

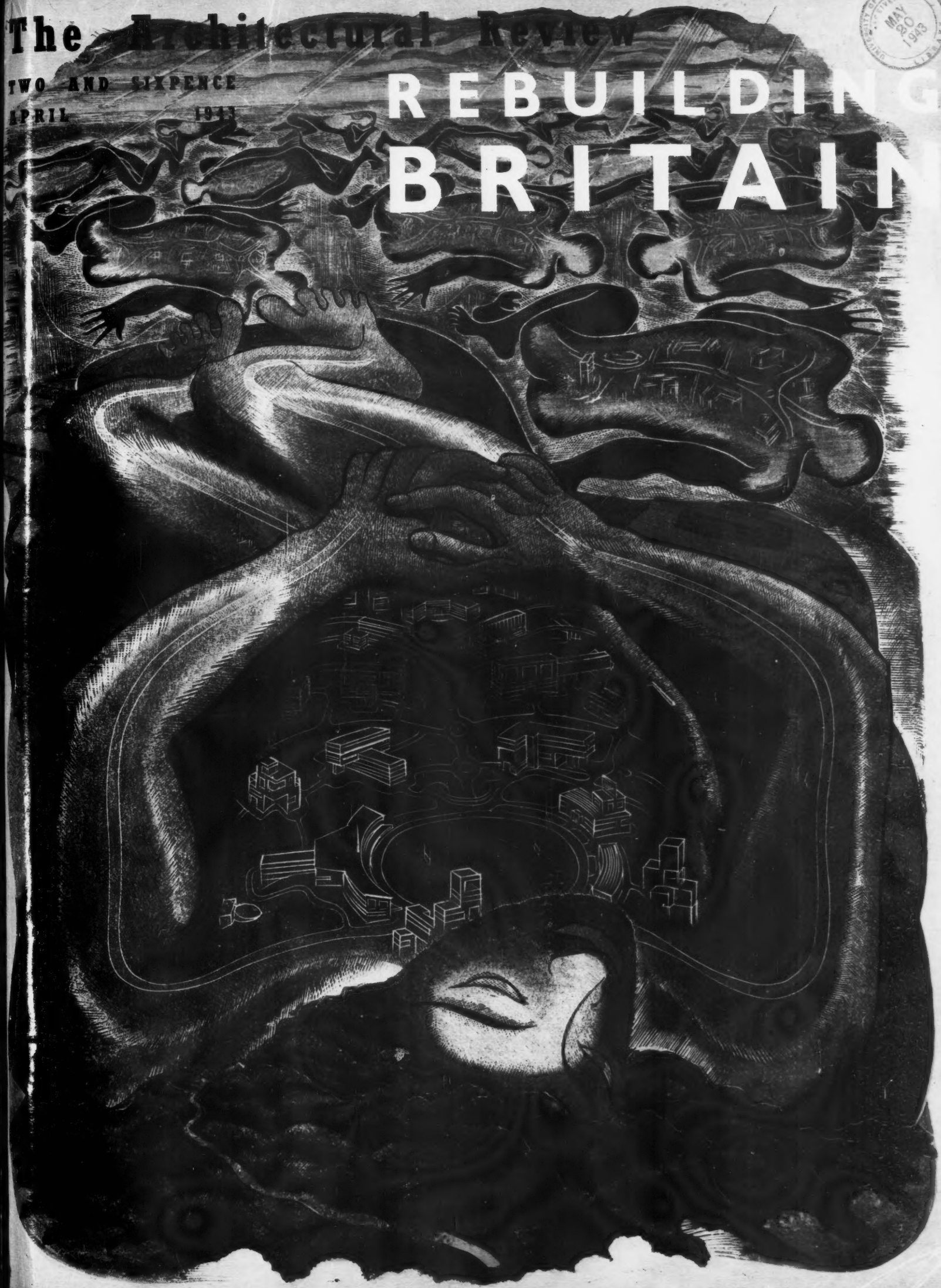
The Architectural Review

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APRIL

1943

REBUILDING BRITAIN



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The
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THE COVER

The cover of this issue is a reproduction from a hand printed lino-cut in colour by Leon Underwood symbolizing the principle of social units as discussed on pages 91 and 92.

REBUILDING BRITAIN

This Special number of THE ARCHITECTURAL REVIEW is a record of a memorable exhibition. *Rebuilding Britain* was organized and designed by the RIBA Reconstruction Committee (Chief designer: Rodney Thomas), sponsored by the Building Industry and opened on February 25 at the National Gallery by Sir William Beveridge. It is put on record here because as an elementary statement of principles and methods it is worth what permanency it can be given. It is worth also broadcasting as widely as possible, and this has been catered for as well. Within a week or two of publication in the REVIEW the same material will be on the bookstalls in the form of a pamphlet that all may read. At the exhibition itself, where the pictures are accompanied only by brief captions, this pamphlet will be on sale as a catalogue, and the running commentary which has been added to make the exhibition material suitable for publication in magazine form, will probably help to make smooth the path of the visitor. It need hardly be said that this issue does not set out to convert readers of THE ARCHITECTURAL REVIEW. They are already converted. But they will perhaps make allowances for this essay in popular propaganda on the grounds that the cause is the best of all causes, the rebuilding of Britain.

Foreword

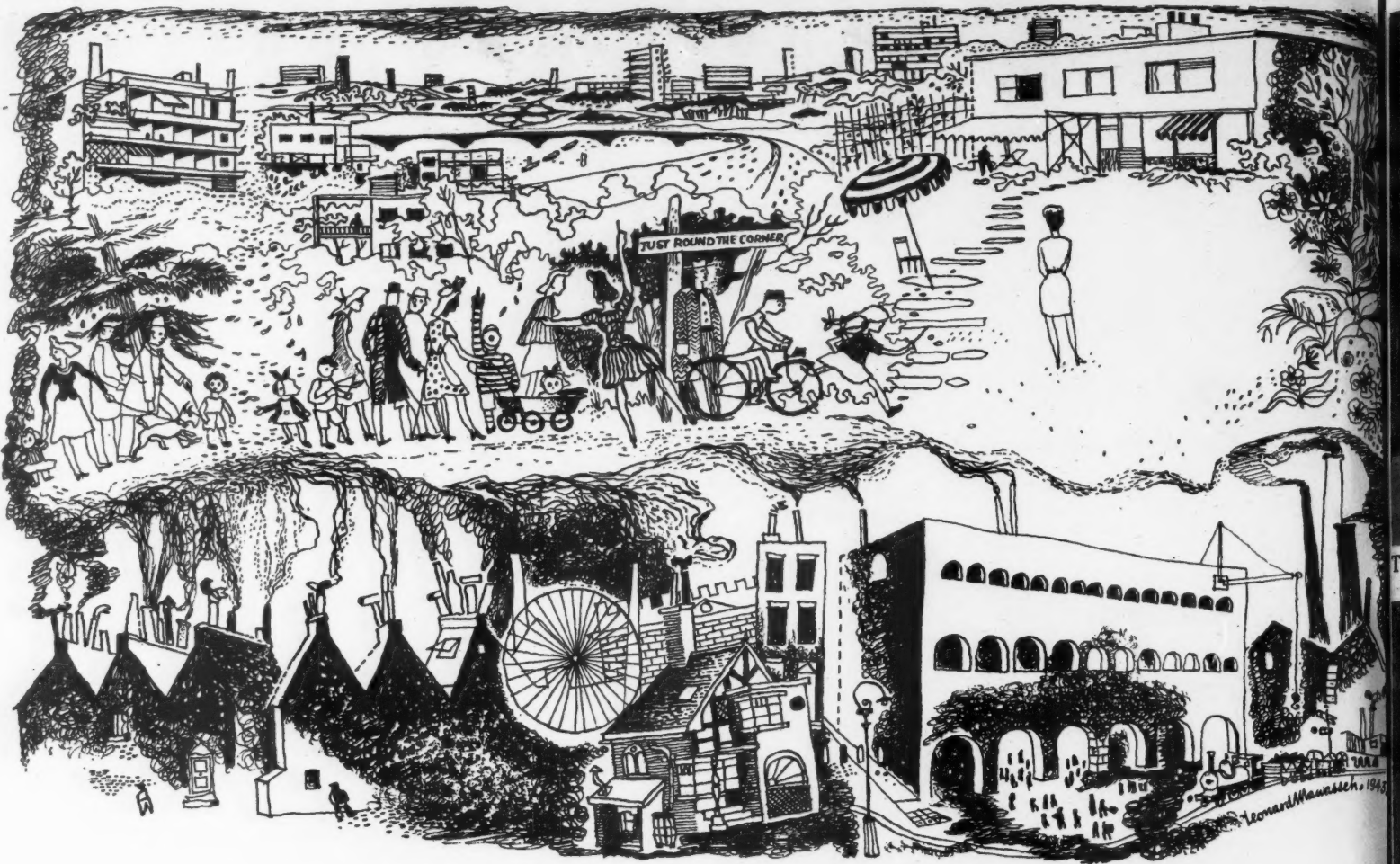
By the President of the Royal Institute of British Architects

Before a building can take visible shape, it ought first to have been created as a thought; imagination must precede action; without ordered imagination action is likely to be wasteful and productive of chaos. What applies to individual buildings applies still more to the collections of buildings in groups which make our towns.

The exhibition recorded in these pages is an attempt to show how imagination may be applied to the replanning and rebuilding of Britain which will follow the war. It is certain that this rebuilding will be undertaken with zest once it is realised that it is a translation into fact of an imagined environment, and that every action is part of a great concerted movement designed to bring better conditions of life and more beautiful surroundings to all our citizens. Unless, however, the preliminary thinking is done well ahead of the action, there is likely to be the panic-stricken advocacy of a go-as-you-please policy which, we know only too well, will result in hasty building and long bitter repentance that a glorious opportunity has once again been lost.

The exhibition is in no way dogmatic or dictatorial. While it does not presume to decide the kind of life the nation ought to live, it does show clearly some better ways of life than many people have lived hitherto. Fears have been expressed that life in the future will be too much enclosed physically by concrete and glass, and that our pleasant English land will be ruined by half-digested attempts in an international manner of building that has no roots here, to the exclusion of our traditional materials and crafts. This will not be the case. Masons, bricklayers, carpenters and joiners, workers in metals and glass are all anxious to re-create the artistry in craftsmanship which has so largely disappeared, and the architects, for their part, may be relied upon to show by their designs, whether for old materials or new, that the age of grace, scholarship, and good manners in building has not ceased to be.

W H Asell



Programme

England after the war must be England, and not a schematically planned and blue-printed utopia, but it must not be the same England as before the war. By all means distrust the planner who promises an England gleamingly and glitteringly streamlined. We have a right to our countryside, our old towns, and our rhythm of life, different from that anywhere else, and we have a right to our own brand of imperfections. These pages are going to present imperfections but the kind of imperfections none of us want.

One of them, Social Insecurity, or more briefly, WANT, is not an imperfection anyone hungers after, and indeed it has already had a wallop in the Beveridge Report. But as Sir William Beveridge himself has said, "Want is only one of five giant evils which have to be attacked and so far as possible destroyed, in the making of a New Britain after the war," the others being Disease, Ignorance, Idleness and Squalor. One of these we have particular business with here—Squalor—"a formidable giant," says Sir William, "far harder to attack than want—a true Goliath." Consider how formidable a giant is Want and it becomes clear that we are up against a tough customer in Squalor. Why is he so tough? Because to knock him right out quite a lot of Britain has got to be pulled down and rebuilt. These pages are really a declaration of war on Squalor, meaning the conditions under which millions of people are still condemned to live in hundreds of square miles of derelict "town," ill-equipped, dirty, too thick upon

the ground, too far from work, and short of reasonable services and amenities.

How can the war on Squalor be won? The very first thing to win is the Battle of Planning. We shall need to have planning on a national scale, boldly overstepping the traditional boundaries of urban council, rural council, County Council. Boldly overstepping the interests described so often as vested. Remembering always that planning on such a bold scale has only one purpose, which is not to reduce us all to a dull conformity, but to release every individual for a fuller life.

Can it be done? Yes, without any question; but there is one condition which every single man and woman has got to face. We are all members of a democracy which means that to get a thing done, sufficient numbers of us have got to insist on it being done. If you, for instance, are not convinced that this better, healthier, more harmonious Britain is needed just as badly as victory over Hitler (in fact is victory over Hitler), then nothing will ever happen. If, on the other hand, you insist, then there is no earthly reason for not getting on with the job. It costs absurdly little compared with what we spend now. Watch while you read how relatively insignificant the question of finance is. Also, the job can and must be started at once. It involves, as you will see, a lot of research without which physical reconstruction cannot begin. Legislation must be brought in too, and that can be got ready now.

But what must legislation promote, what

prevent? What line must research follow? What must the money be spent on? Once again, we live in a democracy. You need to take an interest in all this unless you are satisfied that it all is to serve your well-being as an individual and a citizen.

Look at the next page. You may be lucky and live in a less depressing street. But why should anybody have a slummy house, the smell of the gasometer from morning to evening, and no better playground for his children than the street?

Why should there not be enough garden, private and public? And why should we not all have **friendly and charming houses** With large windows, to let in sun and air, and good, sound domestic equipment to lay the bogy of smoke and fog, to halve the housewife's toil, and to make cleanliness a pleasure instead of an effort? Don't say it would be too costly. It wouldn't. The secret is judicious location of houses, a conscientious building technique, and mass production of modern standard equipment on a Spitfire scale.

