes for perfect planning, but there are more in the way when you try to persuade people to do things for their grandchildren to enjoy. Only concrete evidence that a town is losing a lot of money because its municipal buildings are both too small and badly planned, and the continuing production by architects of civic buildings which are really efficient, will cause local authorities to become bolder and more far-sighted in their architectural outlook."

Perhaps the time has not yet come in this country to set up a new ideology in Town Hall design—can it ever come—through the competition system? It must always be remembered that if assessors don't actually get younger, the generations change and sooner or later someone may do for the English Town Hall, in the Modern movement, what Stockholm and Hilversum did in the romantic movement of post-war days. In the meantime, to he who would build the Town Halls of today, we suggest Mr. Cotton's book as an invaluable work of reference to have by one in the office.

R. F. JORDAN



OVERLEAF: *AT CLOSE RANGE*

THE MENAI SUSPENSION BRIDGE

The announcement that the Minister of Transport intends to rebuild the Menai Suspension Bridge came as a shock to those who regard it as one of the greatest monuments of English nineteenth-century civilization. Telford's masterpiece, constructed between 1819 and 1826, it has stood since then as a memorial to the pioneer achievements that brought English engineers a world-wide reputation at that time, being besides one of the most beautiful bridges we possess. Fortunately it appears that it is the Minister's intention that it shall be reconstructed as much as possible in its original form. How completely will that be possible? The multiple cables are to be replaced by fewer cables of high-tensile steel: well and good. But the carriageways are also to be widened. Can the spirit and proportion of Telford's elegant structure survive the enlargement of the openings in the masonry piers that this will involve? Can we at least hope that the bridge as it may survive be scheduled, immediately on completion of the reconstruction, as an ancient monument: also that some of the best of the remaining bridges of Telford and his associates be similarly scheduled? The bridge has a total span between piers of 570 feet. This photograph of it (by Will Taylor) is taken from the Anglesea side.

PLATE iii, *April* 1937

DECORATION

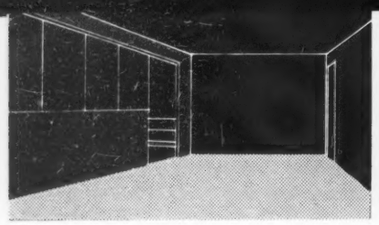
THE ARCHITECTURAL REVIEW SUPPLEMENT

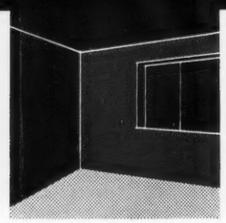
APRIL
1937

●

STANDARD DESIGNS

Specimens from a range of garden furniture designed by E. and O. Gemes. The frames are of steel tube, painted in bright colours, with the chairs and benches of large wooden slats. These models are now mass-produced in Switzerland by the firm of Suter-Strehler, Söhne & Co. of Zurich.





THE PROBLEM

FLAT AT H

FURNITURE AND DECO

One of the standard three-bedroom flats at Highpoint. The elementary form, the long living-room and the dining-room off it, constituting the conditions laid down for the architects, is shown on the left.

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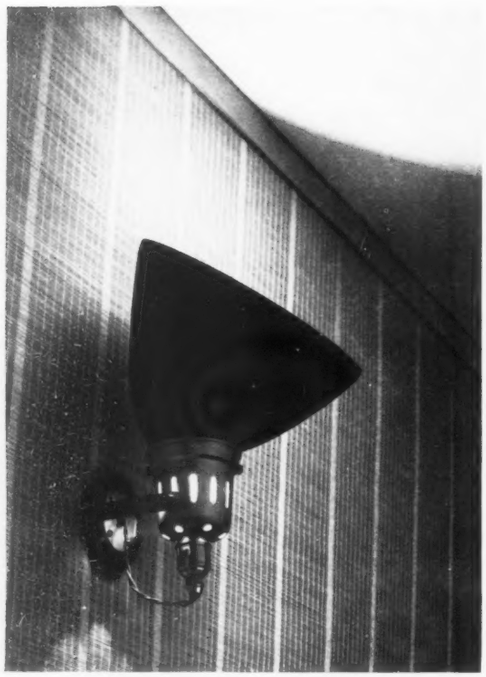
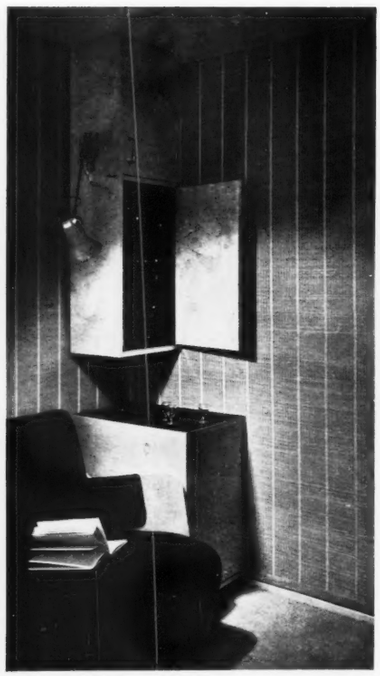
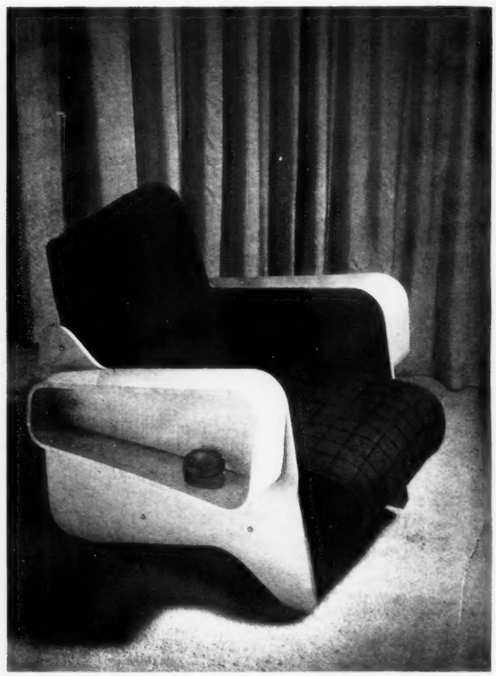


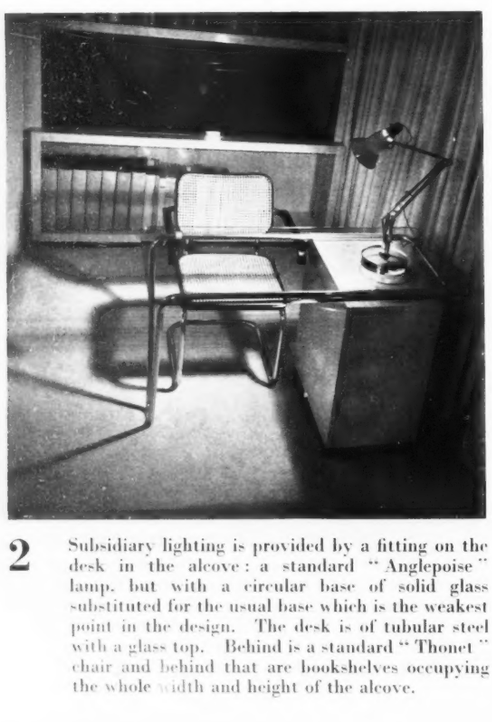
1 The principal artificial lighting is by reflection off the ceiling from a fitting placed high up on the wall opposite the windows. It is a standard shop-display reflector slightly modified at the base. The photograph shows also the grass matting with which the whole of this wall has been covered. The same material forms the screen at the far end of the room. The other walls are left white.



3 At the opposite corner of the living-room from the alcove, in a corner formed by the erection of a matting screen (see plan) is an upholstered settee and a hung cocktail cupboard. The latter is in polished sycamore, cellulosed blue inside. Another subsidiary light fitting is attached to its side.

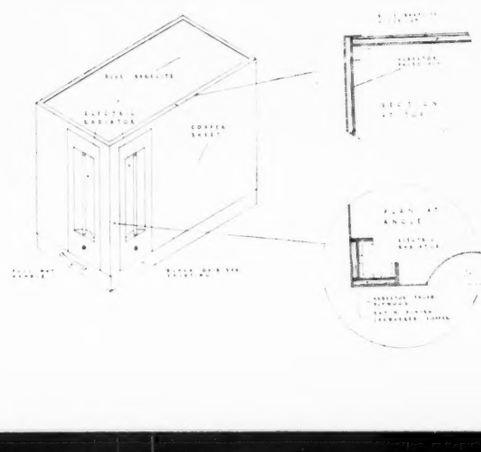


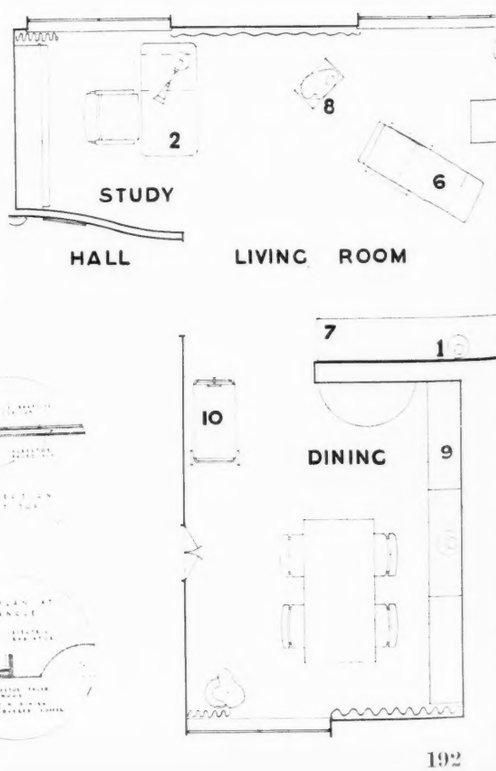
5 An easy chair in light laminated wood, designed by the architects, is upholstered in a dark reddish-brown check woollen material, the same material being used for upholstering the settee (seen in 3) and the lounge chair (6). The floor-covering is a woollen pile carpet, close-covering both living- and dining-room, white in colour.



2 Subsidiary lighting is provided by a fitting on the desk in the alcove: a standard "Anglepoise" lamp, but with a circular base of solid glass substituted for the usual base which is the weakest point in the design. The desk is of tubular steel with a glass top. Behind is a standard "Thonet" chair and behind that are bookshelves occupying the whole width and height of the alcove.

4 The living-room is heated by a specially designed free-standing electric fire (below), placed in the centre of the room where it can form a social focus, the architects realizing that the normal position of the fire is dictated only by the necessity of a flue. The fire contains four elements, two at each opposite corner, and is large enough to form a table. It is of copper, with a blue bakelite top.

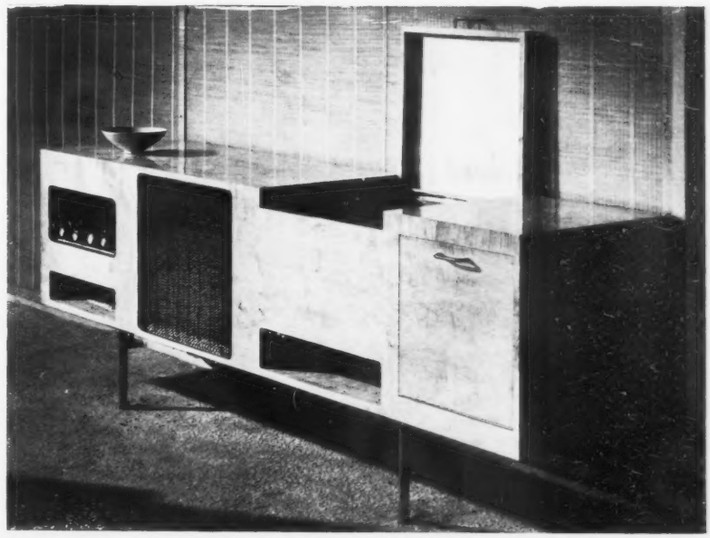




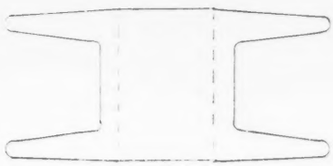
HIGHPOINT, HIGHGATE

DECORATION BY MARCEL BREUER AND F. R. S. YORKE

On the remainder of these two pages are shown the elements the architects contributed in order to complete the flat for human occupation and enjoyment. The finished result is illustrated overleaf.

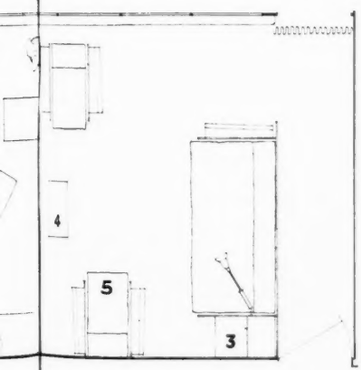


6 The lounge chair, covered in a similar brown woollen material to the rest of the upholstered furniture, is one designed by Marcel Breuer for standard production by "Isokon." It has a frame of laminated wood and seat of plywood. The small table seen beyond the chair in the photograph is ingeniously made by cutting a sheet of plywood to shape and bending it in two places—as shown in the diagram adjacent.

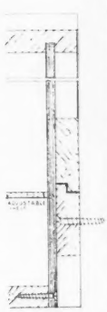


7 Music is provided for in a long piece of furniture in polished sycamore, built against the wall clear of the floor and supported in front by two polished steel tubes. From left to right are the wireless control panel, the loud-speaker aperture filled with polished wire mesh, the gramophone with hinged lid and a cabinet for gramophone records.

8 The non-utilitarian furnishing of the room is completed by a grey carved stone figure by Henry Moore, placed on a square black pedestal and silhouetted against the window curtains. The latter are also grey.

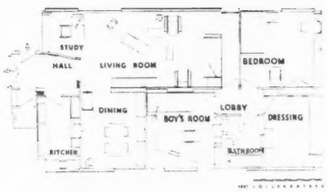


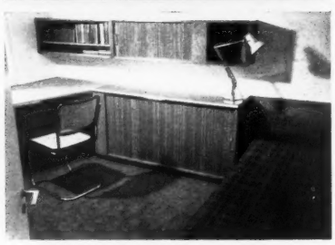
Above is the plan of the two rooms furnished. The numbers correspond to the numbers of the photographs or drawings of the various elements employed. The only modification the architects made to the standard Highpoint flat plan was the building of the screen at the right-hand end of the living-room (with the settee backing on to it) to form a separate passage leading to the door to the bedroom lobby. The corridor effect of the long living-room is thus largely avoided.



9 In the dining-room a china and glass cabinet (photograph below), in black cellulosed wood with sliding glass doors, runs the whole length of the room, cantilevered from the wall. Its manner of fixing is shown in the sketch on the left below.

10 The dining-room is served by a trolley, right, also specially designed, in tubular steel. In the same photograph is shown the only picture in the two rooms, an oil painting by Juan Gris.





THE FINISHED FLAT

Above are the completed living room and dining room, showing the collective effect and function of the furnishing and decorating elements illustrated overleaf. The dining table, not illustrated independently, is in black laminated wood to the architects' design: the chairs are standard "Thonet" models. On the right are a small plan of the whole flat and photographs of built-in furniture designed by the architects in two of the bedrooms. The top fitting has hinged drawers flanking a mirror, the lower one, in a boy's bedroom, a large cupboard with rolling shutter.

COLOUR

By Ozenfant

Experiments, Rules, Facts

"There are, altogether, eight varieties of nose."—LEONARDO DA VINCI

The Ostwald Chart

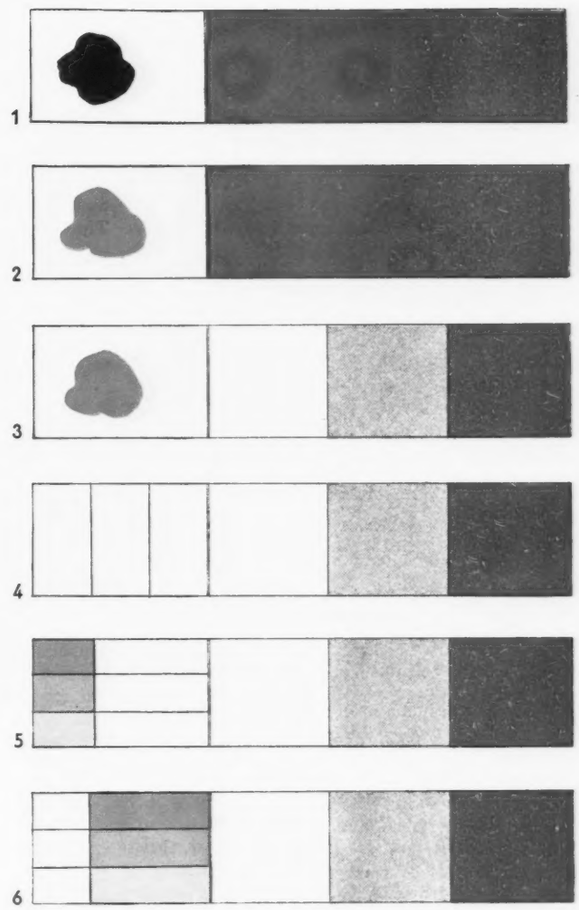
The phenomenon of colour is infinite. Possible colours are in fact infinite in number. What method can we adopt of classifying colours in order to escape from the infinite, or practically from chaos?

Take advantage of the fortunate imperfection of our sense of sight.

Our sight, like all our other feelings, cannot distinguish between two phenomena—colour for instance—unless the difference is sufficiently great. Consequently, the first classification to be established, for example for greys, is to lay down a scale of tints from black to white, each succeeding sample being *clearly distinguishable from the previous one.*

That is what Chevreul did, and it is the method which the physicist Ostwald has taken up again and improved on, for the purpose of setting out his chart. Working on the ideas and principles of Chevreul, Ostwald, thanks to modern chemistry, which offers pigmentary hues far more numerous than in the days of Chevreul, was able to carry all his work much further; and he made a special effort in the direction of facilitating practical application of colour.

Like Chevreul, Ostwald began by establishing a perfectly continuous range from black to white. Then he selected 24 well-defined hues, 12 of which are the complementaries



RELATIVE QUANTITIES (HUES AND NEUTRALS): THE RULE OF THREE. *In this series of examples it is quantity that is considered, not quality. Rubens, one of the greatest decorators of all time, wrote in his manuscript* de Coloribus *(unfortunately burnt when it was being shown at Antwerp): "Shadow and light together should not occupy more than a third of the picture; the other two-thirds should be kept for the half-tones." That is a bit dogmatic; what it says is shown in* 1.

It is insufficient. If one did not interpret *this rule one would find oneself never able to obtain an effect where brightness predominated. The rule should be completed. Doubtless Rubens did complete it, in his lost writings. One can imagine that what he meant by light and shadow was simply* contrast (*see figure* 10, *page* 197). *Two bright, even vivid, hues can react on each other to give the equivalent of light and shade (as in a Van Gogh), and if Rubens did not intend to imply this he will still have helped us to establish a useful rule—one can establish, indeed, many others, the one essential being not to operate by chance. Inside the building a white becomes grey; here, for simplicity's sake we represent it by pure white, and the neutral tints are represented by the grey. (The architect must use his sensibility and imagination to decide their actual values—we have never promised to turn the artist into a machine, only to cultivate and control his own sensibilities.)*

What we learn chiefly from the rule of Rubens is, first, the necessity of method, and, secondly, the "rule of three." Consider this for a moment: if you are classifying any phenomenon whatever (art included) at least three categories will be found necessary. Two will not be enough (more than three will often be clumsy): where will you put the luke-warm if you have only two categories, in that of the hot or that of the cold? Where would the respectable man go, if there were only the lower regions of criminals and the paradise of saints? Always we must have the two categories of extremes and the one of mediums. A rule based on the number "four" is a bad rule: psychologically, that is to say in feeling and intellectually, four is nothing but twice two. It is a static operation, giving absolute symmetry; boxing first to the right and then to the left, like a prince in his carriage. It is monotony. Three is dynamic; and art is part of life, which is dynamic.

Let us then (following Rubens) now divide the section of half-tints into three (figure 3). *The sum of the values gives us the medium value we want—as near as this diagrammatic representation can show.*

Applying the same principle to the third of our diagram containing the bright colours (figure 4)*—first for one hue only, we now find the organic rule functioning over the whole area: three values, hues (pure and intense), shades (darkened by black) and tints (lightened by white). And now (figure* 5) *let us try* two *hues with the three neutrals. We divide our third of bright colour again by three, but observing the law (it is more than a rule, it is a necessity): VARIETY IN UNITY. Our rule of three has already given us unity: we can add variety by making one hue dominate over the other* (5 or 6). *Which hue dominates can depend on the psychological effect we want to obtain, and we can make it dominate in the proportion of two-thirds to one-third, still conforming to our rule. Now also we have created three values: hue, unity, variety.*

These examples may appear less like sketches showing the effects of colours than like statistical charts. If so, we can improve the occasion by observing that statistical charts have a beauty of their own, not by virtue of what they represent but because they represent it by numbers. *And numbers are always an expression of natural phenomena, directly or indirectly. It is all part of Nature, and in the same sense these diagrams, explaining natural phenomena, are simply graphic or statistical.*

of the others. Through a very ingenious system of mixing, based on certain laws of visual perception established by Fechner, Ostwald built up his chart by the inter-mixing of the 24 key-colours and the range of greys. In practice he thus obtains a series of hues sufficiently numerous to identify all the perceptible hues.