And are you better off where you work than where your wife works? Or is the picture of Rhondda worse than any normal industrial town? It ought to be. We can have **factories clean, tidy, well-located.**

And schools for the children, hospitals when you or they are sick? True, there are good recent buildings. But they did not just happen. Doctors and schoolmen have pushed their case sufficiently forcibly. If you do the same, you will also succeed. While you read on, never forget:

These

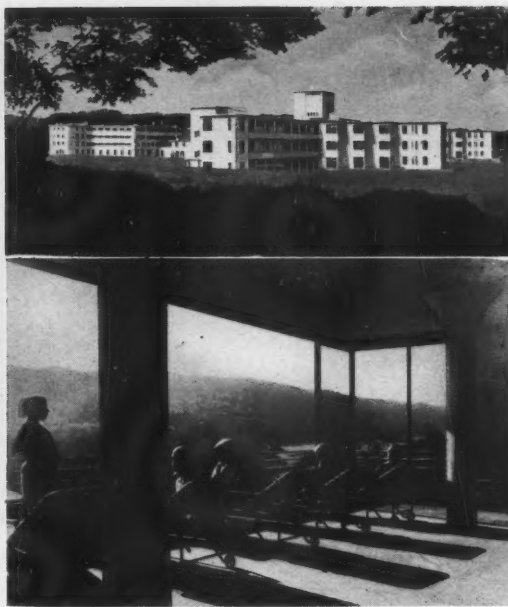
These

These

these



These are the houses of Britain



Here are hospitals as they should be,



These are the houses you can demand



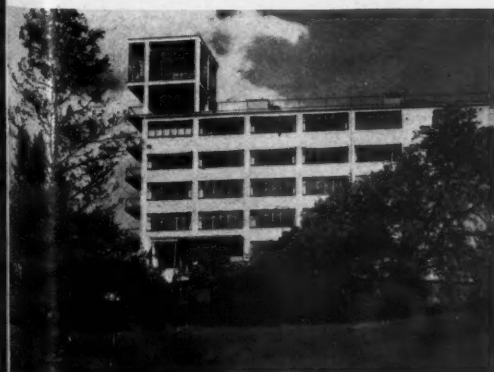
and schools as they should be with



sunny class-rooms, libraries and work-shops,



These are the factories of Britain



these the factories you can demand



and well-equipped large gymnasia

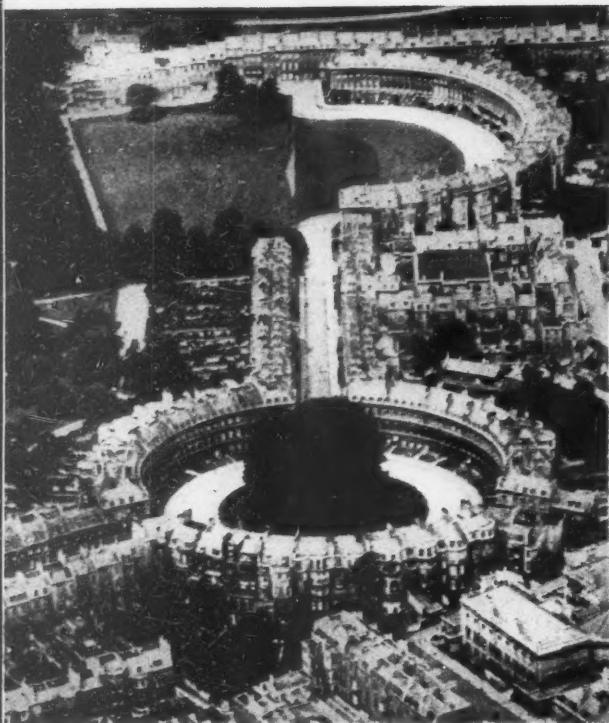
Heritage

Before replanning can start, it is necessary to decide what must be preserved. And in preservation—as in everything else—a national scale must be adopted. Individual buildings and beauty spots mean a great deal, but they are not the whole story. **You have inherited a good country.** You are fond of it, of its sky, of its humanity, of its mild climate, not too hot, not too cold, of its hills, its ancient trees, its fields and hedgerows, of its variety and civilized articulation. And yet it's not the slightest use setting out to preserve all this as a museum-piece; if the country is to live the country has got to develop.



Besides nature there is history. Britain has been very fortunate. What other country can look back on centuries free from destruction by foreign invaders. The Civil War three hundred years ago has not done much damage to towns and villages (though it did to churches and castles). The War of the Roses back in the fifteenth century left the countryside virtually untouched. So, in spite of all the reckless and senseless pulling about and pulling down of the last hundred and fifty years, we have still got lovely villages, of all kinds and shapes, grown in the Middle Ages or (such as **Milton Abbas**) laid out by humane landowners.





And we have some towns to be proud of, industrial, market, cathedral; ports, resorts and spas. Not all have been laid out in the grand manner like Augustan **Bath** with its Circus and Royal Crescent (the best academic architecture in England not excluding the works of Wren). Nor are they everywhere developed with the Millionaire's-Row exuberance of **Nash's terraces round Regent's Park** (above, right). Yet large or small there is hardly a town which is not a store-house of good building, be it the doctor's Georgian house, the local pub (where it has not had its face lifted) or a row of **weatherboarded**



cottages, hang-over from a but half-dead local-tradition. None the less as things stand to-day these buildings, set in square, alley or close, and representing the history of our race, exist by no other right than accident or negligence. They are irreplaceable, but they are not protected. Tradesmen on the make, Borough Engineers looking for space for a



Civic Car-park, or "progressive" town councillors eager to cash in on an old site, have all had a wonderful time knocking down the parts of our towns that were really worth preserving. Don't get the idea that the planner is in league with these public enemies, a robot of a man without sentiment or good manners, whose *idée fixe* is to tear out the ancient core of our towns in the cause of traffic-flow or Brave New Worldiness.

The truth is the exact opposite. The move for planning in England has come largely from those who loved old buildings and could see no other way of saving them than by getting "building development" controlled. It is not the dream of the planner to recondition towns until nothing of their personality remains; on the contrary his grand object is to enhance personality wherever it appears, to woo it—even at the cost of traffic flow; to preserve ancient buildings, traditional rites, customs, ways of life; to make unlawful those sinister back-stage activities in Real Estate which have done more than any other thing to destroy the character of our cities; to work out a technique of building development that will enable a live community to fulfil its needs without having to destroy the monuments of its own past. There are things we want to get rid of and things we want to keep. If we want to keep the good old things, the crumbling walls, the quiet lanes, we have to plan; no less than we have to plan to get rid

of the squalor we do not want to save.

The time has gone when it was enough just to feel sore with particular people (the brewers for instance for the havoc they have wrought amongst the old pubs of England by what is suavely called "reconditioning") for particular blunders. For the fact is England has borne the brunt of a revolution unique in the history of the human race, and it is not surprising that we find ourselves surrounded by the debris of a period in which the machines (even the beer machines) ran ahead of their masters.

But if we never knew it before, this war has taught us that a machine economy must be a planned economy. It is the only way to keep machines in order. To clear the debris, to control the machine, to rebuild the cities, to rehabilitate the countryside, and to preserve the past, even when the past is represented by no more than a weatherboarded cottage, or a line of venerable elms, these are the ambitions of all reasonable men, and to realize them the first requisite of all is:

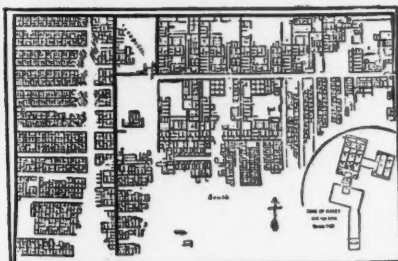
TOWN AND COUNTRY PLANNING ON A NATIONAL SCALE

Town planning 3000 B.C. to 1922 A.D.

Most people think that, until the planners of the last fifty years appeared, towns grew in the free and easy way which we admire for instance here, at Furnes, in Belgium.



But that is not so. Town planning is very old. The Egyptians knew it, as Kahun proves, a far too little known example of c. 3000 B.C.



And directly you find planning, you find the tendency towards geometrical patterns, easy to lay out, easy to understand visually, orderly if somewhat unimaginative in appearance, and easy to run. Greek town-planning followed the same line. In the days of Pericles

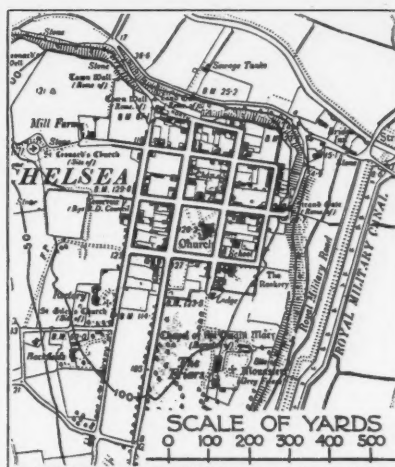


new towns were designed on the chess-board pattern. Selinus is an outstanding example

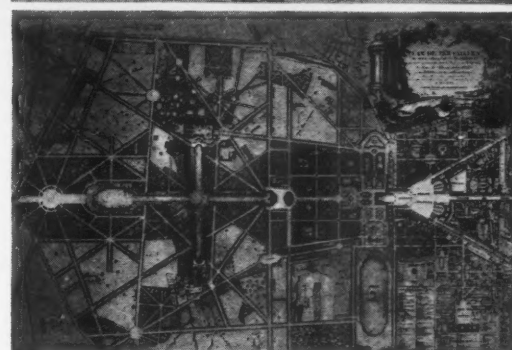
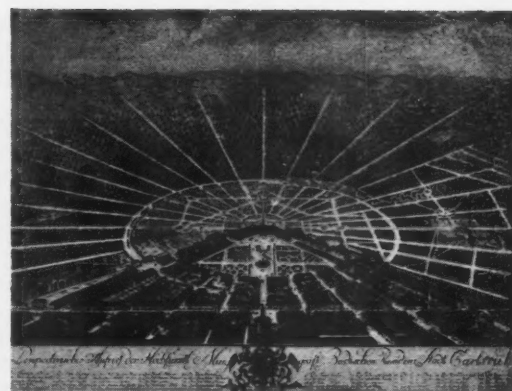
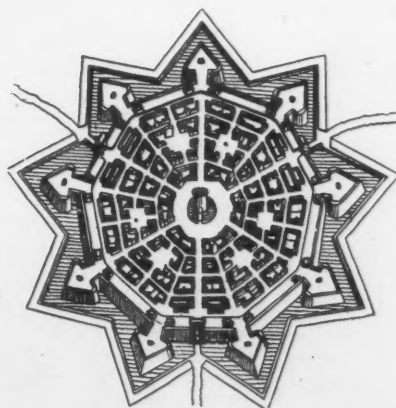
of classic Greek planning with the main street wider than the others, and the civic centre by the main crossing. The "close" of the temples is kept apart.

As soon as the Middle Ages grew out of rural feudalism into an urban civilization, they too did not know a better plan for new towns than that of Roman camps and towns. At Winchelsea, Edward I's foundation of 1277, it still survives.

So side by side with haphazard—and as it happened extremely picturesque—growth, there has been right through the Middle Ages town planning as a conscious effort. But while before the sixteenth century regular plans were rare and ornamental plans non-

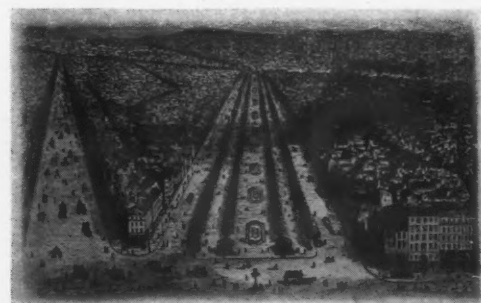


existent, both came in with the Renaissance and the rise of humanism. Roman order was re-discovered, formality and symmetry freshly appreciated, and architecture developed into an art of which at least part consisted of academic learning. So Scamozzi, a follower of the greater Palladio, designed Palma Nova in 1593 as a nine-pointed star, with radiating streets leading to the bastions of the fortress, and six squares placed in a symmetrical pattern.



The Baroque brought the culmination of this system: whole towns built to regular patterns, with the palace in the centre. Karlsruhe was designed in 1715, Versailles a little earlier.

Now what the developments were that really mattered in the nineteenth century history of towns and cities have already been described. They could not have taken place if there had been planning. But planning, to cope with events, would have had to change its technique. This it did not do in time. So, while in most cities, and in nearly all British cities, planning was wholly absent, the seemingly spectacular schemes which such capitals as Paris and Vienna carried out, remained entirely superficial: splendid

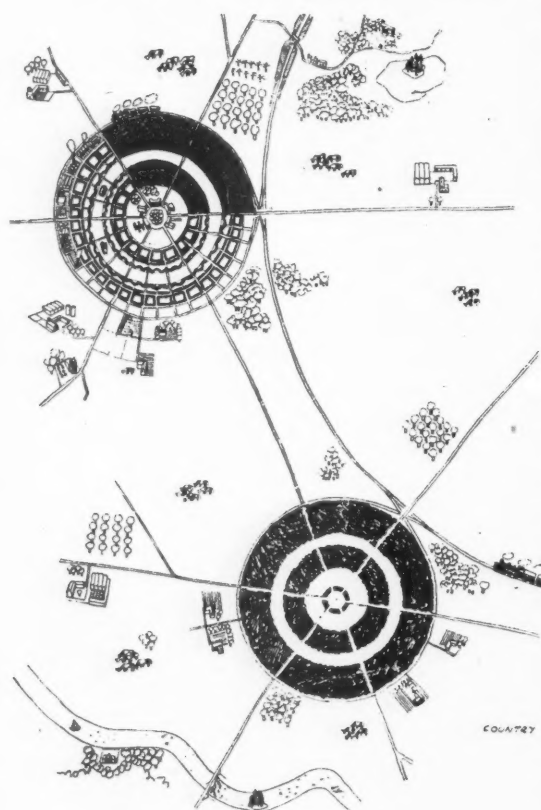


wide avenues, spectacular groups of civic buildings, but slum behind and around them everywhere.

Only with the end of the nineteenth century

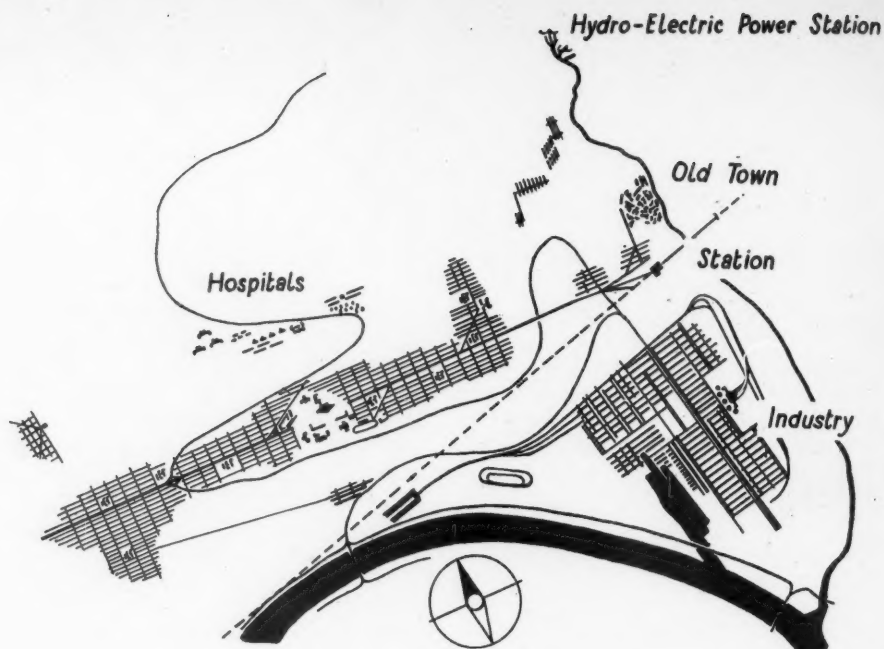
did architects wake up to their new social duties in a changed world. The movement started from Britain. It is connected with the name of **Ebenezer Howard** and his book *To-morrow*, published in 1899, and later re-published as *Garden Cities of To-morrow*. Here the case is put for the creation of new towns for about 30-50,000 inhabitants each, and designed to combine the advantages of urban and rural life. They were to be located in the neighbourhood of some existing centres—our diagram below assumes this to lie to the right so that roughly radial main arteries connect **garden-cities** with chief centre. A circular railway with sidings around each of the new towns provides transport. Each town is drawn circular with a centre of park and public buildings, a housing ring round, a green belt with schools and churches beyond that, and further housing on one side of the outer ring, and factories and workshops on the other. Beyond the circle farms, fruit farms and fields would serve the needs and recreation of the town. A few such garden-cities (Letchworth, Welwyn) have been built, and a few more complete garden suburbs (Hampstead). They offer much open space and pleasant planting for each house. But the garden-city principle as such does not answer the problems of the larger industrial centre, nor that of a growing population.