His fundamental chart comprises a large number of hues, forming practically continuous ranges.

The reduced chart, which has been placed on the market,* includes only a selection of 680 colours, which is more than sufficient for practical identification. In fact, with this systematic selection, it is possible, with a close approximation, to select and describe any desired colour, because the difference between two consecutive hues is usually smaller than the changes which take place when the colour has become dry, or the alteration it undergoes a short time after being applied, under the action of atmospheric or chemical agents. What matters in decorating, as in painting itself, is not so much the absolute precision of the hue as a good æsthetic fundamental choice and an *efficient ratio* of hues.

Criticism of the Ostwald Chart

This instrument is not a perfect one; the samples are very small—about one square centimetre each.

For the moment, we must be satisfied with it; but we can suggest a way of improving it, so that it will provide architects with the instrument they lack.

But, first of all, let us learn how to use the Ostwald chart.

Small windows should first be made, cut out of pieces of white cardboard, to enable us to isolate the samples. It is absolutely impossible to use the chart unless we proceed in this manner. If the hues are not singled out, there is confusion both when judging them singly, and when comparing several together, as the reactions of neighbouring colours, one against the other, completely alter their aspect.

The samples are on matt surfaced paper. This works very well, if it is a question of choosing the tints of matt wall paints. But if we want to apply bright or varnish paint, it is advisable to look at the hues on the chart through a piece of cellophane, which gives the hue approximately the appearance of bright or varnish paint.

If strong colours are usually well reproduced on this chart, the very broken hues, pale-coloured greys, are not quite so perfect, though sufficient.

But, with these exceptions, we may consider that the architect possesses, already now, a working instrument which he should not ignore.

Modern architects, then, possess a tool which the ancients lacked. In the same way that the architect hands over to the contractor building plans as precise as are necessary, on which everything is dimensioned, he can now do the same as regards colours. Through an ingenious system of notation, each hue on the chart is simply characterized by *two letters and one figure*. It is obvious that, if the architect and the decorating contractor both possess a copy of the chart, it is possible for the architect to give the craftsman plans on which the colour is indicated, without it being necessary to give samples to the painter. The painter will only have to copy the sample on his own chart.

A Chart for the Architect

I believe that an immense service would be done to architects, decorators, house-painters, etc., if a chart especially adapted to their particular requirement were established. This chart might contain about a hundred hues. The difference between each hue would be much greater than in the Ostwald chart. This special chart would in any case not exclude the Ostwald chart, which could be used for "correcting"; that is to say, for inserting between two shades of the "architectural chart" a more correct hue, after experiment.

The "architectural chart" would be of large size: six foot by three foot panels.

A system of fixing would enable the samples to be placed in the actual position where the colour was to be applied. The panels could be made of light metal; one face would be painted with an oil varnish paint, and the back painted with a matt colour of the same hue.

Great Britain has a sufficiently powerful chemical industry to take the initiative with such a standard chart, which would render immense services to all the architects of all countries (and to the paint industry). The initiative could, of course, be undertaken by the Standards Office. Otherwise, a leading firm of colour makers (or the British Colour Council) could issue a chart.

I am aware that makers supply samples of their products, but these colours are never *systematically chosen*. We are suggesting selection corresponding exactly with the Ostwald chart itself, and not, as is generally the case, made in a haphazard way, and merely for the sake of the colour itself.

I do not think there can be one architect who will fail to realize the tremendous advantage which would result for the profession from the establishment and use of such an "architectural chart"; first, at the time the architect is choosing colours; secondly, for his clients; thirdly, at the time the work is being done.

Neither the architect, nor his clients, nor the painters, would need any longer to express themselves by means of symbols or metaphors, by gentle or violent waves of the hand, by inflections of the voice, by motions of the eyelids, in order to describe colours, were they able to judge the shades directly for themselves, from large surfaces located at the very place they will occupy. The chart might cost a few pounds; but what an enormous saving of time, of nerves, of failures to be made good, and attendant saving of money.

I am fully aware that the idea of any standardization is always accepted with great difficulty by architects, even in the matter of materials. The artist-architect is often the enemy, without knowing it, of art in architecture, as there is no greater enemy of art than lack of precision; lack of precision in colour is fatal to architecture. There is no possible precision without some means of checking.

Music lost nothing by being written down, in figures, notes and scales. If the keys of the piano are limited in number and the sounds possible on a violin infinite in number, that does not prevent playing out of tune on the violin. And it is not the possibility of playing out of tune on the violin which gives value to the violin, but the possibility of playing it in tune. It is in any case certain that the original string instruments have developed through the lute, the harp, to the piano, that is to devices such as the piano keys, giving automatically true notes; all musical instruments will continue to develop towards automatic trueness. The colour charts represent an attempt at standardization, at a precision of the same kind. The art of the architect has everything to gain from it.

All artists working with colour should read the immortal *Journal de Delacroix*.* This is a record, through a whole life, of the thoughts of a great artist and a very great mind, on colour; an artist who particularly occupied himself with colour phenomena, and who, so to speak, was the father of modern conceptions of colour.

Let us select from this diary the following statement, which emanates from this leader of romantic painters, and which strangely contradicts the romantic painters of our time, who believe that any method and any discipline are a hindrance in art. Let us therefore hear what Delacroix says:

"Les grands artistes partent seuls d'un point fixe."

Johann-Sebastian Bach, Purcell, Handel, Paul Valéry and any other great constructive artist would have endorsed this statement. Delacroix justifies what we are seeking here: *fixed points.*

Practical Exercises with the Charts

It is well, after having isolated a colour with the white frame, which I have described, to practise its exact reproduction, on a larger scale than that of the sample with water colours (gouache colours), which give a surface very similar to that of wallpaper, or indeed to that of distemper, sized paint, casein, etc. Further, one can imitate the same hues with oil paints, first without varnish in order to obtain the effect of ordinary oil paints; then with varnish in order to obtain hues similar to those of paints containing varnish or of enamels. As in every task, nothing can replace personal experiment: whatever may be the value of the rules we set down, when it is a matter of choosing colours in connection with architecture, it is essential to have made practical trials, so that these laws or rules cease to be abstractions, and assume in the mind of the architect the strength of facts verified by themselves. Therefore, the more copies of shades, juxtaposition of hues and of materials, the architect has made, the greater his experience (and consequently his freedom of composition).

He will then be in a position to examine the effect of the different hues on his sensibility and psychology; also the action of these hues and of their material on architecture, as we will show later on.

Up to the present, we have only given prominence to the hues and their value.

* Published in London (Winsor and Newton). The English chart was arranged on Ostwald's system by J. Scott-Taylor. We cannot give here all the ingenious details of the Ostwald method. They will be found in *A simple explanation of the Ostwald Colour System* by J. Scott-Taylor.

* Plon, Publishers, Paris.

The senses are very aware of progressions. That is again a general law ; a principle that pervades life. Animals, plants, crystals, perspective and vision : all action is by progression. We have remarked in our examples certain progressions from one surface to another of different value. These are not logarithmic progressions, such as a mathematician or physiologist might interest himself in, nor are they at all exact; rather are they complicated in application.

To arrive at a method of simplification it is only necessary to start with some foundation of sensibility—where it departs from chaos. If we tried to use logarithmic progressions we would not be greatly helped, because in the application to architecture so many factors arrive to modify such simple progressions, the fact, for example, that architecture is concerned with cubes, not with plane surfaces.

It is only a question of having a point of departure, and sensibility or feeling offers us this. However useful we may find rules and mathematics and geometry in art, we must not forget that what we are concerned with is the mathematics or geometry of sensations, of appearances.

Illustrations 7 and 8 show to what extent numerical rules can be regarded as exact. One observes that, in spite of the proportions of the two diagrams being the same, the difference in quality of the hues modifies the apparent size of the areas. It would be useless to aim at a precision that was abstract but unrealizable.

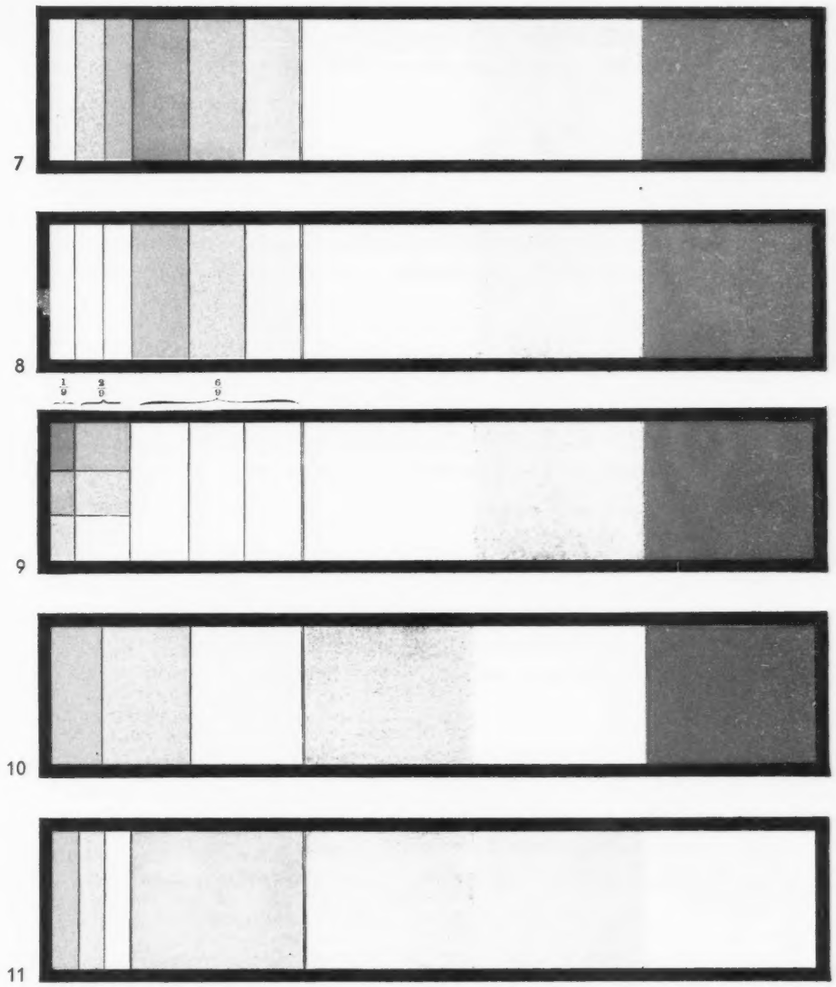
(Note that in examples 3 to 11 the separation of the neutrals into three equal parts is purely diagrammatic. We must naturally consider these neutral zones as being subject to enlargement or diminution relative to each other according to what effect it is desired to obtain. We have divided into three so as to keep to simple generalities and so as to clearly establish the scale of values of the three pots of colour, by hue and by neutrals.)

Illustration 9 shows three hues in the coloured third. One dominates, the yellow : 6/9 of the whole third of bright colour. The green : 2/9. A touch of red : 1/9. And always three values for each hue.

Illustration 10 : contrast of values. The values of the greys are the same as in 9. Observe how they react differently as the result of being situated differently. The values appear to change according to their neighbours—an example of the contradiction between facts and sensibility. The value is defined physically : the amount of light reflected by the body, but it is the appearance that matters.

Illustration 11 shows a scale of relative areas as applied to a room. For the sake of restfulness, the values are equalized, giving feeble contrasts. The green is the key-note of colour. The other sections give, from left to right : the value of the walls in direct light, the apparent *value of the white ceiling, the value of the walls at right angles to the light, and the value of the walls against the light.*

We have talked of rules, first because without rules there is chaos ; even when a rule is completely inverted that is better than total absence of method : art is not a game of chance (where one nearly always loses) ; secondly, because a rule serves as a foundation for sensibility ; thirdly, because, even applied contrariwise, a rule will still serve. A photographic negative can give interesting effects : it represents something definite by virtue of being the reverse of its positive.



***NOW AS TO METHOD:** how to set about planning the colour-scheme of a building, a decoration or a picture as follows :*

1, Study the psychological effect to be obtained (to be considered in the next article).
2, Make a plan of the developed surfaces (as illustrated in the last article).
3, Apply the rules set out above.
4, Remember Lao-Tse (see next page).
5, Correct the design according to sensibility.

These rules are worth just what they are found to be worth. And even the alternative of working just numerically is better than working by chance.

Other factors determine the effects of colours : in the first place, their "*material*"; then, quite specially, the mutual changes apparently produced on each hue, by the vicinity of other hues. This is what we represent in the illustrations to this article.

Let us for the time being rapidly pass over the question of the material of the paints, as we shall have to return to it in connection with the "psychology" of white. And, in any case, the principle is sufficiently familiar that it need not be emphasized here : that matt colours always have a greater sweetness than bright colours, which have strength. It is well, however, to make this point. If a maximum of intensity of hue is sought after, matt colours can never reach the same intensity as bright colours, and, amongst the latter, varnish colours (particularly those actually containing varnish) are the most powerful. When light strikes a matt surface, a portion of the white light—that which falls on the particles of colour turned very obliquely in relation to the rays—bounces off the asperities

without being filtered, that is to say, it comes back to our eyes unaltered—white. These rays lighten the hue by mingling with the filtered rays. On the other hand, when the colour is more or less translucent, owing to the more or less great quantity of oil or varnish it contains, the rays can penetrate into the coating of paint and come out entirely filtered: the film of colour then behaves like coloured glass. The light in that case is almost entirely filtered, but only if one looks at the surface at an angle not too far removed from a right angle; because, when a shiny surface is observed at a very wide angle in relation to the general direction of the lighting, the surface behaves like a mirror, and the light comes back to our eyes, mostly without being coloured, less coloured even than in the case of matt paint.

The bearing of this rule on architecture is this:—If it is desired to obtain a great intensity of colour, the wall against the light must be brightly painted, and the other walls must be painted matt, in order to avoid the mirror effect. Moreover, an undercoating, preliminary and very light (white or almost white), under the colour, helps to bring out the colour by acting as a reflector, like a mirror under a coloured glass.

It is obvious that these various properties can be used *the other way round*, if it is thought desirable for the architectural efficiency.

Let us now make it clear that when we set down *rules*, we do not intend that they should always be adhered to. We believe, on the contrary, that the useful rule—that based on a real phenomenon—is only a fixed point; it provides convenient counsel, better than nothing. We also believe that an artist can often usefully transgress these rules. But that, of course, is quite a different matter from acting in a haphazard way, or wilfully ignoring a necessary rule. It is somewhat the same with virtue, which, in special circumstances, need not be an absolute slave to sacred or other dogma (to civil and moral codes), it only must not ignore them unreasonably.

Now, let us deal with the Ostwald creed,* but without attaching too much imperative value to it:

* The English version is that of J. Scott-Taylor, already quoted.

"1. *GREY HARMONIES. These presuppose the use of at least three Shades in the Achromatic Scale*, the intervals of which must be equal. *Thus while* ceg *or* cgl, *for instance, give harmonious combinations,* cel *or* egp *would be inharmonious.*

"2. Monochromatic (or Self-Coloured) Harmonies *result when Rule No.* 1 *is applied to the members of the Isotint, Isotone, and Isochrome Series. Examples are, for the Isotints,* 21*a*, 21*e*, 21*i*; *for the Isotones,* 2*ec*, 2*ic*, 2*nc*; *and for the Isochromes, or Shadow Series,* 2*ca*, 2*ec*, *and* 2*ge*.

"3. Heterochromatic Harmonies, or Harmonies of different Hues. *These are the only harmonies which, up to the present, have been thought worth considering, and since the following laws were unknown, and previous attempts at systematization have usually been based on an incorrectly divided Colour Circle, successful results have not hitherto been obtainable.*

"*A. The principal law is that, in the first place only* Isovalent *Colours, viz., those containing equal amounts of White and Black should be combined. These Colours are designated by the same letters, and their Hues should be equidistant in the Chromatic Circle. Their numbers in this Circle, therefore, show equal differences. The divisions of the Circle to be taken into consideration are those into* 2, 3, 4, 6 *or* 8 *Parts. These give numerical differences of* 12, 8, 6, 4 *and* 3 *respectively. Examples are:—*

"*Dyads*—9*ie and* 21*ie*.

"*Triads*—5*ga*, 13*ga*, 21*ga*.

"*Tetrads*—31*c*, 91*c*, 151*c*, 211*c*.

"*Sextads*—1*ng*, 5*ng*, 9*ng*, *etc., up to* 21*ng*.

"*Octads*—2*ca*, 5*ca*, 8*ca*, *etc., up to* 23*ca*.

"*B. Harmonies based on three or more subdivisions of the Colour Circle are more interesting if one or several members are omitted. Unilaterally Oriented Colour groups, possessing individual characteristics varying with the region of the Chromatic Circle from which the colours have been taken, may thus be obtained.*

"*C. In adding Achromatic Colours to Harmonies of different hues, the letters must correspond. Thus in the triad based on* 'ga' *given above, White* a *and Grey* g *are the only achromatic colours suitable, and in no case must Black be used.*

"*D. In all these Harmonies Single Colours may be supplemented by other members of the Isochromes belonging to them. Thus in the Dyad Harmony,* 9*ie*, 21*ie*, *we may add* 21*ea*, 21*gc and* 211*g*. *Several such shades adjoining each other may likewise be added, subject to compliance with Law* 1.

"*E. If, finally, the areas of Colours placed in juxtaposition are very unequal, the Isovalent Colour occupying the smaller area should be replaced by a purer colour taken from the same Isotint Series. If for instance in the Harmony* 9*ie*, 21*ie the Red occupies a comparatively small area, then* 9*ic or* 9*ia should be substituted for it.*"

Are these really natural *laws*? that is to say absolute truths? They are rules, and nothing but rules; better than nothing, no doubt, but not laws. If the architect has not systematically trained his sensitiveness, and if his lack of experience is not too great, these rules may be useful to him.

Ostwald's rules, however, only give—and only profess to give—indications of *harmony*.

What does this really mean?

Pleasant harmonies, *pleasing* chords.

But, is the beautiful necessarily pleasing?

Often, the truly beautiful is, if not displeasing, at any rate something quite different from pleasing.

There is something serious in the really beautiful, even if it is only a room. A *fine* room is not anything but pleasing. Ostwald's rules, for the sake of simplicity, can be compared to the laws of musical harmony taught in conservatoires. These, by determining the "permissible" consonant chords and the "prohibited" dissonant chords, give the means of never being *displeasing* to the ear. Now, all the great musicians (Bach above all perhaps) consistently ignored these supposed obligations! But they were not ignorant of them.

Never was art more strictly codified than Egyptian art; yet, with what *freedom* these rules were often *interpreted* to produce masterpieces! Never was painting more codified than Chinese painting. Yet, let us remember what Lao-Tse said:—

"*SOME CONSIDER IT NOBLE TO HAVE SOME METHOD, OTHERS CONSIDER IT EQUALLY NOBLE TO HAVE NO METHOD. TO HAVE NO METHOD IS BAD, TO ADHERE STRICTLY TO METHOD IS WORSE STILL. IT IS NECESSARY AT FIRST TO OBSERVE A STRICT RULE, THEN TO PENETRATE INTELLIGENTLY INTO ALL THE TRANSFORMATIONS. THE POSSESSION OF METHOD LIBERATES US FROM THE NECESSITY OF POSSESSING METHOD.*"

Let us understand. And if I understand Chinese, I understand this: The possession of method gives us freedom.

ANTHOLOGY

Firmness and Delight

Thus vanishes the argument from structure. The prestige which still, in all our thought, attaches to mechanical considerations, has given to so weak a case a perverse vitality. One central point should, however, be clear from this analysis. It may be restated in conclusion, for it is important. Two senses of "structure" have been entangled and confused. Structure, in one sense, is the scientific method of "well-building." Its aim is "*firmness*." Its end is achieved when once the stability of architecture is assured. And any means to that end are, scientifically, justified in proportion to their effectiveness. Structure, but now in a different sense, is also the basis of architectural "*delight*." For architecture, realised æsthetically, is not mere line or pattern. It is an art in three dimensions, with all the consequence of that. It is an art of spaces and of solids, a felt relation between ponderable things, an adjustment to one another of evident forces, a grouping of material bodies subject *like ourselves* to certain elementary laws. Weight and resistance, burden and effort, weakness and power, are elements in our own experience, and inseparable in that experience from feelings of ease, exultation, or distress. But weight and resistance, weakness and power, are manifest elements also in architecture, which enacts through their means a kind of human drama. Through them the mechanical solutions of mechanical problems achieve an æsthetic interest and an ideal value. Structure, then, is, on the one hand, the technique by which the art of architecture is made possible; and, on the other hand, it is part of its artistic content. But in the first case it is subject to mechanical laws purely, in the second to psychological laws. This double function, or double significance, of structure is the cause of our confusion. For the æsthetic efficacy of structure does not develop or vary *pari passu* with structural technique. They stand in relation to one another, but not in a fixed relation. Some structural expedients, though valid technically, are not valid æsthetically, and *vice versa*. Many forces which operate in the mechanical construction of a building are prominently displayed and sharply realisable. They have a mastery over the imagination far in excess, perhaps, of their effective use. Other forces, of equal moment towards stability, remain hidden from the eye. They escape us altogether; or, calculated by the intellect, still find no echo in our physical imagination. They do not express themselves in our terms. They are not powerful over us for delight.