The very first to grapple with these was

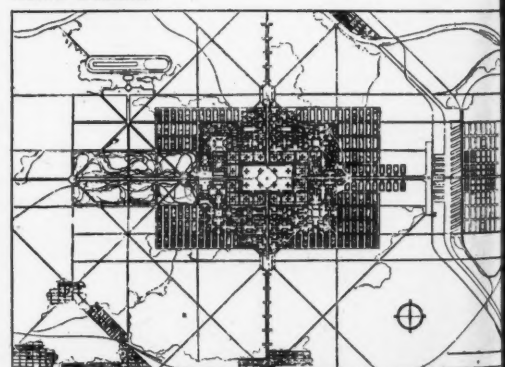


Tony Garnier whose *Cite Industrielle* dates from 1901-4. He re-established the old principle of linear growth along a main traffic artery, a less artificial principle than Howard's. His scheme also has the advantage of being presented on what might be an actual site. You see industry isolated between railway and river, separated from the main urban body by parkland. The main body has the civic centre in the middle, housing placed to the left and right along the main street, and side streets branching off at right angles. Schools are situated in the housing area, hospitals, etc., on the hills to the north (cf. page xxxix).

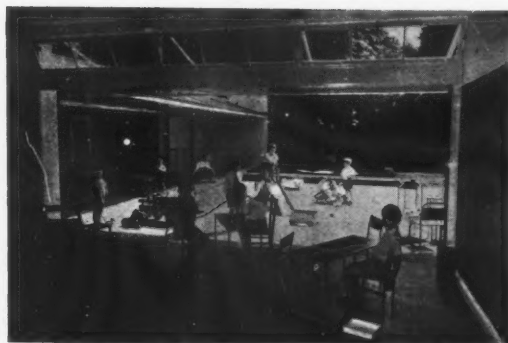
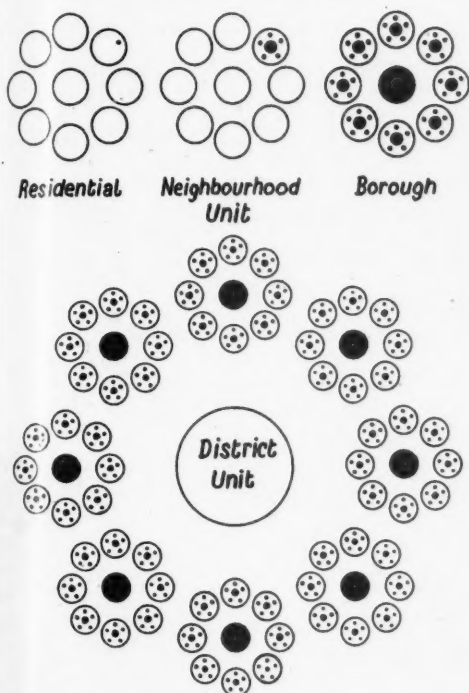
Garnier's is the first uncompromisingly functional city design, developed regardless of vistas and monumental symmetry. It was an epoch-making idea, but Garnier did not apply it to the city of metropolitan size. This was left to **Le Corbusier** who, in 1922, designed his **Radial City**, a scheme for three million inhabitants (pictures on the right). It combines Garnier's concentration with the garden-city principle of satellites around. Industry is isolated on the east. It is connected with the city by one of the two straight elevated arteries, intersecting at right angles in the exact centre of the configuration. Here, below ground, is the railway station too. No trains run on or above ground. The city centre is given to twenty-four skyscrapers set into generous parkland. They house all administrative and business offices. Shops are at ground level.



Corbusier's is frankly an abstract scheme. It had as such, when it came out, all the fascination of bold scale, dramatic presentation and enthusiasm for the technical marvels of the twentieth century, and did more than any other project to make those people town planning minded who had until then only been garden-city minded. Don't imagine however, that the planner's ambition is to produce this literally and make us all live in it. Our cities are, and will continue to be, much more human.



The structure of the town: Civic Units



a nursery-school or kindergarten, and some



open space, with grass and a few trees and, if possible, a **playing pool** for children such as this one in Stockholm. Needless to add, a baker, a butcher, a grocer, a greengrocer, a pub, and a shoe-repairer

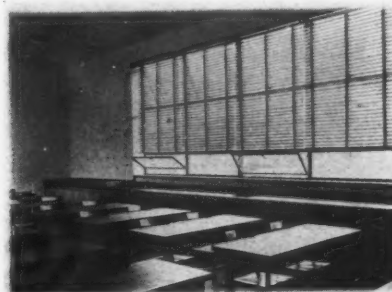


must also be nearby. This example from Sweden is a **co-operative shop**.

The neighbourhood unit

Five such residential units make up into one neighbourhood unit of approximately a thousand families. They need of course more. 3,000-4,000 people is, after all, the population of a small country town. There will, for instance, be 500 school children.

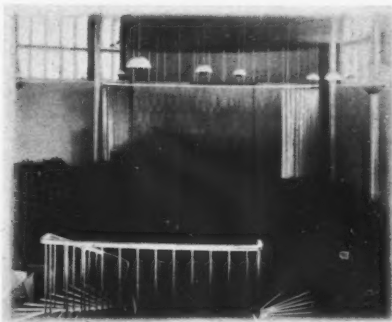
So an **elementary school** must be available, bright and modern to form young minds.



For babies some **health service** must be provided in addition to the kindergarten. More shopping must be catered for, and more



pub-going. A cinema, too, will find enough clients in a neighbourhood unit. But a better social centre will have to be created than are pub and picture-house in most newer suburban estates. The neighbourhood



centre should have a **hall for theatricals**



and dances, a branch library, a **restaurant with a terrace** or an open loggia or porch to sit in. A swimming pool might be nearby.

This diagram shows how the modern town-planner works out the **social structure** of a city. The single dot stands for a Residential Unit (described below) of 200 families. Five Residential Units revolving round their collective services make up a Neighbourhood, eight Neighbourhood units a Borough, and eight Borough units a District. The family of course is the basis of the whole structure (the atom, so to speak) but until there are enough families (about 200) to make special services necessary, the town-planner doesn't get really excited. At that point, however (the Residential unit) the science of town-planning begins.

The residential unit

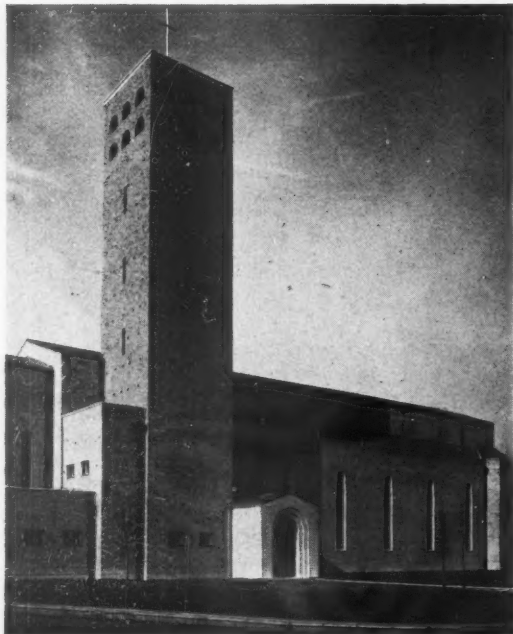
It consists of approximately two hundred families, not more, that is, than any minor group of flats might house. Yet how rarely are those minimum amenities supplied which tenants should take for granted, a communal laundry, a community hall, a **club-room**,



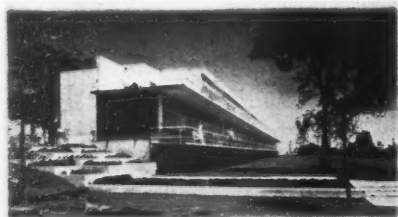
Then hotel accommodation might be found necessary, added probably to the pub. And all these public and semi-public buildings should form part of a visually evident pattern.

The borough unit

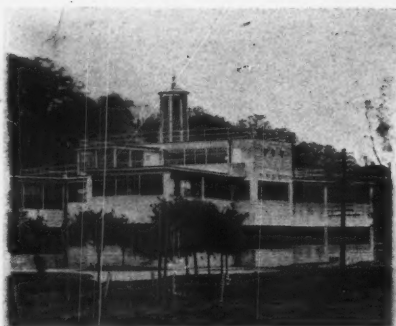
The borough unit comes next: about 8,000 families. Some provision for **divine**



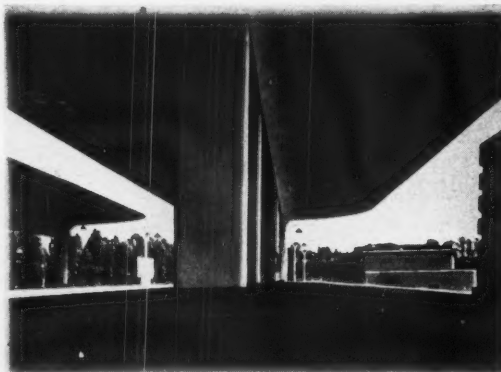
worship may have been made on the neighbourhood scale. Now a spacious parish church would find a good congregation. For bodily as against spiritual well-being the borough unit will need a **hospital**, not a large one, for it is usually assumed that five beds per thousand of popula-



tion is required, but an up-to-date one as regards equipment and accommodation. Schools will now be needed for about 4,000 children. So a **senior school** as well as junior schools will be called for, and that means much more specialized buildings. The picture in the next column shows the science block at Marlborough. What is also of importance, once a population of 20,000 is reached, will be buildings for transport, a **railway station**, goods yards, coal depots, and a bus or coach station. If the unit is a town on its own, the question of town hall and municipal offices now comes up, and has to be considered in connection with the shopping centre,



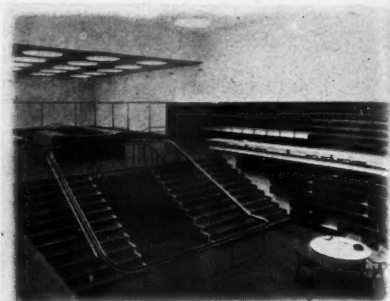
hotel, etc. But in a unit forming part of a larger city, a separate shopping centre is just as important to create mateyness and good-feeling.



The district unit

Now we have reached the largest unit below the city, the unit of 60,000 families or over 200,000 people. Civic administration now requires a large building. Norwich with its new city hall has 150,000 inhabitants. But a city hall is not enough. A civic centre

should comprise a **concert hall** (see facing page), a **museum** (see the Swiss example at the foot of this page), and a large **municipal library**. For education, grammar

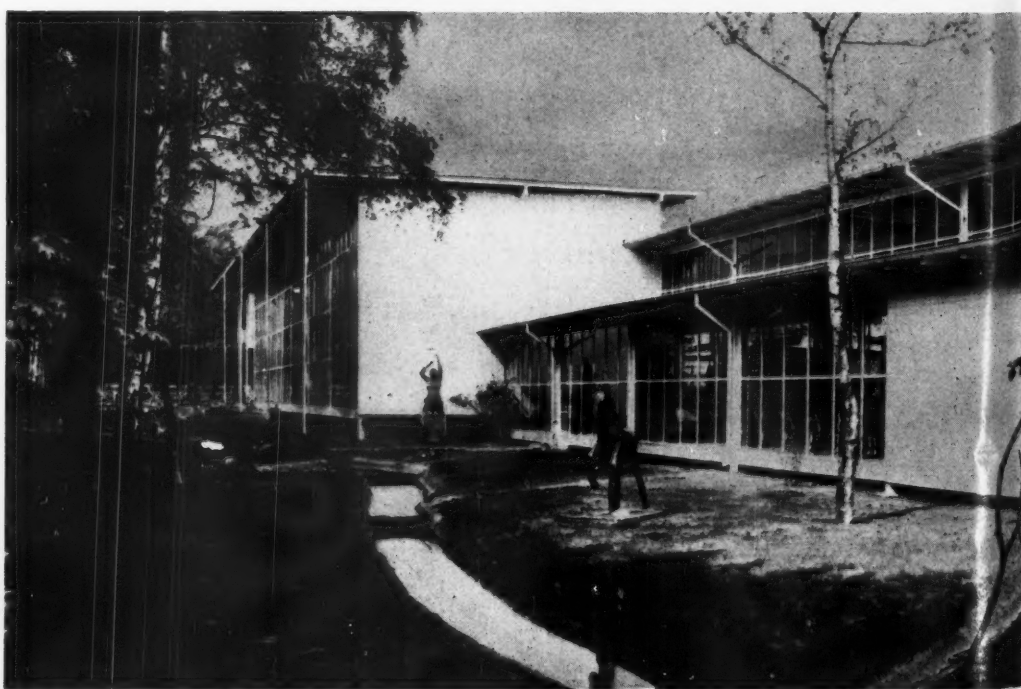


schools, a **technical school** and an art school must be available; for looking after the sick,



specialized hospitals (see facing page). Local trades and industries may also call for specialized centres.

The great importance of the unit principle, as will be clear from our examples, is that it enables the planner in working out improvement schemes for existing residential districts to convert them from amorphous agglomerations into live organisms.

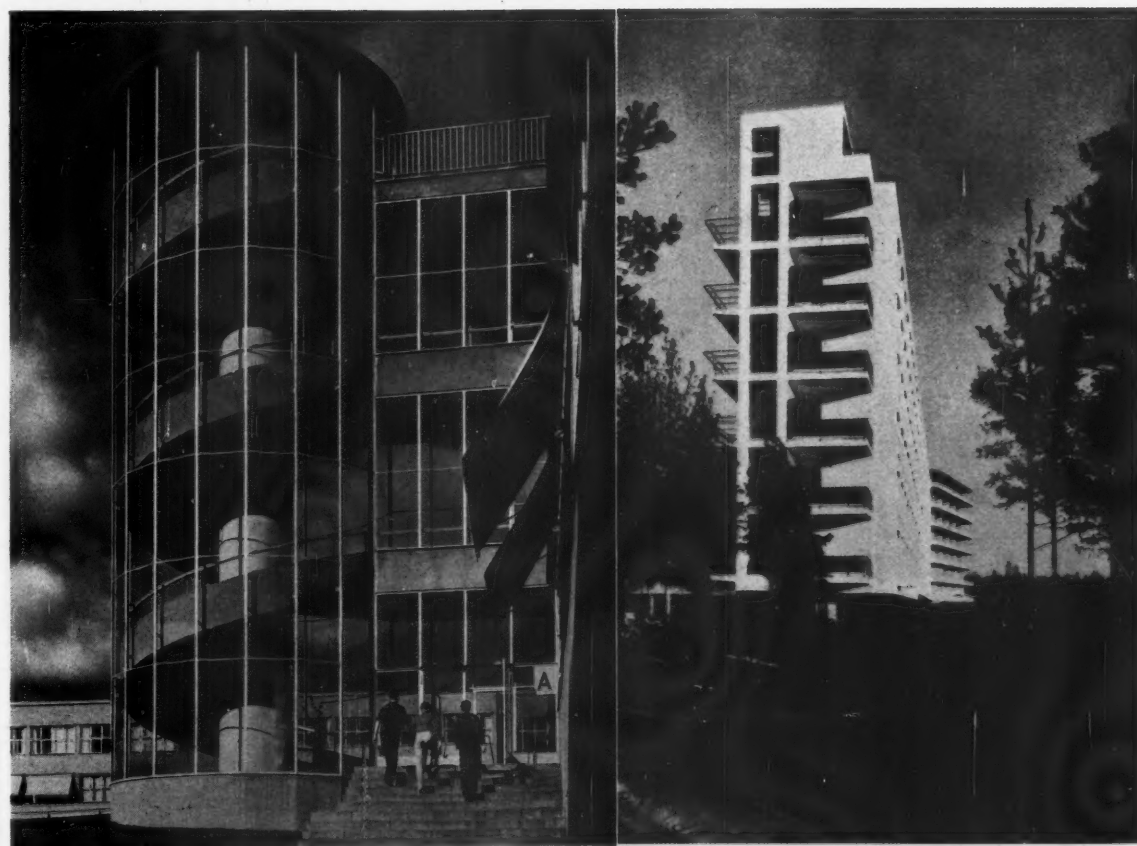


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CIVIC DIGNITY

Nils Eriksson's exquisitely proportioned Concert Hall at Göteborg, with Carl Milles's fountain in the fore, a Stockholm school by Paul Hedqvist, and Aalto's famous hospital at Paimio, Finland. It is architecture such as this, functional, noble and sensitive, that will be needed to make the citizens of post-war Britain take pride in their towns.