In proportion as these differences became distinguished, the *art* of architecture was bound to detach itself from mechanical science. The art of architecture studies not structure in itself, but the effect of structure on the human spirit. Empirically, by intuition and example, it learns where to discard, where to conceal, where to emphasise, and where to imitate, the facts of construction. It creates, by degrees, a humanised dynamics. For that task, constructive science is a useful slave, and perhaps a natural ally, but certainly a blind master. The builders of the Renaissance gave architecture for the first time a wholly conscious liberty of aim, and released it from mechanical subservience. To recall the art of architecture to that obedience is to reverse a natural process, and cast away its opportunity. The Mechanical Fallacy, in its zeal for structure, refuses, in the architecture of the Renaissance, an art where structure is raised to the ideal. It looks in poetry for the syntax of a naked prose.

GEOFFREY SCOTT

[The Architecture of Humanism. New Edition: Constable and Company Ltd.]

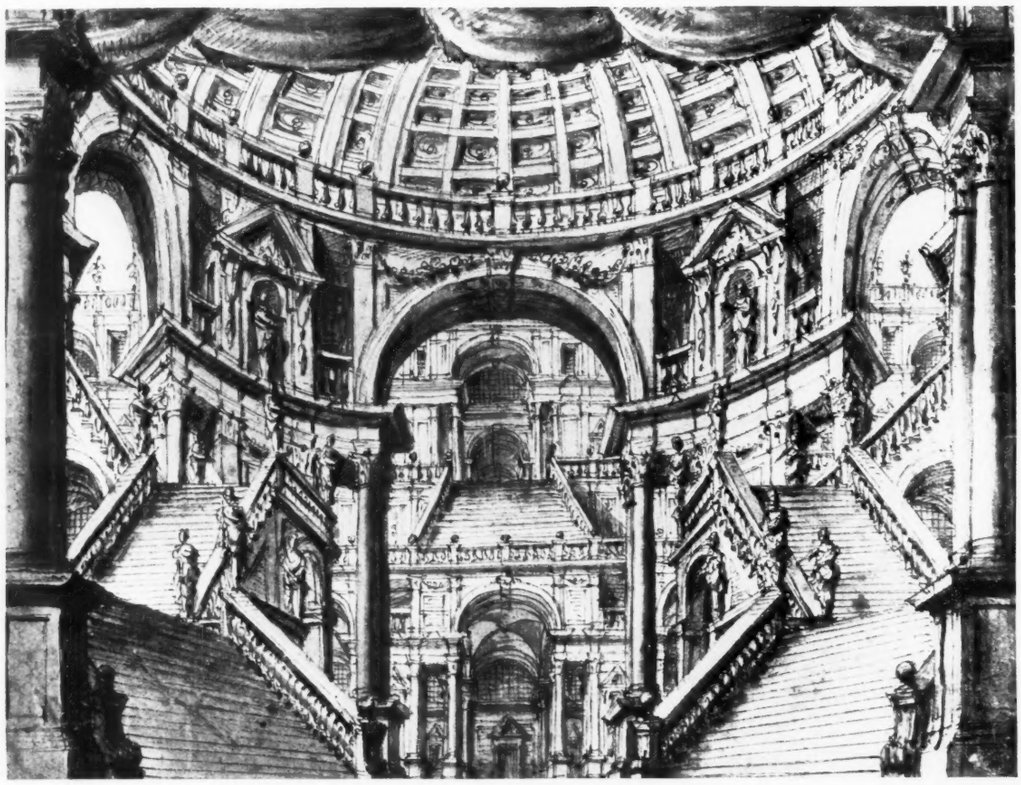
MARGINALIA

Linguistic Note

For some time we have been accustomed to the use of the word "modernistic" in the description of that all too familiar style of decoration that relies for its effect on the incorporation of a few arbitrarily selected features connected in the public mind with the Modern Movement proper: for rooms and buildings which hope to conceal their homely nineteenth century origins beneath a thick layer of chromium steel, plate glass and "jazz" carpets. It has been left to a writer in the *New Yorker* to coin the useful, though specialized derivative, for describing a certain type of glassware that is apparently as popular in the luxury lounges of the United States as it is here— "modernique." A thoroughly useful and expressive word which it is to be hoped will commend itself to all interested in firmly establishing in the public mind the vast difference between the genuinely modern article and the rest; one of the most pressing needs of our time.

The Roads Supplement

In connection with the section on ROADS that appears in this issue, several acknowledgments should be made for help kindly given: to Col. Mervyn O'Gorman, for permission to quote from his vigorous and enlightened address to the Architecture Club on the subject of Trunk Roads; to Mr. Alfred Cracknell, photographer, for a great deal of trouble taken with special photographs, including the series on pages 170–171; to Mr. C. D. Buchanan, author of the principal article, who also took many of the snapshots that illustrate his points; to Messrs. Crow, Catchpole & Co. for the loan of the photograph of the Brighton-Rottingdean coastal road reproduced on page 155; and to the following for other photographs: Mr. G. L. Pepler (of the Ministry of Health), the German State Railways, Mr. Norman Westwood, Mr. Will Taylor, the Council for the Preservation of Rural England, Professor Moholy-Nagy, Mr. Geoffrey Boumphrey, "Concrete Way," the London Passenger Transport Board, the "Architectural Record," Aerofilms, Ltd. and the Aerial Photographic Co.



An architectural design for theatrical scenery by Guiseppe Galli (1696-1757). From the exhibition of imaginary architectural compositions at the Victoria and Albert Museum. (See note below.)

The Car-parking Crisis

The proposal of the Minister of Transport to abolish all street-parking in London has, not unnaturally, aroused a storm of protest, most of it, for such alas is human nature, based on purely selfish motives more or less thinly disguised by such slogans and signatures as *pro bono publico*, "in the best interests of the community," etc. Regarded from the standpoint of the bus, tube and taxi user the measure seems an admirable one as far as it goes. But what is the ultimate object aimed at? If it is intended to force, by driving all the stationary cars off the streets, the garages in central London to increase their accommodation, preferably underground, well and good. But if on the other hand, it is merely a temporary device by which it is hoped to postpone essential street-widening operations as long as possible and to remove such vital questions as the provision of a new north and south traffic artery out of the realm of immediate practical politics, then the more opposition it arouses the better.

Museum Exhibition

Among the numberless widely-publicized art-shows with which the capital abounds at this time of year, it is all too easy to overlook the special displays which are organized in the print and painting departments of our museums. But one seldom passes through the Print Room at the British Museum or the Department of Printing, Engraving and Design at the V. and A. without being forced to spend at least a quarter-of-an-hour examining a small but admirably-arranged exhibition of some specialized school or branch of art. At the moment the visitor to the latter institution will discover a most interesting collection, limited in numbers but high in quality, of drawings of imaginary architectural compositions by various members of the Bibiena family and other contemporary stage designers.

The effect which these splendid products of a small and exclusive group of highly-trained virtuosi produce on the twentieth-century observer is one of awe-struck admiration: a sentiment that is considerably reinforced by the contrast provided by those marble halls in Sir Aston Webb's finest Pomp-and-Circumstance style through which he has just passed. The fact that these drawings are of buildings which never achieved a more concrete realization than that provided by paint and canvas is irrelevant. It is the spectacle of so fantastic and so rich an imagination functioning on purely architectural lines that is impressive. How was it that these eighteenth-century Italians could allow their flights of fancy to soar to such incredible heights without making any sacrifice of coherence or design, whereas the moment any modern architect gives way to whimsy (e.g. in exhibition buildings and cinema sets) proportion, balance and all the other architectural virtues fly straight out of the window? The answer surely lies in the fact that the Bibienas and their associates were accustomed to work in a universally accepted vernacular. The various elements which in their fantasies go to make up the astonishing whole are exactly the same as those employed by all the architects of the period in the course of their every-day practice: it is only the change of scale and the freedom from the restriction imposed by financial considerations and the intractability of the materials of construction that renders them exceptional. Today such a vernacular does not exist and in its absence the architect is forced to fall back on his own unaided powers of invention which are never sufficient: for the imagination is only capable of its most extensive flights when subject to discipline. Otherwise it can only achieve a "sound and fury signifying nothing."

Coronation Planting

The custom of planting trees to celebrate noteworthy events is no new one. During the French Revolution the village squares of France abounded in Trees of Liberty, while in England the traveller frequently comes across, both on public ground and in private parks, neatly ticketed oaks or chestnuts planted in commemoration of the visit of some notable or other, usually by the great man himself. Queen Victoria, King Edward, Lord Tennyson and, oddly enough, Garibaldi have all of them left these arboreal witnesses to their presence in various parts of the country. Hitherto such commemorative planting has been confined to individuals and the resultant increase in the tree population of the country has been negligible, but now an effort is being made to adopt this ancient practice on a large and co-ordinated scale. The Coronation Planting Committee has been set up with the object of enlisting the aid of local authorities and individuals all over the country "to urge that, wherever funds exist for the purpose of celebrating the Coronation, some portion of the money shall be allocated to permanent schemes for increasing the beauty of our towns, villages and countryside." While few schemes of decoration involving bunting and tinsel, etc., however talented the designers, are likely to command universal approval, there can be nothing else for the extensive provision of a permanent decoration of trees and flowers. The committee has already issued two extremely well produced little pamphlets, "The Village, how to make and keep it beautiful," and "Suggestions for commemorative Tree-planting," both priced sixpence. The former, in addition to much excellent advice on the subject of litter, house refuse, petrol stations, electric power lines, and other menaces to the amenities, contains also concrete suggestions dealing with other necessary improvements which are not in themselves in the least menacing but are all too likely to become so if not planned with foresight and intelligence, such as allotments, village halls and signs. It also contains the details of a threefold competition for villages. The latter is full of excellent advice on the subject of what trees to plant and where and how to plant them. It is to be hoped that the committee will find the greatest possible measure of support throughout the kingdom. Further information can be obtained from the Coronation Planting Committee, 68, Victoria Street, S.W.1.