INDUSTRY AND AGRICULTURE

A Swedish flour mill, well located from the farmer's and the worker's viewpoint, and well designed so as to blend with the countryside from the hiking townsman's viewpoint.

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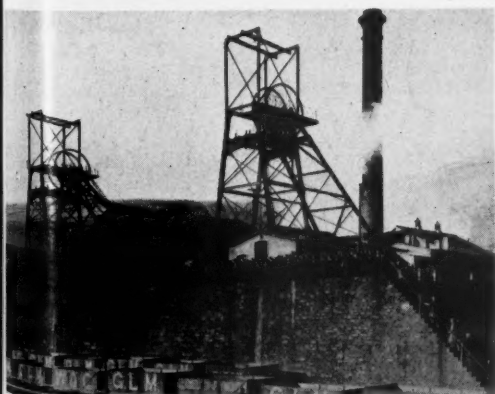
Coal-mi

Planning for work: Industry and commerce

In the previous pages we have examined some elementary principles of civic planning. Now we come to planning for production, the term still used in an architectural sense. That does not mean that the architect who designs industrial or commercial premises can do without a live social sense and a good deal of social and technical information. But what information he acquires should be made available to him by the economists and the engineers. His own job is the physical expression of social and technical functions.

The first thing that is needed to recover healthy conditions in existing industrial districts and to secure them in newly planned ones, is a separation of factories from living quarters. We have seen that Ebenezer Howard preached that fifty years ago, and that all the town-planners since have agreed on this point. It is, of course, chiefly a matter of smoke, and if smokeless fuel could be used, its importance would diminish. For the separation has one serious drawback in modern cities. It involves transport to and from work, and transport costs time and money. So where factories can be run without possible damage to those living nearby, housing estates with the social necessities and amenities of their respective unit sizes could be developed within walking distance, provided of course the whole formed part of a coherent regional plan (see Zlin, page 105).

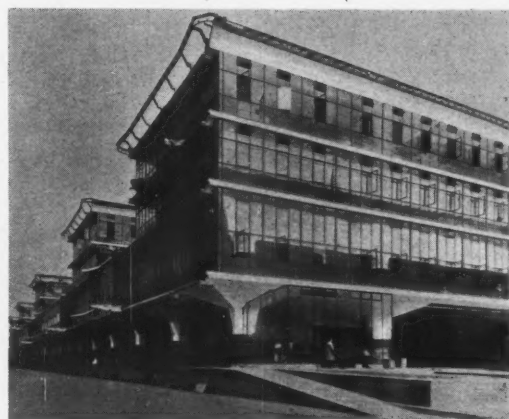
Once this relation of housing to factory is considered, the planner turns to industry itself. The industries of Britain have been analysed in many ways and for many purposes, according to what problem the investigator happened to follow. One may be interested in size of unit, the other in steady or cyclic employment figures. For the architectural planner the most useful division is that into (1) extractive, (2) heavy and (3) light (or mobile) industries:



Coal-mining is an extractive industry.



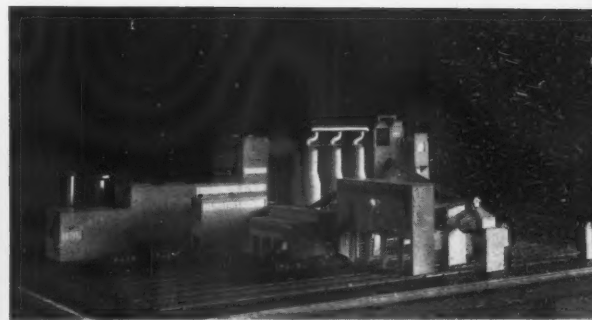
A blast furnace forms part of a heavy industrial plant.



A factory of drugs belongs to mobile industry.

Now for the regional planner this division is of the utmost importance. Extractive industries cannot be moved away from where they are. Heavy industries are also as a rule rooted in one particular neighbourhood. Light industries on the other hand are often more "foot-loose" (to use Professor Sargent Florence's expression) than planners have hitherto realized. Given adequate social and economic research, they may be transferred to more suitable surroundings.

Then, where new buildings are required, the architect in the usual sense of the word comes in. He has to find out how production works and design accordingly. In a coal cleaning plant such as the one illustrated in our diagram, the progress of treatment has been worked out by the architect, Professor Cordingley, with the precision with which the

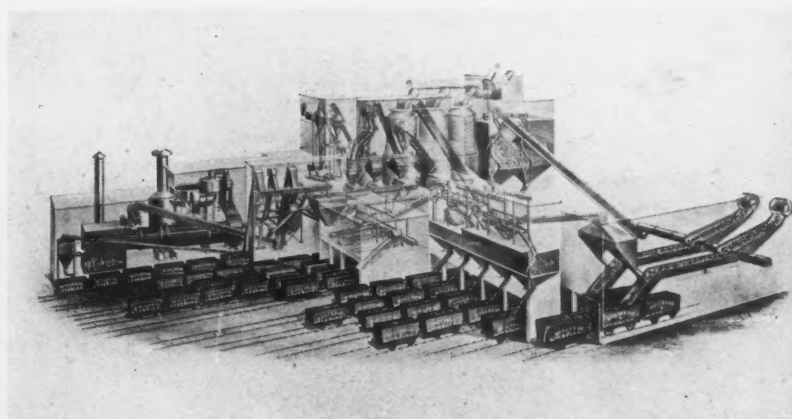


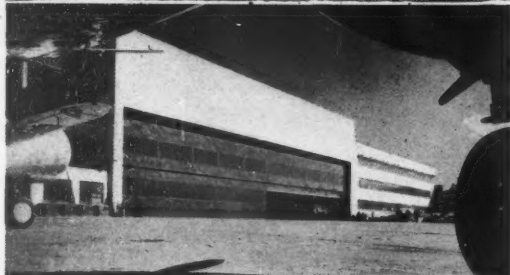
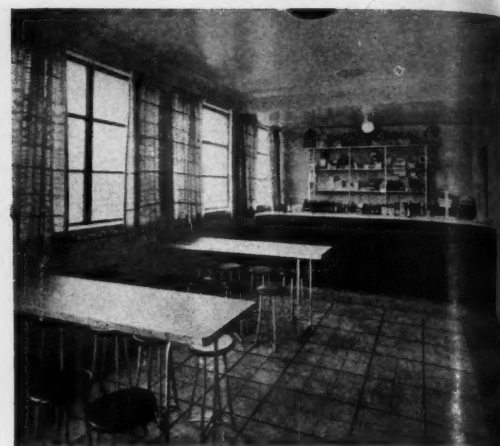
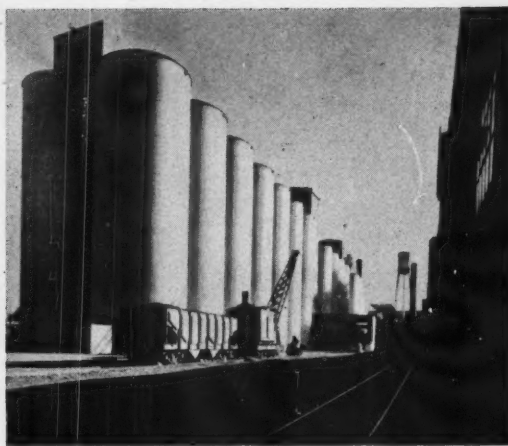
engineer designs a new piece of machinery.

Then, before structural work begins, he puts the design into the shape of a model so as to test the aesthetic value of the ensemble. The model in the case of our coal cleaning plant turned out highly satisfactory. It has got all the neatness of a well-designed turbine plant or duplicator. No parts stick out unnecessarily. All is compact and smoothly encased. From drawing and model the reader will find it easy to get an understanding of the working processes which the architect had to consider and express.

Coal comes from the mine by trucks from the right. It is roughly sorted out into larger and smaller sizes. The larger size goes into large bunkers for storage, the smaller size passes through more accurate sizing screens and then into the dry-cleaning and washing chambers. The large cylinders in the centre of the building are coal-dust collectors and filters, through which the exhaust air is pressed before being released into the atmosphere. Further left are rotary drums to dry the washed coal. These drums are heated direct by the dust extracted in the filters from the exhaust of the dry-cleaning plant. After all these processes have been completed the finally graded coal is shot into trucks and despatched.

Now if you compare a number of such





functionally and aesthetically successful factories, you will see that they can be divided into two main architectural types: the single-storeyed and the multi-storeyed building.

Single-storeyed buildings are necessary on the one hand for heavy products, and a heavy plant such as is needed in these American aircraft factories. On the other hand they will also be erected, where land is cheap and a strictly horizontal production way advisable. They are, of course, ideal for conveyor-belt processes.

Multi-storeyed factories, such as the famous van Nelle cigarette works at Rotterdam, will be erected chiefly for light and small products and manufacturing processes requiring a good deal of labour. Their advantage is not only that they occupy less ground, but also that vertical communications between the departments can be functionally very helpful.

In actual fact, of course, the choice of building type and its development are much more complicated, and solutions will differ in every case according to site, volume of output, future plans, and many more considerations.

A flour mill, for instance, will need tall buildings, because its raw material, grain, is nearly always stored on the premises, and for elevators a set of tall cylinders has been found to provide the most useful form. The mill must be connected with railway tracks for incoming grain, a transport line from truck to tops of elevators, another from foot of elevator to milling machinery, and finally one for the flour from the packing and goods-outward to the railway. This complex production course makes for a varied and interesting silhouette.

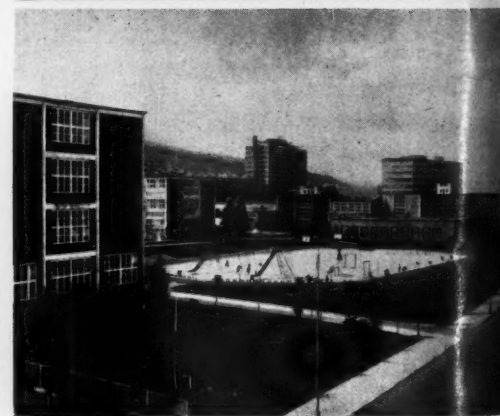
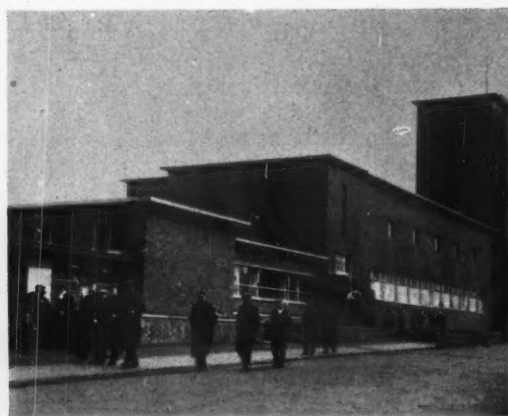
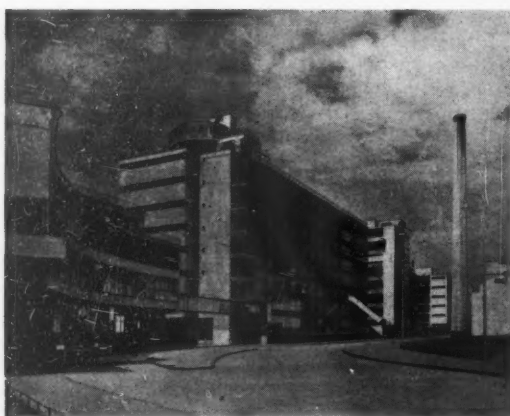
In none of all these types, however, and that need hardly be said specially, is there any excuse for unsightliness. Elevators, warehouses and factories can be noble structures, and work in them will be better if they are. For atmosphere, in the aesthetic just as well as in the hygienic sense, affects work and worker.

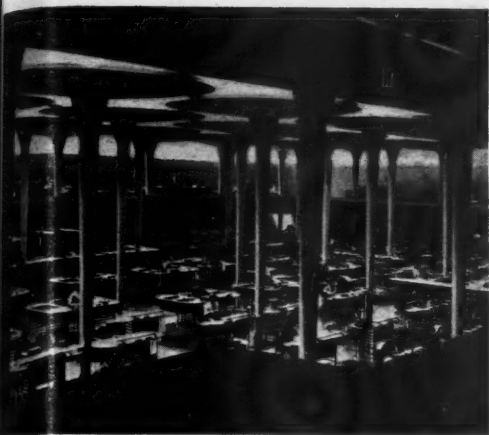
Far too little is, as a rule, still done by manufacturers for atmosphere in both senses. Workers' welfare arrangements are in

ninety out of a hundred cases still quite inadequate. The proud example as to what can be achieved and must be achieved has in Britain been set by the Miners' Welfare Committee in its series of **pithead baths**, satisfactorily designed and excellently equipped, as this corner from a canteen exemplifies.

What is true of the industrial worker, his shop and his welfare, is also true of the office worker. The vast majority of existing premises is inadequate. Yet here again well-designed and well-grouped buildings can be an ornament to any city and, if planned as one large unit with factories and social amenities, an ornament in any countryside. Both our examples below come from Czechoslovakia. The upper picture is the famous **Pensions Office in Prague**, the lower gives a glimpse of **Bata's at Zlín**, perhaps

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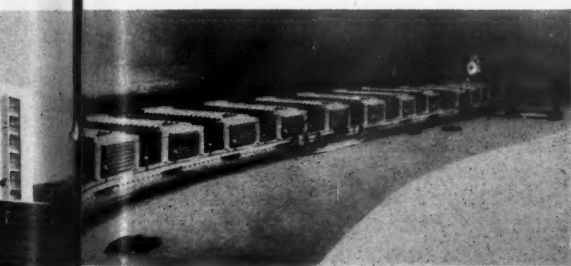
Planning for work: Agriculture



all quite the most extensive and complete European factory unit (compare page 105). The picture shows the centre with sports arena, offices and factories, the hotel and some of the Welfare baths, firm's tied housing.

Monumentality is achieved at Zlín by the most strictly architectural means. Frank Lloyd Wright's Johnson Building with its tall general office, its lavish indirect lighting, and giant concrete pillars, also achieves monumentality, but of a more fanciful kind.

Besides production and administration, the architect has to supply premises for the distributive trades, wholesale as well as retail. Below is a model by the Cement and Concrete Association showing that repetition even in warehouses has a certain dignity, while the picture of Peter Jones's proves that a department store can be an ornament to any district or town.



Like planning for industry, the job of planning for agriculture begins with research into location. What land must remain agricultural or be recovered for tillage or pasture? What land is especially suitable for corn, what for grass? What land is needed for the recreation of townspeople? What lines of demarcation must be drawn to separate urban growth from open country to be left in its natural state?