Change for the sake of change

An inability to let well alone, a passion for totally unnecessary improvements, is one of the major evils of the day and one from which few people seem nowadays to be exempt. First of all that admirable and distinctive headgear which had for so long rendered the postman a unique and dignified figure, was abolished in favour of a cap which not only reduced him to the level of the tram conductor, or the special constable, but also cunningly directed the rain straight down the back of his neck. Now one hears rumours that the fireman's helmet, surely one of the most majestic headpieces ever devised by man, is to be replaced by one made of asbestos and rubber! However, these outrages, deeply as they must be resented by all intelligent persons, are not perhaps the immediate concern of architects. Another deplorable series of metropolitan innovations undoubtedly are.

Few people can fail to have noticed the frightful experiments which the authorities are conducting with that beloved old friend—the metropolitan lamp-post. Exactly with what object is not yet apparent. In the Bayswater Road a string of lights now swing suspended from monstrous drain-pipes, shedding a gloomy radiance on the crown of the road and leaving the wretched pedestrian to grope his way along the pavements in stygian darkness. And everywhere there is a mania for aluminium paint which gives an appearance of shoddy cheapness alike to the art-nouveau standards along the Embankment, the high-renaissance candelabra in Trafalgar Square and the plain, dignified Victorian lamp-posts which are still occasionally allowed to survive in forgotten back streets. And as for those illuminated ostrich eggs in Piccadilly Circus, by the light of which one can, according to the proud boast of the L.C.C., read a newspaper at midnight, the less said the better. Anyhow, if anyone wants to read newspapers in Piccadilly Circus at midnight they should jolly well be made to take a flashlamp.

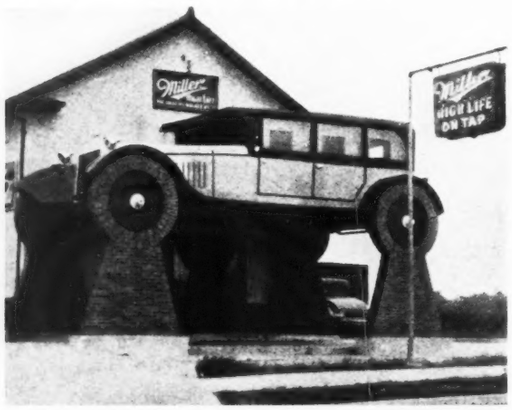
Aesthetics and Bureaucracy

In the course of a spirited, justifiable and slightly incoherent protest against the invasion of Reigate and the spoliation of the neighbourhood by the Ministry of Transport in carrying out a new road scheme, a correspondent in the *Daily Telegraph* puts the question: "Are we to accept the reproach that we are governed by a bureaucracy devoid of any æsthetic sense?"

The answer is, of course, yes, yes, a thousand times yes! The rule of the bureaucrats is quite sufficiently intolerable as it is, imagination boggles at the prospect of government by bureaucrats who had acquired an æsthetic sense. After all, an æsthetic sense is not the same as the ability to ride a bicycle or a working knowledge of plumbing, which an individual either possesses or does not. If Brown is well known to be able to ride a bicycle we know

"The trees and flowers are the most effective form of decoration." Westmill, Hertford, at the time of the Jubilee, 1935. From "The Village, how to make and keep it beautiful." (See note on this page.)

MODERN TREASURY—VIII.



"The AUTO CABIN is to be found on Hiawatha Avenue, Minneapolis, Minn. The *tonneau* of the car is a charming sun porch reached by stairs from inside the building."

"LIFE" [New York]

exactly where we stand in the matter, but if on the other hand he is generally admitted to have an æsthetic sense, we have no idea as to what he may let us in for. He may wear sandals, live in a garden suburb and have a passion for Della Robbia plaques: or he may live in a mews, eschew the use of capital letters and paint watercolours in the manner of Salvador Dali. Possibly he spends all his spare time writing monographs in the *Burlington* on Byzantine ivories, or again he may employ himself in the manufacture of hand-made pottery in the wilds of Cornwall. Oh no, let us at all costs keep the æsthetes out of the seats of the mighty, for as it is we have suffered quite enough from the activities of steamship company directors with æsthetic wives, from Diocesan Councils all too familiar with the works of Ruskin and of real-estate magnates far too susceptible to the charms of Stratford-on-Avon. The less we hear about Art, from the county councils and Whitehall, the better.

OUTPOST OF EMPIRE

"*He had seen in Kenya the best type of Britons following in the footsteps of the pioneers and missionaries, but striving to make life in that sub-tropical dependency as closely conforming to the perfect conditions of English country-house life as could be. He had seen check by jowl, not once, but a dozen times, a native grass hut and, rising into the shimmering air of the warm uplands, the walls and chimneys of a faithfully reproduced Jacobean manor or a seaside villa.*"

From "King George VI." by Taylor Darbyshire. Published by Hutchinson. Price 3*s.* 6*d.* net.

The old, old story

"*The next day being very fine I hired a rowing-boat at Westminster Bridge and drifted along with the current, in order to examine the bridges and banks of the Thames.*

"*I cannot excuse this Nation, so zealous and capable of achievement, to have postponed the building of a quay along the Thames, like ours along the Neva. It is easy to imagine what a picture London would offer if fine edifices, mansions, offices, such as an architect would conceive, were built along the Thames. Already the East India and London Docks give an idea of what the national genius of this thoughtful people can produce in this respect. Every town situated on a river ought to develop its principal parts in the direction of the river.*"

The above extract is taken from a most interesting diary kept by a certain Count Manteuffel, an intelligent Russian nobleman who visited this country in 1822 and which is to be found in the current number of the *Cornhill*. Much water has flowed under the bridges (which incidentally he considered too heavy and too high) since the worthy count's visit, but save for the erection of the Thames Embankment, which by destroying the proportions of Somerset House, deprived the north bank of the river of as much dignity as it brought to it, our great metropolitan waterway is in as chaotic a condition architecturally as it was then. Which just goes to show that we Britishers like to take our time about things and don't care a jot for what those foreigners may think and say.

As others see us

"*Just as we look to London as the originator of English ideals in the world, so is the manner in which people live, or try to live, in London the expression of the same world of thought . . . 'My house is my castle,' the one-family house, open-air life and all that we others admire and are fain to imitate, is inseparable from the English mode of thought and life. One hardly knows whether to laugh or to cry on seeing a modernistic architecture, imported into London, which is far less suitable to the spirit of the age than the Georgian houses of about 1800. There is now a quantity of English books on the latest fashions in foreign architecture, but I have yet to find one English book dealing at length with the fine standardized type of Georgian town-house, the sight of which is one of the most remarkable experiences to the foreigner in London. Hardly anyone in London realizes that London is a first-rate architectural city and that Bedford Square is one of the finest squares in the world.*"

From "London: the Unique City," by Steen Eilar Rasmussen. Published by Jonathan Cape. Price 15*s.* net.

Architecture in an advertisement in a daily paper.

Trade News and Reviews

By BRIAN GRANT

Redesign the Roads to reduce Accidents

In January of this year Mr. G. T. Bennett, County Surveyor of Oxfordshire, contributed an article to the *Daily Telegraph* in which he set forth the results of an investigation in his county of the accident statistics of the last four years. In showing how high a percentage of accidents in Oxfordshire were due to remediable "road conditions" Mr. Bennett joins issue with the official Transport Ministry conclusions.

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I will quote a few important and enlightening extracts from Mr. Bennett's article:—

"Four out of every five of the fatal road accidents which occur in Oxfordshire would not happen were the roads designed and constructed on the ideal lines recommended by the Ministry of Transport; more than two out of every four would be prevented were "ordinary" road defects removed."

". . . in nearly 60 per cent. of cases a chief contributory cause had been a road defect such as a blind or un-super-elevated bend, a direct or blind cross-road, a blind junction, the lack of a footpath, an unduly narrow carriageway or similar undesirable feature."

". . . no fatal accident had occurred during the two years period at any point where defects such as those named had been removed by previous road improvement."

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In reply to those who claim that the motorist, not the roads, is the prime offender Mr. Bennett says—"On the average a motorist drives three and a half million miles before becoming involved in a fatal accident, or we may put it that only one driver in ten meets with a fatal accident in the whole of his driving life, and then he himself may not have been to blame." His article concluded with a very pertinent query—"Shall we *instruct* the engineers to perfect the roads or shall we *attempt* to perfect the nature of road users so that they become not only well meaning but at all times unerring in judgment? Here lies the choice and there is no other."

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Street Furniture

Whilst on the subject of roads I would draw attention to a catalogue recently issued by Poles, Ltd., the manufacturers of "Adastra" poles for telephone, high tension and street lighting standards.

Our highways and by-ways are cluttered with an amazing variety of standards, many of which have little to commend them from the point of view of either design or efficiency.

The "Adastra" pole has been designed purely on practical lines—it sings no song of "art" but is in appearance just a plain straightforward efficient looking fellow.

Made up of tapering steel sections the poles are packed inside one another, telescope fashion, for transport—twenty 35-foot poles can go on a 30-cwt. truck with no overhang. On the site the sections, elliptical in shape to reduce wind resistance, are strained together by a tightening wire and the lamp brackets and cross arms are added where required. The catalogue is adequately illustrated and contains all the essential data. If the purchase of "street furniture" is in your province, or if you happen to be in a position to influence the responsible authorities, get a copy from Poles Ltd., 3, London Wall Avenue, E.C.4.

For those who must have *fleur-de-lis*, Tudor Rose and other bulbous embroidery I have no doubt that such extraneous embellishments can be superimposed *at a price*.

"Adastra" poles erected by the Rowley Regis Gas Company on the main Wolverhampton road.

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Science and Building

A visit to the Science and Building Exhibition at the Building Centre last month provided an edifying insight into the laboratory and research aspect of manufacture for the building industry. I was impressed and, frankly, more than

This suggestion for widening streets in order to alleviate traffic congestion in the shopping centres of large cities should be considered in the light of 1940 conditions, when there will be a million more motor vehicles to congest our already crowded streets. Something will have to be done; this method provides a free flow for traffic and complete safety for pedestrians.

Cantilever construction of the concrete and glass promenades would entail the minimum disturbance to property. Parliament could give municipal authorities the necessary powers to proceed with this plan.

THE CEMENT AND CONCRETE ASSOCIATION, 52 GROSVENOR GARDENS S.W.1

a trifle awed. There were several little working models of the "press button B" variety—these I enjoyed and very nearly understood. For the rest, I considered myself to be an interested but deplorably ignorant "passenger." It was gratifying to "bump into" one or two of one's friends who were honest enough to confess that they too were rather out of their depth.

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Paints and Research

I brought away with me a treatise issued by the Research Association of British Paint, Colour & Varnish Manufacturers dealing with the various aspects of the testing of the raw materials and the finished products. Elasticity, brushability, surface adhesion, extensibility, satisfactory pigment dispersion—a paint, to be worthy of its name, must have all these qualities to a high degree. But it's a long story, and a profound one.

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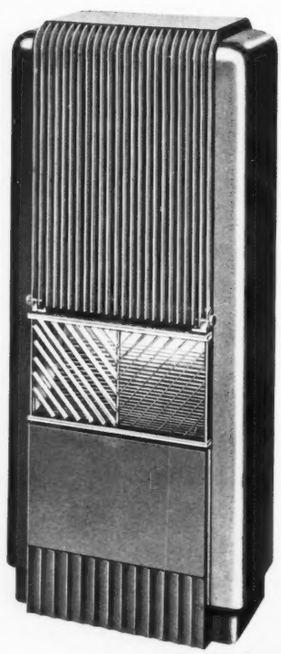
Nobles & Hoare

All of which reminds me that I recently received a communication from Messrs. Nobles & Hoare, one of the oldest firms of paint manufacturers in the country, asking me to notify architects that they have considerably extended that department of their business which deals with research work of immediate concern to the architect and interior decorator. In collaboration with the British Colour Council and a committee of architects this department has made a careful investigation of contemporary colour requirements in order that they might produce paints and varnishes in a range of colours and shades most likely to meet the present-day demand. One of the first steps taken (a most intelligent one) was to make contact with the manufacturers of decorative fabrics, such as carpets and curtains, in order to discover and keep an up-to-date record of what these manufacturers were producing. Colour harmony is the essence of good decoration and this sort of collaboration between the manufacturers of decorative materials is to be heartily commended.

A new colour card showing the complete range of colours that have been specially produced as a result of this investigation is now available and application for copies should be made to the Architect's Department, Messrs. Nobles & Hoare, Ltd., Cornwall Road, Stamford Street, S.E.1.



The "Luma" streamline gas radiator.

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A New Gas Radiator

The "Luma" gas radiator is one of the latest productions of John Wright & Company Ltd. of Birmingham, one of the associated Radiation firms. It has been so designed and constructed that the sides, top and back are always cool: it may thus be fitted flush against walls or woodwork without the risk of high temperatures developing, and the absence of appreciable convection movement up the sides and the back also

eliminates the deposition of dust particles on the surroundings immediately above the position in which it is installed. In large apartments the radiator need not be fitted with a flue and the whole of the heating energy of the gas consumed will be usefully employed: in smaller rooms, where the attachment of a flue is recommended, it is claimed that fully 80 per cent. of the energy consumed is emitted into the room. The principle of heat distribution is as follows:—high temperature radiation from a brightly incandescent refractory is reflected through the inclined slats in the door; a further supply of radiant heat is derived from the large panel mounted behind the vertical veins and a stream of warm air is discharged in a forward direction at the top of the veins. Fullest particulars are available from the manufacturer's head office, Essex Works, Birmingham, or from Radiation Limited, Queen Victoria Street, E.C.4.

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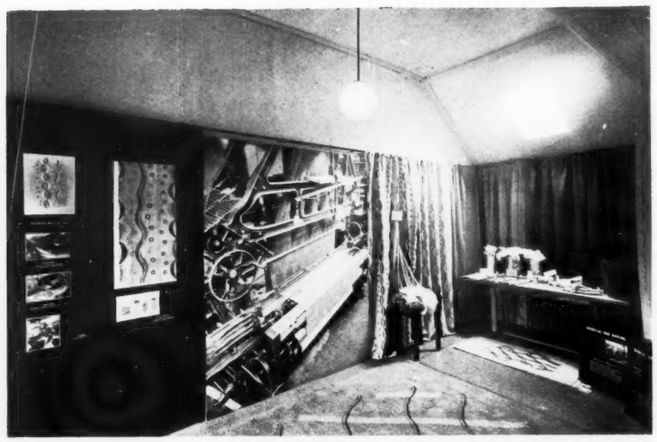
Contemporary furnishing display in the Cotswolds

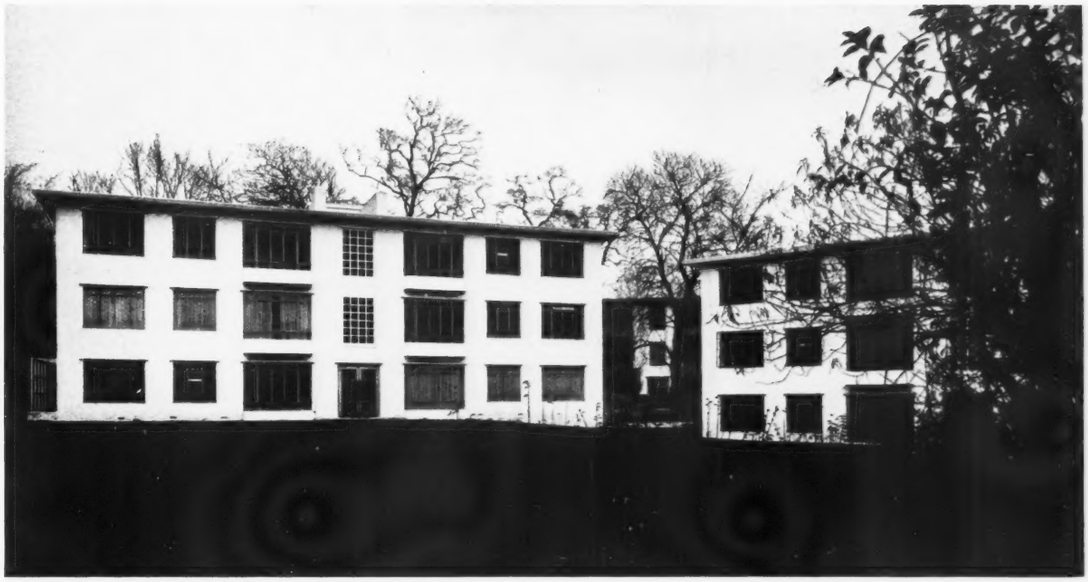
Gordon Russell, Ltd., to mark the opening of their new enlarged showrooms at Broadway gave, in collaboration with Edinburgh Weavers, an interesting display of modern furnishing fabrics "in the making." One cloth (designed by Ashley) was shown in every stage of production from the artist's original design to the finished product.



A corner of Gordon Russell's new Broadway showrooms. The main feature is a photographic enlargement 7′ 6″ by 6′ of a jacquard loom showing a cloth being woven. To the left of this is a series of small photographs illustrating the process of warping, and the action of the shuttles and jacquard cards. The artist's original design and the working drawings are also shown here, and on the right are lengths of the finished cloth in this design, with hanks of the 5 yarns from which it is woven—rayons, fibros and tuffle cotton. G. A. Jellicoe, architect.

The Noel Wood-Mosaic Company

My first introduction to Noel wood flooring was at Dorland Hall during one of the Industrial Art Exhibitions held there. I found it to be an exceptionally good looking floor and one that afforded considerable decorative scope to the architect or interior decorator and I was,



Architect: FREDERICK GIBBERD, A.I.A.A.

Contractors: Main—G. BOLLOM & SONS, Ltd
Painting—C. & T. PAINTERS, Ltd

"Cementone" again!

Illustrated above is a section of Park Court, the new block of flats near the Crystal Palace. For this important work, Cementone No. 9 Waterproof Stone-face Composition was selected for exterior finish to sand-lime brickwork over all the nine blocks, and also for interior finish to soffits and staircases.

In the Cementone range are products universally suitable for interior or exterior decoration of houses, flats, or public buildings in flat, glossy, or stone effects. A special Handbook for Architects and Surveyors gives brief particulars, specifications, and costs-per-yard for all these (for Cementone No. 9, see pages 26-7). A copy of this Handbook, together with a copy of the Building Research Station report on this material, will gladly be sent to any Architect or Surveyor interested on application to the sole manufacturers:

JOSEPH FREEMAN, SONS & CO., LTD.

CEMENTONE WORKS
WANDSWORTH, S.W.18
Telephone: BATTERSEA 0877 (4 lines)

ESTABLISHED 1776

ARCHITECTS' SERVICE DEPT.:—
28 VICTORIA STREET, S.W.1
Telephone: VICTORIA 1481

therefore, not surprised to note that during the years immediately following the exhibition it was specified and used extensively by architects. Of (I believe) French origin, it was at that time handled in this country by the Noel Floor Company of Leather Lane, E.C.1.

I am now informed by the Noel Wood-Mosaic Company that they have taken over all the patents, trade-marks, plant and machinery and have also retained the trained staff of floor layers and technicians employed by the old company. The address of the new company is 27–29 Union Street, Borough, S.E.1, and Mr. Dennis Hill, who has been appointed manager, is anxious to send illustrated and fully descriptive literature to all who may be interested.

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An Appeal to Architects and Builders

I would like to ventilate an appeal that I have received from a correspondent in the Midlands and will quote verbatim from his letter: "Just how useful one trade can be to another is illustrated by the problem with which the manufacturers of window blinds are today faced. It is a problem that can only be solved by the architect and builder and should merit their sympathy. The makers, the dyers, the finishers and the wholesalers, to whom this problem is vital, have banded together and embarked upon a scheme of publicity in an attempt to increase the sales of window blinds. Through this advertising in the national, professional and trade papers details are being given of the new designs that have been produced to meet contemporary tastes in window decoration, and of the many new types of blinds being made to suit modern window construction. As a result of this advertising the retailer has discovered that in a great many houses of recent construction where they have been asked by the owner to fix blinds, the fixing has not been possible for the simple reason that no provision has been allowed for the attachment of the necessary brackets or fixtures. All that is asked is that architects and builders should leave a three-inch margin at the sides of all windows so that blinds may be installed where required and demanded. If they could only see their way to making this provision it would be a boon to many people—not only to building owners and householders, but also to that great number of workers engaged in the various trades involved in the manufacture, supply and fitting of window blinds."

The Buildings Illustrated

Decoration of No. 47, Highpoint, Highgate.
Architects: **Marcel Breuer and F. R. S. Yorke, A.R.I.B.A.**

The general furnishings were arranged by Messrs. P. E. Gane, Ltd. Among the sub-contractors and craftsmen were the following: Isokon, Ltd. (reclining chair, dining table and nesting tables), Duncan Watson & Co., Ltd. (electrical installation, fittings), Merchant Adventurers of London, Ltd. (certain electrical fittings), Herbert Terry & Sons, Ltd. ("Anglepoise" lamp), Skellorn Edwards & Co., Ltd. (carpets), Dartington Hall, Ltd. (fabrics).