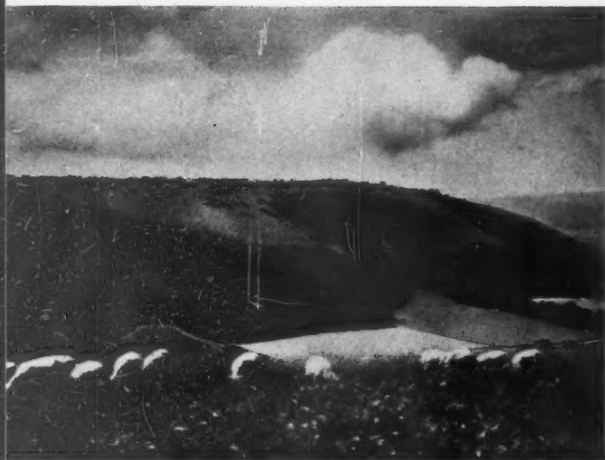
But by saying natural state, one really repeats an all too common error. There is very little land left in England that can be considered anything like virgin land, a few commons, perhaps, and marshes and moors. All the rest is, as we see it to-day, the work of man, and most of it the work of man during the last two hundred and fifty years. The eighteenth century landowner gave the English countryside its unmistakable character, as a conscious civilizing and rationalizing effort. So what you are so fond of (the picture above is a **Shropshire view**) is the work of a comparatively short period. And unless you are prepared to plead for the preservation of the countryside purely as the townsman's pleasure ground, you should allow it to grow and change according to changed needs (which does not mean that such changes cannot be brought about in an orderly fashion).

What to-day's needs actually are, few yet

know. Are we developing towards small independent ownership as a healthier social system, or towards large-scale commercial or large-scale co-operative farming? Will market-gardening grow in importance? Will forests spread?

Anyway, whatever course things take, they cannot be directed at all without surveys of land in relation to its uses. This very moment Government departments are busy on such surveys. Here for instance is **typical cattle grazing scenery**.





The **sheep run** is of quite a different character, on a larger scale, less subdivided, either by hedges or by trees, of harder and drier ground, with harder and drier grass. When the agricultural improvements of about 1800 produced fatter and healthier sheep on a more substantial diet, England's wool lost some of its previous fineness. Nowadays the finest wool comes from the desolate plateaux of Spain, while the valley of the Tweed, the Cheviot Hills, the Highlands and the islands of the Scottish coast such as Harris produce a sturdier wool than any other.



Forests and chases used to be a major feature of English scenery down to Stuart days. Their ancient function is evident in the name chase. Only few of them survived the agricultural revolution of the eighteenth century (the Forest of Dean for instance and the New Forest), too few, it seems now, for purposes of recreation as well as for economic balance. Hence **afforestation** has been taken in hand seriously by the Government. It is done systematically and as a rule by the planting of coniferous trees.

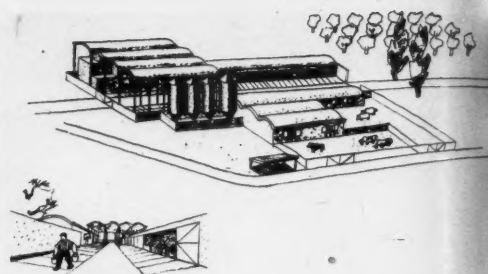
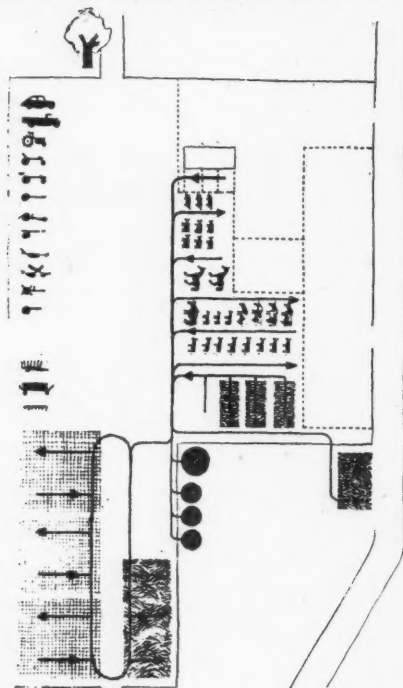
It will in the long run change the face of certain regions considerably. But though



pine forests may look very much at home in certain districts (highlands generally) they may completely dehumanize others where their spikiness is unsympathetic. Round Winchester for instance the conifer landscape clashes painfully with nature's and the Georgian landscape gardener's.

Commercial **market gardening** also has done much during the last ninety years or so to change the character of the countryside close to large cities. Above you see the large hothouses so significant of the market gardening scene, more gratifying as a sign of a healthy agricultural life, than aesthetically satisfactory.

But just as in industry the planner's task does not end, when the problems of location are solved, so in agriculture **the layout of the individual farm** requires far more



research than it has hitherto received. Le Corbusier in one of his delightfully drawn ideal schemes has shown **farm buildings rationally grouped**, with tall sheds for hay and straw, cylindrical containers for more fodder, and further on tool sheds and garages on the one side, stables and cowsheds on the other. The chief lines of circulation are drawn into the plan.



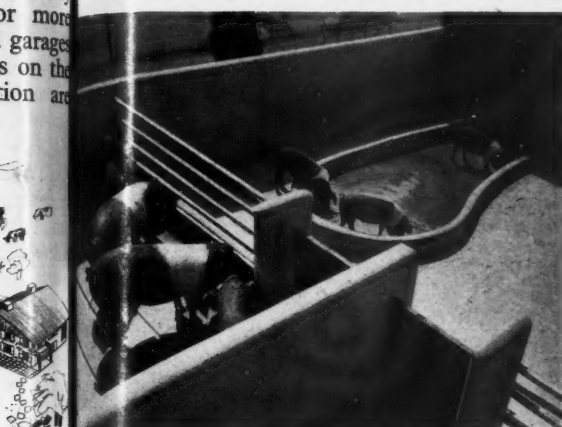
This alpine **dairy farm** on the other hand is a simple affair, but laid out judiciously and with an eye to handsome grouping. The effect of buildings are traditional in appearance, yet clearly of our age in fenestration, and emphasis on long, sweeping line and cantilevering planners. Similar attempts in this country are few and far between. Yet how well would, for instance, the traditional Yorkshire farm lend itself to contemporary treatment.

Worse even than the condition of farm buildings are the conditions of agricultural housing. Not only is there all over the country a hopelessly insufficient number of cottages available, not only are many of them tied, that is let to the labourer on a short lease expiring with the end of employment, not only are many of these, and even more free cottages, wholly inadequate in their hygienic arrangements, but even new labourers' cottages (and farm buildings too) are often designed to obsolete standards.

It is not easy to determine who should be blamed for this neglect. Is it the outcome of the general lack of interest in the countryside as a workshop that characterized the Victorian age and the bad times farming has been through in ours? Yet buildings designed in the contemporary style would look delightful amid fields. The distrust of modern

ed. Le architecture by rural district councils is aesthetically quite unjustifiable. Here is a terrace of land labourers' cottages in

Leisure



Arizona, and here a piggery designed with gusto and a real architect's interest in the home and social life of the pig.

But the Victorian attitude has had a worse effect on the countryside than the purely aesthetic one. It has all but destroyed the village as a live social unit. And just as clever planners analyse the neighbourhood or district few and units making up a city, so they should analyse the social needs of the village and supply them. Not only power and light are usually inadequate, but health services, educational facilities and entertainments too. The village hall, a good effort very often, is not enough.



The splendid village colleges of Cambridge-shire, Impington and Linton give an indication of what must be provided, and on what scale provision must be made. There is no excuse for treating a village or a rural district less generously than the neighbourhood or district unit of the same size in a city.



The townsman's use of the land is as legitimate as the countryman's. There is a great variety for the hiker within the boundaries of England, from the gentle hills of the south-east to the grandeur of West-water in the far north-west. What must the planner provide for these armies of hikers on foot or bike, an army that has increased



tremendously within the last twenty years or so, and is likely to increase even more after the war? The planner's first job, of course, is to secure the land for them, set aside national parks—the whole Lake District should be one—prohibit the horrors of roadside advertising, and control ribbon development.

But preventing bad structures from spoiling the countryside is not the whole story. Good buildings must be provided, and quite a variety of them. Of pubs, cafés and tea places we have plenty; of the pubs many are old, and an asset in the scenery; of the cafés nearly all are new and shoddy. Yet this picture of a **holiday home** in Czechoslovakia shows how such a big establishment with terraces and swimming pool can be an ornament to a scene instead of a blot.

A home or hotel on this scale caters chiefly for the holiday maker with one or two weeks



at least at his disposal; for the comfort of the cyclist and hiker **youth hostels** have of late made an enormous difference. There were 73 of them in England and Wales in 1931 (1,562 beds), 297 in 1939 (10,689 beds). But even that is not enough. Many more are needed, and as they provide for the young, their architectural character should be up to date, simple and cheerful. No luxuries are called for, but honesty in the treatment of materials and a live understanding of the character of a site.

Besides the hotel, the inn and the youth

hostel, there are a number of new holiday organisms that have grown only within the last decades. **Caravan dwellers** will more and more have to be catered for. What must be avoided is caravans littering the country as bungalows. It is time that we set aside **sites for caravan camps**, equipped tidily and provided with the necessary services and community buildings.

The problem is, in fact, not very different



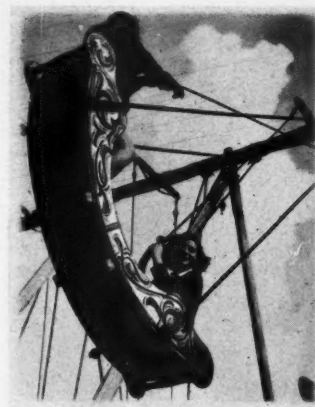
from that of the **holiday camp**. This again will probably have a big future. With its proportion of private and public quarters and its abundance of cheerful entertainments it caters for a demand with which Southend and Brighton and Blackpool cannot cope, and, by collective administration, satisfies



it more cheaply than the many small private interests of the seaside resort can. It is the store principle applied to holiday needs.

And that entertainment of Blackpool calibre

is amongst the major holiday needs of the nation is true beyond question. One must accept it and should only deplore that the prevailing taste is not provided for more



gracefully. The traditional **fun-fair**, one of the all too few survivals of folk art in England is just right. There is nothing much wrong either with the annual country wakes. It is the artificially mass-produced amusements of the seaside that have not yet found an architectural setting acceptable both to the seekers after fitness and the seekers after entertainment.



There are a few exceptions, of course, the Bexhill Pavilion for instance, and the smaller and more humane **Folkestone Pavilion**. But they are rather high-hat, and it cannot be said that mass leisure has produced an architecture which is adequate to requirements in being either picturesque or amusing enough. Yet this is and always will be a question of great import in a healthy democracy.



Transport



ground stations of how noble station buildings can be.



invention of precincts, the parkway, i.e.



By rail

But to take you to the seaside or the Lakes, or to take you to work from home, or to take you to the factory, and factory products to the warehouse and shop, transport is needed. It is the life-blood of civilization. We would still live in isolated manors and serfdom, had not river and sea, and then roads, and then canals, and then railways enabled our forefathers to get about, to found and run towns, to import and export products. How could the machines which the eighteenth century had invented have been installed and manned, how could the workmen who had travelled to work these new machines and settled down around them, be fed, if it had not been for improved roads and canals? And could England have become the workshop of the world, if railways had not been the porters and servants of industry? There is perhaps no other single invention that has caused such revolutionary changes in the rhythm and tempo of the nation.

Yet after a few ambitious buildings such as old Euston and King's Cross Stations, our railway architecture settled down to a deplorable meanness. What country anywhere would have been satisfied with the Gentlemen's Lavatory style (as a matter of fact there are many romantic exceptions) that forms the corpus of England's stations, in spite of the fact that the late Frank Pick and his architect Charles Holden have given the world an example in their London Under-

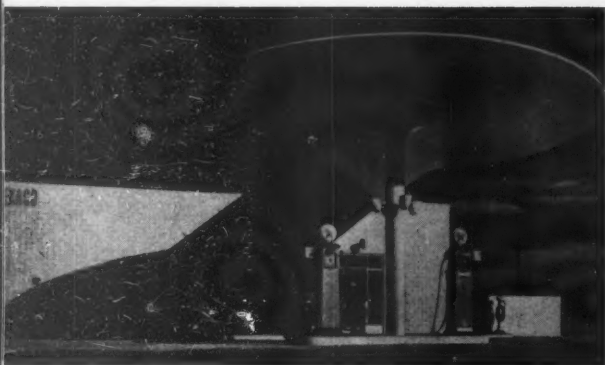
To find large stations of an equal standard you must leave England and go to Florence, Stuttgart, Helsinki, and a few other continental cities. In Florence especially it has been proved that a frankly contemporary structure can marry to perfection with a city saturated with architectural traditions. The railways in Italy, Germany, Finland are State-run. But the sumptuous transport architecture of America is due to private enterprise.

By road

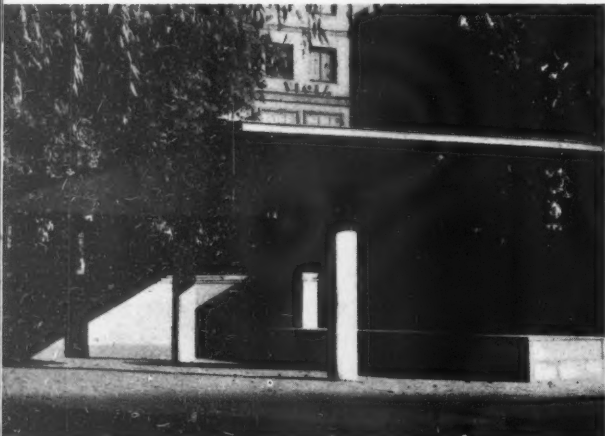
The road seems the eternal traffic way. It ruled with undivided sway from the dimmest prehistoric past right down to the eighteenth century. True, mediæval, Tudor and Stuart roads were appalling, and whatever could be shipped by river and sea avoided them. But across country they were on the whole the only means of communication, and people had to put up with overturned carts and carriages and highwaymen. Then about 1800 the modern road was established, by McAdam and Telford. Thirty years of fast road traffic ensued, followed by the anti-climax of fifty years and more of crowded railway lines and deserted roads. To whom did not then the fate of the roads appear sealed? Yet the motor car and motor lorry came in, and by 1939 it was the railways that pleaded for a fair deal. The unique increase in road traffic over the last thirty years has led to the development of a whole new traffic science. The surface of the fast traffic artery, the separation of slow from fast traffic, the

the road seen in relation to scenery, the clover-leaf crossing as the most complete solution to the problem of how all traffic turns at a crossing of four roads can be effected without losing time—the problem is, of course, especially intricate in cities—these are only a few of the road planner's jobs. Then there is here, as everywhere in these pages, besides the planning side, a strictly architectural side to the problems. The new speed of transportation has, for one thing, influenced modern architecture as a whole. Streamlining has become a stunt in the vocabulary of many advertisers. But it is, or used to be, a very real influence on building. The sweeping bands of modern windows have a more than accidental resemblance to the liner's decks; the curved corners of buildings and of furniture remind one of the curves of car and plane, and even our metal chairs and our low and sloping upholstered easy chairs are, this is less well known, derived from the seats in cars.

Amongst special buildings for road traffic we find a few of the best and many of the worst that one can come across anywhere. The atrocities of roadside and suburban garages and filling stations have often enough been depicted, varying, as they do, from the most elaborate sham Tudor to the jerriest shacks. The excellent Cautionary Guides which the Design and Industries Association used to publish, have done a very valuable job in placing them on record and comparing them with good modern structures.



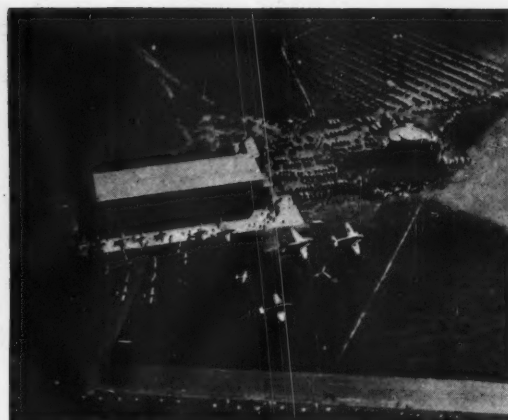
A filling station such as this (in the United



States) with its concrete "umbrello," and **bus or coach shelters** (the picture is Swedish) can be amongst the most dramatic statements of a new style. Their cantilevered forms, the tension of their wide stretches re-echo the rhythm of the fast traffic on the roads whose interminable lines they articulate.

By air

Air transport has the most recent and the most spectacular history. England is too small to show it at its most adventurous. One must go to the Dominions or the United States to realize what a powerful competitor the plane has become for the rail and the road. Air transport architecture, unencumbered by tradition, is, generally speaking, of a very high standard. The architecture of



the airport and the hangar are, as a rule,

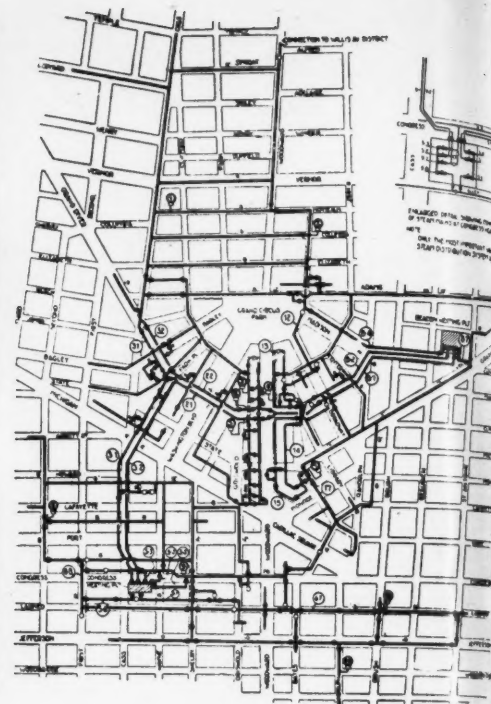


worthy of the viking spirit which they serve. Their halls have wide spans, and huge doors fold silently at the pressure of a button. Their clean and orderly booking halls and airy refreshment rooms are the very opposite of our neglected railway stations. And the fact that in cities where restaurants or cafés connected with aerodromes have been opened to non-travellers these have become so extremely popular may be chiefly due to the thrill of the plane, but can no doubt, to a certain extent, also be ascribed to their fresh and engaging architectural features.

Transmitting power

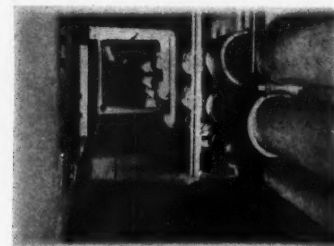


One more means of transport must be mentioned specially, because the majority of people do not think of it as such. It is transport by wire and pipe. The wires flung **from pylon to pylon** send power across the country which, were it not for electricity,



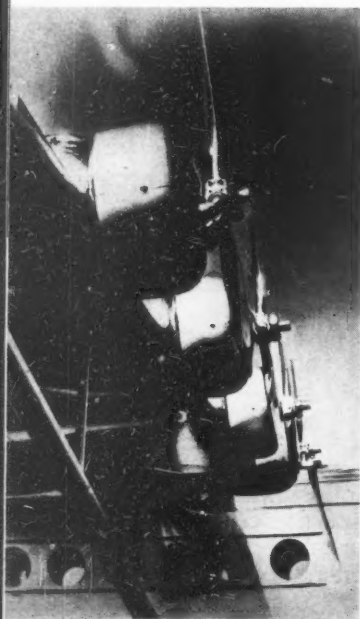
would have to travel clumsily as coal on the railways.

Gas pipes fulfil obviously a similar function as also do the **district heating pipes** by which a house and a whole estate such as the



American one, whose plan is shown, or the Quarry Hill Estate at Leeds, can be centrally heated. The illustration above shows the pipes of a central heating system. All the carting and carrying of coal, all the smoke from so many chimneys and the waste of heat sucked up the flues are thus done away with.

The importance of power transmission to the planner is twofold. On the one hand he is concerned with the right location of power stations and gasometers, and the handsome appearance of their buildings and transmitting machinery, on the other side he is keenly interested in an ever wider domestic and industrial use of power. As long as smoke lies as a blight over Britain, it is pretty well hopeless to plead for a healthier open-air life, for the café and restaurant in the sun and the swimming bath in the open instead of under cover, however well designed they may be.

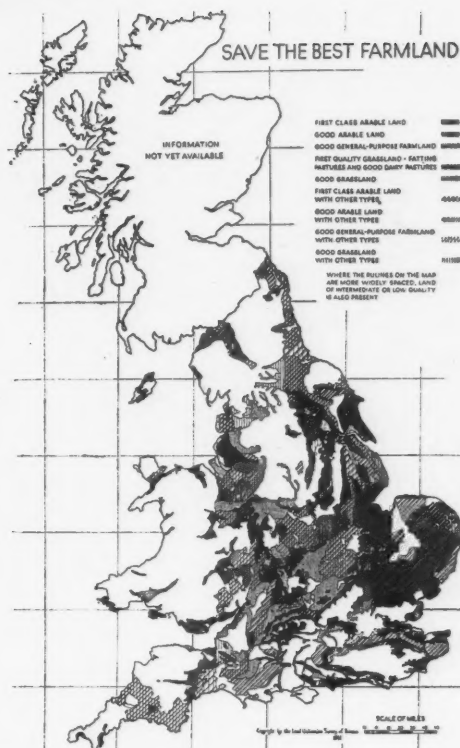


The planner's workshop

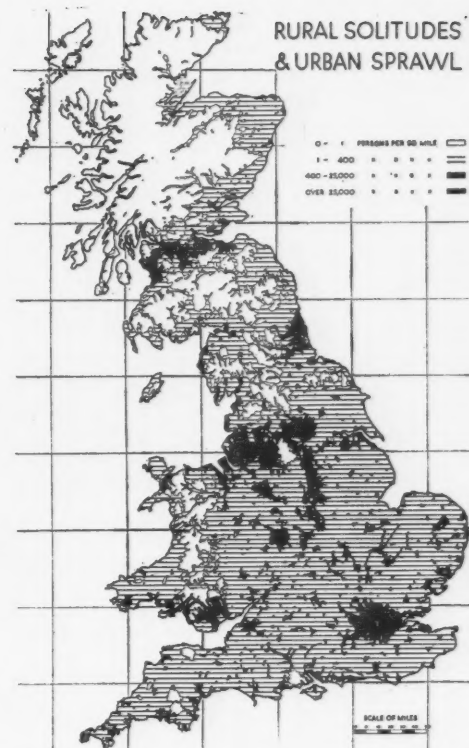
Look back for a moment at what you have so far seen. First the beauties of the past, and how uncontrolled industrial growth has maimed them. Then housing as it should be, and building for industry, agriculture and leisure as it should be. In those pages you found a reply to one of the two questions which we have put right at the beginning: **What must be done?**

Now we come to the second question: **How can it be done?** You may have no doubt that it can all be done, or you may be one of those who think that a less unsightly Britain is a dream of impractical cranks. It is nothing of the sort. It is feasible, and it can be begun now; as a matter of fact it is being begun now.

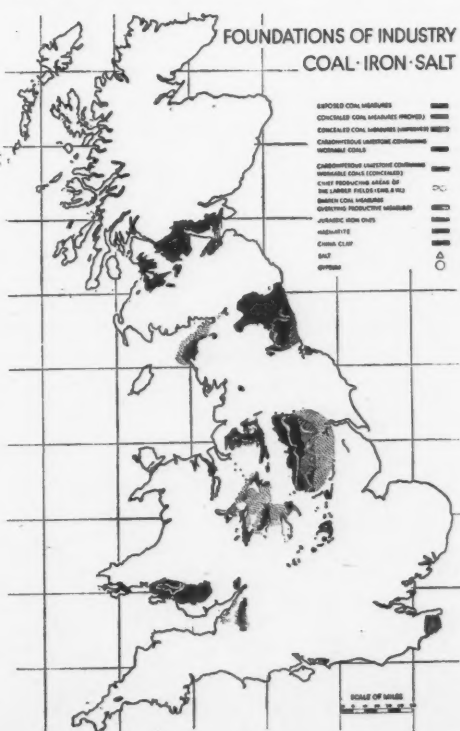
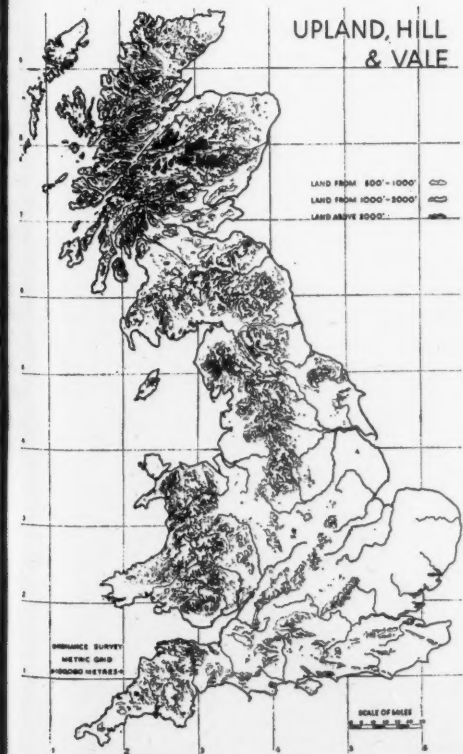
For the basis of rebuilding is planning, and the basis of planning is research. Here is some of the research, as it now goes on in the studios and studies of the Ministry of Town and Country Planning, and in private and semi-official planning groups, such as the Association for Planning and Regional Reconstruction, and the 1940 Council. The 1940 Council has published a pamphlet **Ground Plan of Britain** from whose fourteen maps we show you five. Such maps are the indispensable raw material for any national planning. They must one day be available as a British Atlas in the greatest detail.



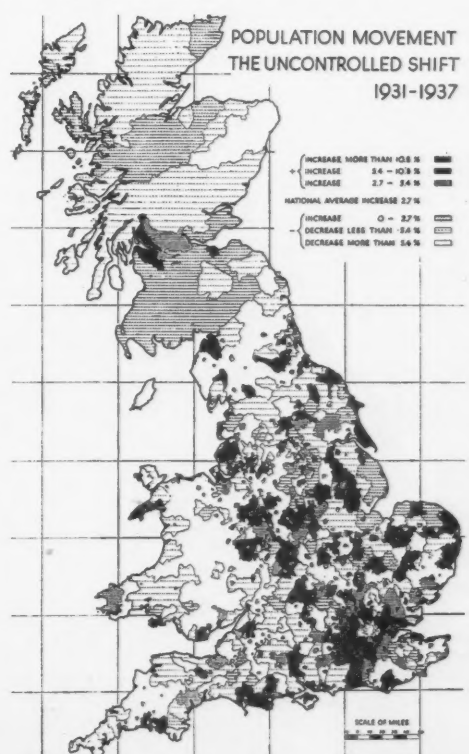
The best farmland must be preserved or restored to cultivation.



"Conurbations," as Patrick Geddes called urban concentrations. They are the regions most urgently in need of control.



Regions of iron and coal are the foundation of industrial location. For extractive industry (for the term see page 95) cannot be moved about.



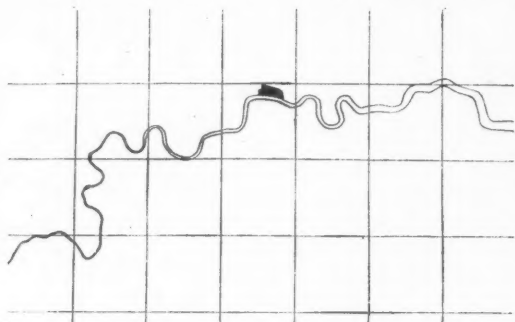
For they are the magnets of population. And their attraction after the war will be no

The physical geography of Britain is the bedrock of all planning.

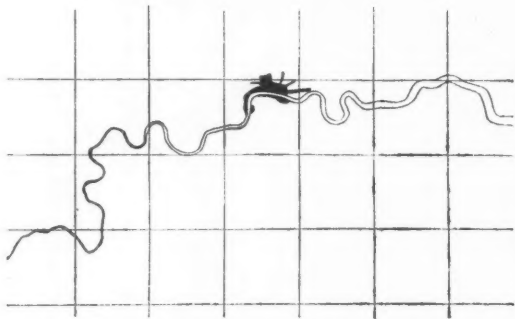
less effective than before. So architectural planning will naturally concentrate on urban problems.

So long as towns were small, uncontrolled growth could never become a real menace. And before 1800 there was only one town in England that we to-day would not call small: **London**. So to London the problems that worry us now have been familiar for centuries, and the effects of unplanning have been more disastrous than anywhere else. As early as c. 1600 Stow complained of the Mile End Road as "so unsavoury and unseemly an entrance to so famous a city." The East End, you see, is as old as that.