National Bank of Scotland.
Architect: **Thomas P. Marwick & Son.**

The general contractors were Messrs. Scott & Brown, Ltd. Among the sub-contractors and craftsmen were the following: William Bain & Co., Ltd. (structural steelwork), Gray's Ferro-Concrete Co., Ltd. (reinforced concrete), Concrete, Ltd. (pre-cast floors), Tate, Brown & Co. (Heworth Burn stone), Cement Marketing Co., Ltd., and G. & T. Earle, Ltd. (Portland cement), Niddrie and Benhar Coal Co., Ltd. (common bricks), John Low and Son (roof slating), Scottish Speedwell Co., Ltd. (asphalt), Expanded Metal Co., Ltd. (reinforcing fabrics for

concrete), Aerocrete (Scotland), Ltd. (partition blocks), Sika-Francois, Ltd., and Castor Cement Waterproofing Co., Ltd. (waterproofing), Minton Hollins & Co., Ltd. (wall and floor tiles), Korkoid Decorative Floors (stair nosings and treads and "KorKoid" flooring), British Plaster Board Co., Ltd. (plaster board), Tentest Fibre Board Co., Ltd. (wall boards), Adamite Co. Ltd. (floor clips), Cameron and Robertson, Ltd. (piping and drainage goods), John Mitchell & Co., Ltd. (creosoted timber supplies), Allan & Sons, Ltd. (marble and granite wall and floor tiling), Modern Surfaces, Ltd. (condensation-proof plaster), Thomas McGhie & Sons, Ltd. ("Thistle" hardwall plaster), Expanded Metal Co. (metal lathing), D. Anderson & Son, Ltd., and the May Acoustics, Ltd. (sound absorbents and insulating materials), Limmer and Trinidad Lake Asphalte Co., Ltd. (coloured asphalt floor covering), Henry Hope and Sons, Ltd. (bronze and steel windows and glazed screens), Charles Henshaw (bronze doors, railings, grilles, etc.), Hobbs, Hart & Co., Ltd. (door furniture and locks, security work), Chance Bros. & Co., Ltd. (plate glass, obscured and figured glass), Pilkington Bros., Ltd. (tinted glass), W. H. Heywood & Co., Ltd. (patent glazing), James H. Lamont & Co., Ltd. (copper tube fittings), Yorkshire Copper Works, Ltd. (copper tubes), John White & Co. (plumbing and fire hydrants), Arthur Sanderson & Sons (canvas and Japanese woven grass wall decorations), John Line & Sons, Ltd. (embossed wallpapers), Wood Processes, Ltd. (wood veneer decoration to banking and entrance halls), Chubb & Sons Lock & Safe Co., Ltd. (safes), Minimax, Ltd. (fire extinguishers), John Taylor & Co. (window blinds), Dale's (lettering), "Turk" System Drying Co., Ltd. (drying-out process), Baxendale & Co., Ltd., James Gray & Son (fireplaces), Twyfords, Ltd. (sanitary fittings), James Duncan & Sons, Ltd. (carpentry and joinery), Laminated Wood Products, Ltd. (flush wood doors), A. Stephen & Sons (telling counter, etc., in banking hall), John Taylor & Sons and John Watherston & Sons (office fittings), Whytock & Reid and Ronco, Ltd. (furnishings in banking hall), Thonet & Co. (metal stools and chairs), Tucker Armoured Plywood Co., Ltd. (metal plywood), Charles Ritchie & Co. (central heating), Muirhead Ventilators, Ltd. (ventilators), Waygood-Otis, Ltd. (lifts), J. Sibbald & Sons, Ltd. (electrical contract), Wood & Cairns, Ltd. (electrical equipment), Ascog, Ltd., Best & Lloyd, Ltd., Troughton & Young, Ltd., and Merchant Adventurers of London, Ltd. (light fittings and glassware), Craigpark Electric Cable Co., Ltd. (wiring and cables), General Electric Co., Ltd. (electric bells and alarms, wiring cables and tubular lamps), Simplex Electric Co., Ltd. (switchgear and conduit), J. A. Crabtree & Co., Ltd. (switches and switch plugs), Edison Swan Electric Co., Ltd. (electric lamps), Magneta Time Co., Ltd. (electric clocks), Ideal Boilers & Radiators, Ltd., (boilers), Mirrlees, Bickerton & Day, Ltd. (automatic stokers), Joseph Sankey & Sons, Ltd. (radiators), Dictograph Telephones, Ltd. (inter-communicating telephone system), Gent & Co., Ltd. (signalling apparatus), Edinburgh Corporation Gas Dept. (gas installation), Keith & Blackman Co., Ltd., and Davidson & Co., Ltd. (electric fans).

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Pearl Assurance Buildings, Bournemouth. ***Architects:*** **Raymond McGrath and Walter Goodesmith.**

The general contractors were Messrs. Trollope & Colls, Ltd., who were also responsible for the excavation, foundations, reinforced concrete and plumbing. Among the sub-contractors and craftsmen were the following: Goodman, Price, Ltd. (demolition), Val de Travers Asphalte Paving Co. (asphalt), London Brick Co., Ltd. (bricks), Carter & Co., Ltd. (terra-cotta), Dorman, Long & Co., Ltd. (structural steel), Runnymede Rubber Co., Ltd. (rubber flooring), James Clark & Son, Ltd. (glass), Acme Flooring & Paving Co., Ltd. (woodblock flooring), Concrete, Ltd. (reinforced concrete and "Bison" hollow slab and tile floor), Rollo Products, Ltd. (waterproofing: walls, floors and stair risers), Rosser & Russell, Ltd. (central heating), Beeston Boiler Co., Ltd. ("Robin Hood" and "New Sailor"), Aish & Co. (electric wiring), Merchant Adventurers of London, Ltd. ("M.A." lighting fittings), John Bolding & Sons, Ltd. (sanitary

fittings), Lockerbie & Wilkinson (locks), Crittall Manufacturing Co., Ltd. (casements and window furniture), Dryad Metal Works (handles), Taylor, Pearse & Co. (handles "Tayloroid"), General Electric Co., Ltd. (bells), General Post Office (telephones), Potter Rax Gate Co., Ltd. (folding gates and lift gates), G. R. Speaker, Ltd. ("Eonit" pumice blocks), Xelite Co., Ltd. (plaster), Light Steelwork (1935), Ltd. & Buckleys (London), Ltd. (metalwork), Docker Bros. Ltd. (paint), Griffiths Bros., Ltd. (joinery, shopfittings and office fittings), Express Lift Co., Ltd. (lifts), Light Steelwork, Ltd. (bronze lettering and façade).

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Service Station for Messrs. Henlys Ltd., Great West Road.
Architects: **Wallis Gilbert and Partners.**

The general contractors were Messrs. Fairweather and Ranger. Among the sub-contractors and craftsmen were the following: Pearce & Sons (neon signs), Rashleigh Phipps & Co. (electrical contract), H. W. Dutton & Co. (heating), Wayne Tank & Pump Co. (petrol tank installation), Sissons (steam engines), Carter & Company (copper tower), Courtney Pope & Co., Ltd. (shop front), General Asphalte Co., Ltd. (asphalt), Mellowes & Co., Ltd. (patent glazing).

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The Comet Inn, Hatfield.
Architect: **E. B. Musman.**

The general contractors were Messrs. Allen Fairhead & Sons, Ltd. Among the sub-contractors and craftsmen were the following: Proctor & Lavender, Ltd. (bricks), Laminated Wood Products, Ltd. (doors and flush panelling), W. H. Heath, Ltd. (counters and pewtering), Dorman, Long & Co., Ltd. (steelwork), Helical Bar & Engineering Co. (hollow tile floors), Rashleigh, Phipps & Co., Ltd. (electrical installation), Abbey Heating Co. (heating and ventilation), Thos. Parsons & Sons, Ltd. (paint and distemper), Cope & Co., Ltd. (wall tiling and terrazzo), Crittall Manufacturing Co. (lantern light and metal windows), Taylor, Pearse & Co. (ironmongery), Galsworthy, Ltd. (lettering, bronze balustrade and lamps, metalwork to tower and sign), Rowley Galleries, Ltd. (furniture and electric light fittings, silver-gilt panelling to restaurant and sitting room), Heal & Son, Ltd. (carpets and curtains), H. Norman Davis (wireless and clocks), Express Lift Co., Ltd. (lifts), Kelvinator, Ltd. (refrigeration), Benham & Sons, Ltd. (kitchen equipment), Damer Bros. (stonework), Korkoid Decorative Floors Ltd. (floor coverings), Pugh Bros. (plain and decorative mirrors), George Wright (London), Ltd. (sanitary fittings and fireplaces), Hollis Bros. & Co., Ltd. (dance floor), Arthur Glover (fibrous plaster), Institute of the Blind (mats), Frazzi, Ltd. (Paropa roofing).

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Park Court, Crystal Palace.
Architect: **Frederick Gibberd, A.I.A.A.**

The general contractors were Messrs. G. Bollom & Sons, Ltd. Among the sub-contractors and craftsmen were the following: Windsor Floors, Ltd. (reinforced concrete), Cement Marketing Co., Ltd. (sand-lime bricks), British Doloment Co., Ltd. (composition dadoes and floors), General Electrical Maintenance Co. (electrical installations), Arthur Scull & Son, Ltd. (plumbing), Lenscrete, Ltd. (special Lenscrete windows), South Suburban Gas Co., Ltd. (gas supply), Ragusa Asphalte Paving Co., Ltd. (asphalt roofing), S. W. Farmer & Son, Ltd. (staircase handrailing), C. & T. Painters, Ltd. (decorations), F. Bowman Glassworks, Ltd. (glazing), Nettlefold & Sons, Ltd. (ironmongery), Williams & Williams, Ltd. (metal windows), Vigers Bros., Ltd. (wood flooring), MacAndrews & Forbes, Ltd. (doors), Shanks & Co., Ltd. (sanitary fittings), Easiwork, Ltd. (kitchen fittings), Slate Slab Products, Ltd. (surrounds for fireplaces and bath panels), H. W. Cullum & Co., Ltd. (soundproof flooring), Osgood & Co., Ltd. (tiling), R.I.W. Protective Products, Ltd. (waterproofing.) Carbo Plaster, Ltd. (plastering), Wardle Engineering Co., Ltd. (tubular heaters), Cellulin Flooring Co. (rubber flooring), Frederick Braby & Co., Ltd. (wire larder shelves), Broad & Co., Ltd. (cooker recess lining), Donald Macpherson & Co., Ltd. (oil paints and enamels), Joseph Freeman, Sons & Co., Ltd. ("cementone"), Best & Lloyd, Ltd. (special electric fittings), Trussed Concrete Steel Co., Ltd. (Hy-Rib to garages), C. Fowler (house breaker), Kerner-Greenwood & Co. Ltd. ("Pudlo" brand waterproofer).