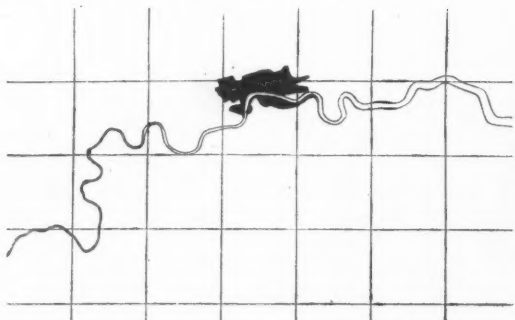
Watch how London developed from c. 200



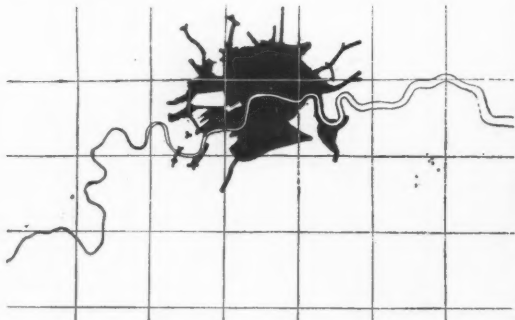
B.C. that is the Roman settlement,



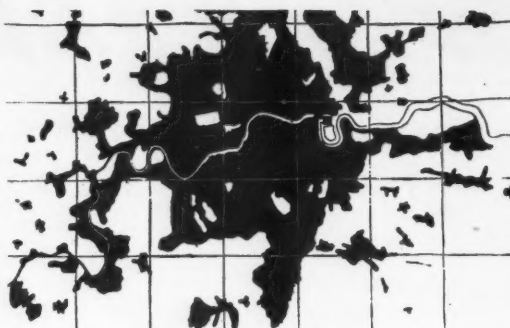
via Elizabethan London (c. 1560) with the first ribbon feelers coming out,



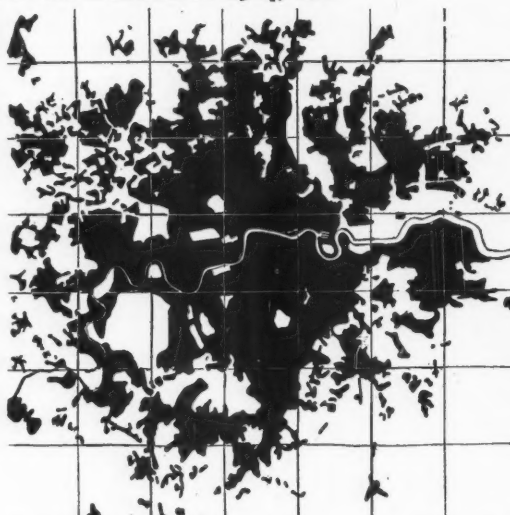
via Georgian London (1764) with compact East and West Ends,



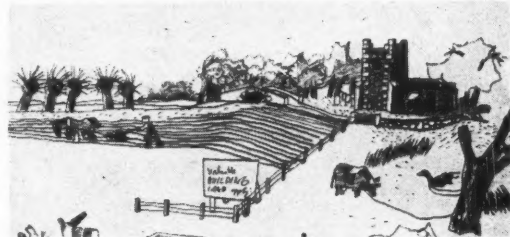
via Victorian London (1862) getting more formidable,



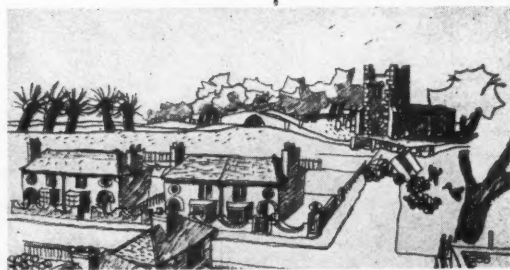
to the London of 1914, and



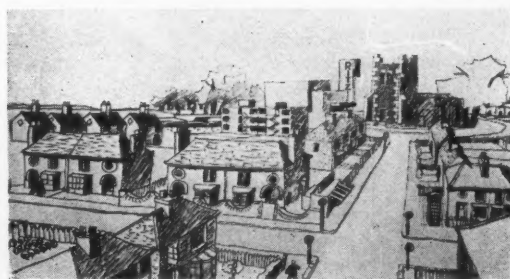
the Leviathan London of 1939. How the new suburbs are developed everyone knows.



First Act: Valuable building land for sale.



Second Act: Suburban houses on the left. Building begins on the right. The old oak tree still holds out.



Third Act: All the green is now eaten up. A shopping centre is being established by the church—with flats and a modernistic picture palace. Another few years and the trees in the distance will also have been

chopped down. There will be nothing to make children believe their parents' stories of the plough and cow, where the cinema and the telephone box now are.

How can this be made impossible? Only by laying down rules for land development. They can be of very different kinds, but one thing is certain. They cannot contain all the detailed peculiarities of every site in the country. They must be general and adaptable to individual sites. It is starting the wrong end to draw up pretty pictures of new avenues and vistas. What must first be defined is where industry shall spread and where it shall be banned, where new domestic accommodation shall be provided, where open spaces shall be left, and what principle may be laid down to direct an organic growth along the lines first laid down. After that there come up such questions as where flats and where small houses shall be built, or where a civic centre and a shopping centre shall be. The actual course of streets or appearance of buildings comes last of all.

Now such a master plan cannot be the work of one man. It requires years of strenuous team work to elaborate. Trained planners are the only ones who can do it. We know (see p. 90) that they can be guided by one of two ideals:

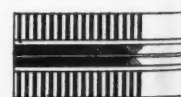
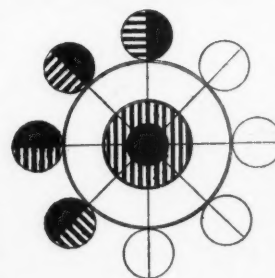


the concentric or the linear.

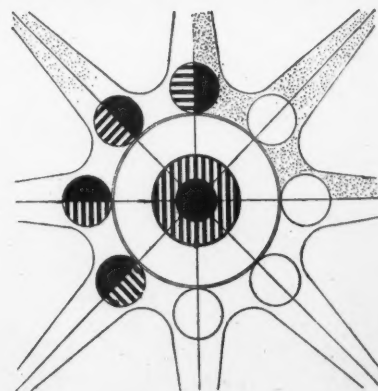
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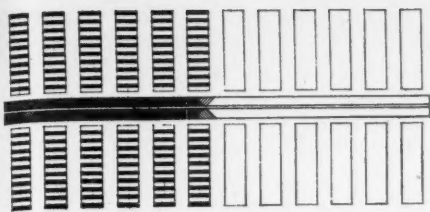
This indicates planned development according to the two principles:



A centre and four satellites on the left industrial centre and two bands of housing stretching along the main axis on the right

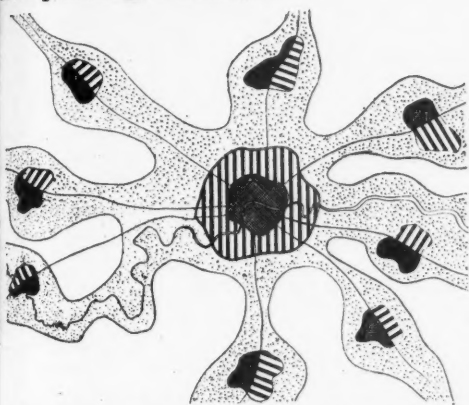


Next stage (satellite principle): main traffic arteries and green spaces filled in:

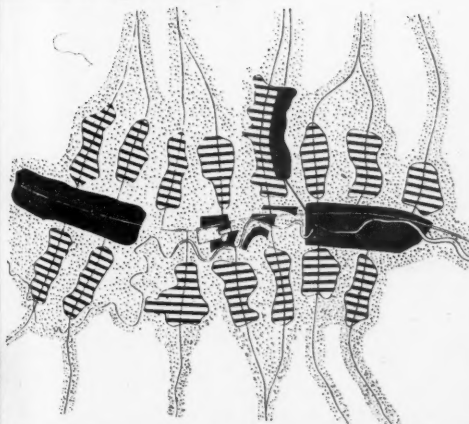


Same stage (linear principle) : Housing spreads. Main artery through industrial band. Green spaces reaching towards centre between housing areas.

So far this has been entirely theory. But we are concerned with London. How could one apply these two basic principles of modern town planning to London?



Greater London on the satellite principle. Wide strips of green everywhere approaching the centre. Satellites grouped into the Slough, Uxbridge, Watford, Lea River, Romford, Dartford, Bromley and Croydon areas. The satellite London of the future would not look like this, of course. There would be compromises with existing built-up areas everywhere. But as a master plan this is a possibility.

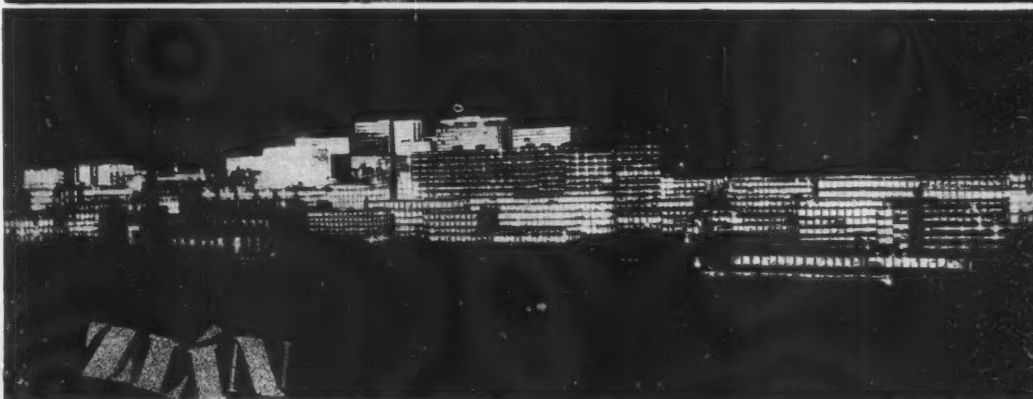
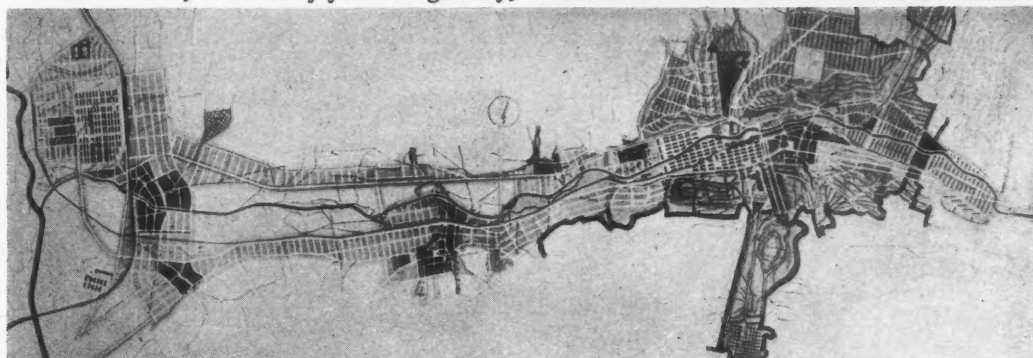


The **Linear Greater London** is just as possible, with the historical centre preserved, with chief industrial areas on the lower Thames, along the River Lea and the Great West Road, and with housing strips following the main traffic lines; green spaces everywhere in between right to the heart of the city.

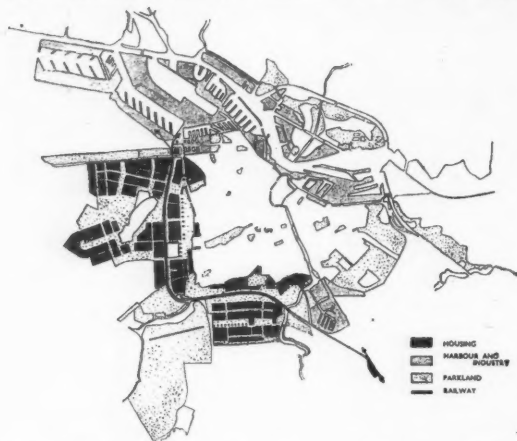
(Note: Readers of THE ARCHITECTURAL REVIEW will no doubt, in looking at this linear plan, be strongly reminded of the MARS plan, published in THE ARCHITECTURAL REVIEW in 1942 and so much discussed at the time. The diagram above may in fact be well described as an attempt at a humanized MARS plan. The original MARS plan was a bold diagram superimposed on the site of London. The new variation is not a superimposition but an adaptation.)

The town planner's practice will, as a rule, consist of constructive compromises between ideal plans and practical limitations. Only very rarely will he have a chance of planning a town from scratch. This occurred at Letchworth and Welwyn, where housing prevails over industry. The most spectacular example of an industrial town planned in every detail exists in Czecho-Slovakia, and is too little known over here. It is **Zlin**, where the Bata shoes are made, a town of 40,000 inhabitants, almost exclusively run by Bata's and populated by Bata employees. Bata's have their newspaper, their theatre, and vast sports grounds, their hotels (double bedroom and bath from 2s. 9d.) and department store (lunch 6d.), their schools and apprentices' hostels. The long stretched-out centre with its seventy factory buildings is surrounded, up the slopes of the wooded hills, by planned housing. Rents come to from eight to twelve per cent. of wages. All is concrete, and all designed to a 6 by 6 metre unit.

However, while such completely new structures may here and there even be possible in an intensely occupied country like England, they will always be the exception. The planner's daily bread is development and improvement of existing cities. By far the most comprehensive example in Europe of how this can be done, realistically yet courageously,



is **Amsterdam**. There a master plan was drawn up in 1926. It was filled in to varying degrees of detail in 1929-33, on the basis of extensive research into population movements, development of transport, especially waterways, industrial structure of an area of approximately 30-40 miles around the city,



farm and gardening land, etc. The result on paper was a report of five volumes with several appendix volumes. But this result began at once to be translated into reality. **Two vast new housing areas** were provided for, one lying towards west with the harbours and their industrial surroundings further



north. It is chiefly a **working-class district**.

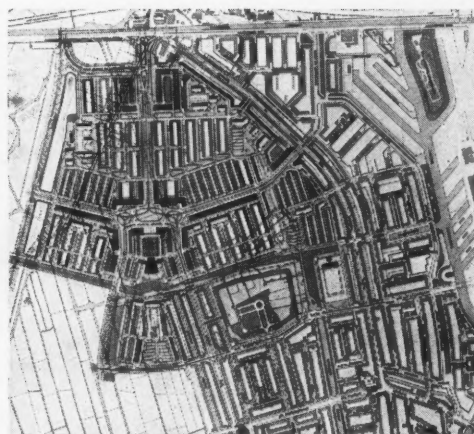


The other is **higher rental housing** to

the south of the existing city. Both consist, as will be noticed, almost entirely of blocks of flats. This is in accordance with the Dutch and indeed the universal continental habit. In the north-west district there are isolated skyscrapers along the edge of the park; in the south district, further out, beyond the generously spaced strip of playing fields, you can



see terraces of individual houses. **A new park** of some 2,125 acres, that is about the size of Richmond Park, separates the two districts (see plan). It is laid out on English principles with much water, especially a straight boat race course nearly a mile and a half long. While such a park can, of course, be laid out in every detail, much of the detail work of the housing areas must be left open. Streets are drawn in, height zones laid down and special areas reserved for skyscrapers and small detached houses. Everything beyond that can be left to the moment when building actually starts.



This again is done according to plan. **The first section to be developed** lies in the north-west near the harbour. It is to house a working-class population of 35,000. On the plan the blocks of flats (with their inner courtyards of sizes often far from ideal) are clearly visible. The civic centre with town hall, principal shops, theatre, cinema lies towards the left bottom corner. Much open space is provided. Schools, nursery schools and dwellings for the aged are in close proximity to the parks.



1914

1939

What has been possible in Amsterdam should be possible in London. Yet masses of people believe that it will be blocked by selfish interests. Any comprehensive London plan is invariably described as utopian, or is pooh-poohed as prohibitively expensive. One argument is as bad as the other. Just remember how much of the present Greater London area has been **built over within the last twenty years**. Don't forget that, if a master plan had existed in 1918, our miles of new suburb



might be in parkland like this (Plans for **new town in Berkshire** by a team of Architectural Association students). There is no excuse for leaving things to themselves in and around our industrial cities. There is no excuse either for not getting on with the job at once. It took four years to complete all the necessary research in Amsterdam. It might well take longer in London. The building rush at the end of this war must not catch us napping. Principles must be agreed, not only principles of planning, but also—and that brings us to our last question—of building technique and building aesthetic principles.

Technique and style

Don't think the story you have read is all in the air. The very moment the war is over building will start. True, there will be priorities, and control of materials and labour will perhaps not at once be relaxed. But the need to employ demobilized men would dictate a vast building drive even if accommodation for living and work were not urgently needed. At the same time the national plan will not be complete, chiefly because certain gaps cannot be filled in

before we know what the peace will be like. How can we bridge the necessary years of transition? Our answer is: We must use to full capacity existing temporary buildings such as the many excellent hostels, use them on the spot or shifted to localities more suited to their new purposes.

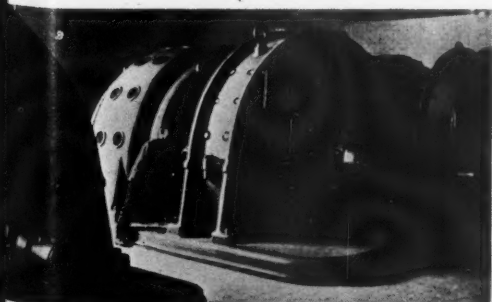
But new building, permanent and temporary, must also begin straightaway. It must be quick, inexpensive and well-designed.

A new technique

To achieve that, we have a technique utterly different from that of the past. Once



the bricklayer's tools were the only tools.



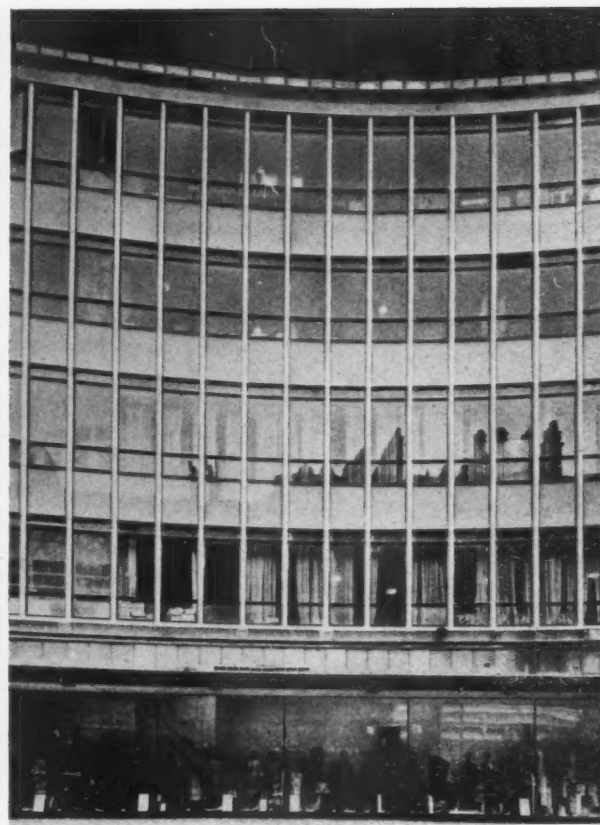
These are the new tools of our century.



Our new technique enables us to reduce building costs and increase speed by producing parts in factories and assembling them on the site. That brings us to things much discussed lately, and very often misunderstood: standardization and prefabrication. It is the nature of the machine to turn out goods of standard specifications. The more of one size and shape it turns out the cheaper is the product. Prefabrication means nothing but the replacement of the old building craft by the modern assembling process so successful where we want planes and cars. Let us see how it can be made equally successful in houses.

Standardization

Standardization in architecture is a very old story. The bricks of the Egyptians and of Ur are the oldest standardized building parts of which we know. But—so you hear the argument coming from those who oppose standardization in the modern house—the brick is a small unit. It influences appearance only in a very general way. It is the whole house, or terrace of houses all looking standardized that would be so fatal to the beauty of our cities. Now this argument is a fallacy. Georgian **Barnfield Crescent**,



Exeter, is really no less standardized than **Peter Jones's store** to-day (see the pictures above). The squares of Bloomsbury are just as uniform as any strictly modern estate. And looking to Bloomsbury or Bath from the chaos of Oxford Street or Piccadilly Circus, surely you will no longer mistake dignity, sobriety and good manners for regimentation and lifelessness. The standardizers are asking not for something new but for a return to the best English town-planning principles of the past.

Prefabrication

You need not be frightened of prefabrication either. It refers only to a technique, not in the least to the final result. Once you are satisfied with the dignity and orderliness which only standardization can achieve, why shouldn't the result you want be brought about more reliably and more speedily by prefabrication, that is by the manufacture of parts under the exacting factory tests of quality of materials and of performance? You may deplore the waning of the part that individual craftsmanship used to play in the past, but you are better served for the moment by the machine than by the handicraftsman. Later, as leisure spreads, there may well be a revival of craftsmanship.



Sweden is unquestionably a country of craft tradition. Yet when it comes to house building at low cost, this is the use to which they put their wealth of timber. **Swedish timber houses** are assembled on the site from parts machined and finished at the mills. Assembling these takes a few men only a week or so. Surely that is a tremendous advantage. Above it is **at an early stage**,

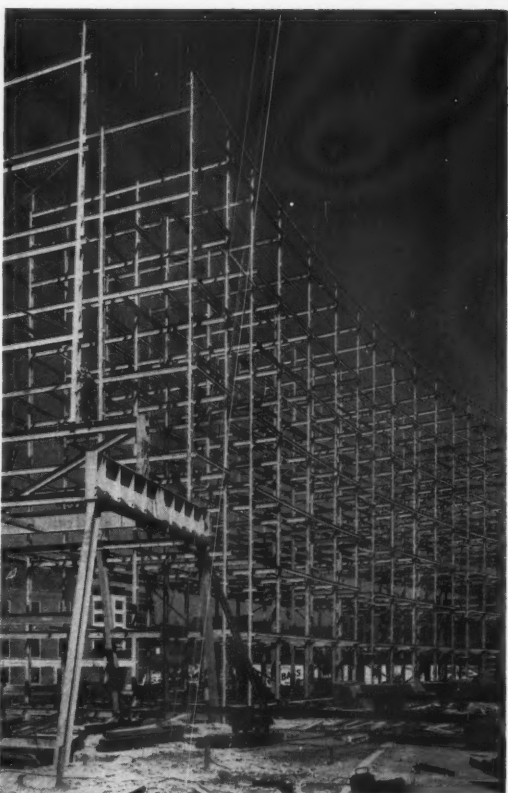


and now **they are putting in partition walls**. A few more days, and you will be able to move in. It will be dry, warm and comfortable.

The same saving in time and labour can be brought about by the use of one of the new plastic, compressed fibre, gypsum or concrete sheeting materials for walls. Such dry mounting certainly has a great future. And



here a few days later,

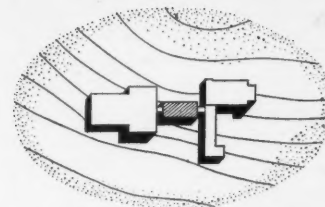


after all what else is **steel frame building** and this more complex configuration?

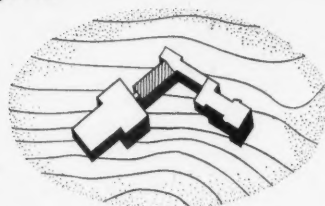
but the removal of at least part of the structural work from site to factory?

Just one more assurance to lead us on from the technical to the aesthetic aspects. People will make you believe that standardization and prefabrication will cause a dead and soulless uniformity. Nothing of the sort need happen, if they are intelligently used. Nobody wants to repeat the drabness of Tooting. Your standardization will only supply units building bricks of a higher order, as it were not complete compositions. The architect's job is to group these units as sites and individual requirements demand. That is what we did in Georgian terraces and crescents.

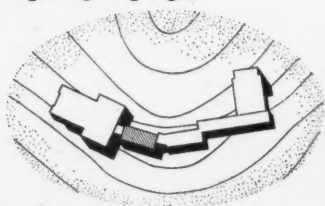
Here is a modern example: **hostels** built in different parts of the country of identical units:



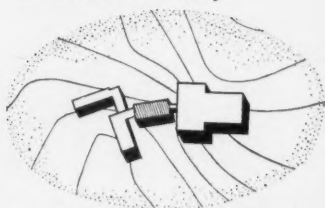
Where the site is on a gentle slope running fairly evenly, as the nearly parallel height lines indicate, an axial arrangement of the units is feasible. Kitchen and canteen as a solid block on the left, offices and cloaks in the (hatched) connecting link, assembly hall and L-shaped wing with lounge, reading and games rooms on the right. Can you visualize what **different effects of the units** you would get in



this L-shaped grouping,



and this stretched-out one,



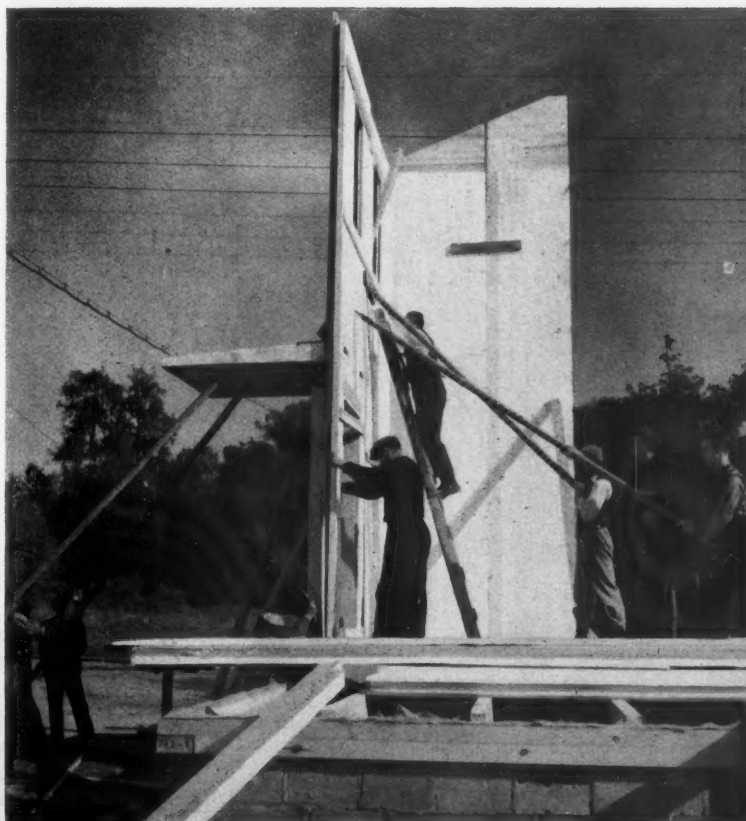
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PREFABRICATION

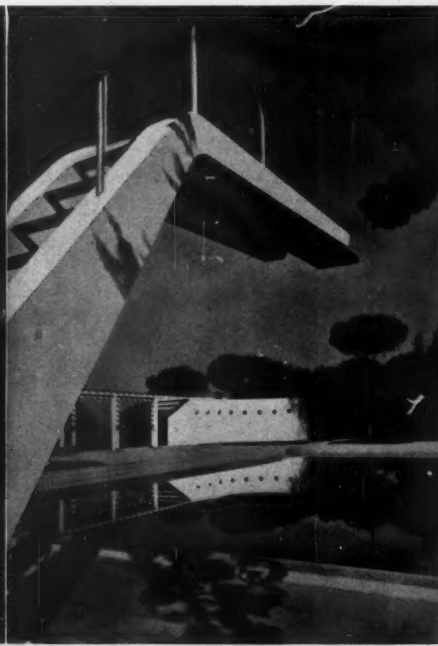
Post-war housing needs will be on a gigantic scale. Labour will, for a long time, be at a premium. The more rapidly and economically we can build sound houses, the better for the health and well-being of the nation. Complete prefabrication is exemplified by the caravan, a solidly built shelter, small but comfortable and often better equipped than a jerry-built house. The Americans have solved urgent war-time housing problems for workers by whole caravan villages, well placed in the country. An interior is shown on the left. The picture below, right, is also American: a demountable house built at the U.S. Navy Powder Factory at Indianhead, Maryland, Ohio. Below, left, is a typically Swedish sight. The Swedes can assemble a workshop-produced timber house in a week or two.





A NEW ÆSTHETIC

Steel, concrete and glass enable us to create forms inconceivable to architects of the past. See below three bold curves showing the same delicacy, tension and spatial vigour on a growing scale: the lamp, the diving-board, the bridge cables. The Swedish bandstand above (by Nils Eriksson) shows the new æsthetic conquering an old material: timber.



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New materials

Standardization and prefabrication affect the aesthetic result only in so far as they rule out the chance of individuality which in the middle-ages every village mason could achieve. But even if we left all building of the future to local masons, that is builders, we should not get anything like that mediæval eloquence because the art has been lost. If we want beauty we must achieve it in terms of our century, and that means with a full use of the machines and the materials at our disposal.

They have changed during the last eighty years to such an extent that only the private house is nowadays as a rule still built of the same materials as in 1800. But nearly all other buildings you will find constructed with a steel or concrete frame and wide expanses of glass. Steel dates from 1855. Iron had, during the fifty years before, already been used structurally, especially for roofs. The first building, other than a conservatory, in which it is used for complete walls was the Crystal Palace of 1851.

The use of iron and steel made engineering feats possible which the West had not seen since the days of the Gothic cathedrals. The thrill of the long, tense curve flung far across space is not confined to the flying buttresses of the middle-ages and the steel and glass vaults of to-day. You have it in the **Clifton Bridge**, which was started by Brunel in 1836.



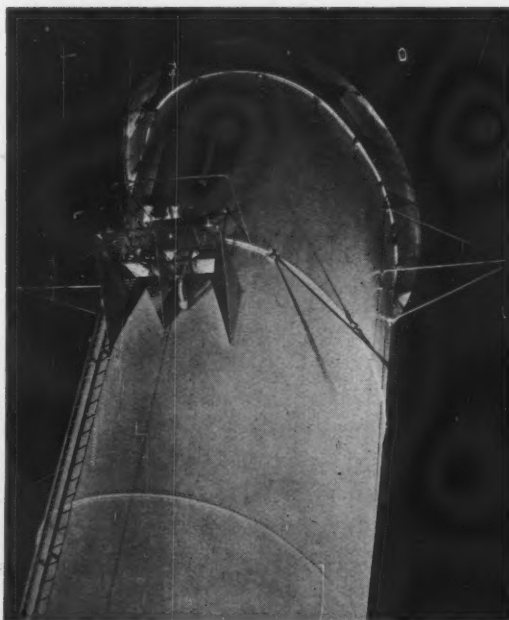
Reinforced concrete came later. It does not date back much beyond 1900. Later again, c. 1910-20, the most daring architects began to draw the necessary aesthetic conclusions from the use of the new materials.

If a building is supported by a frame there is no need any longer for heavy walls. They need not be more than membranes stretched out between the supporting stanchions or curtains hung from the beams. We want as much light in our climate as we can get. There is no reason now why walls should not be made completely of glass, wherever that seems appropriate. So a new aesthetic grew up of precisely proportioned, unadorned supports and smooth panels of glass in between. It is the aesthetic of a machine-age, of the plane and the liner, the turbine and the camera.

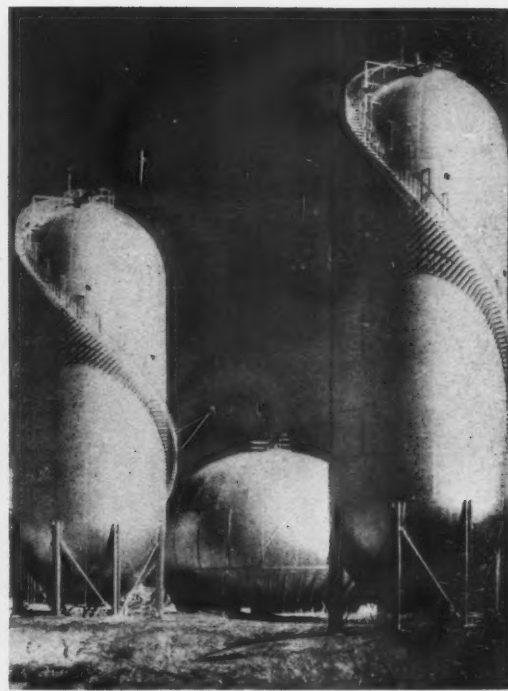


The new aesthetic

We need not lose many words over it. You know it, even if you are not always conscious of it. This **giant object** is the wheel of an aeroplane, but it is also a piece of

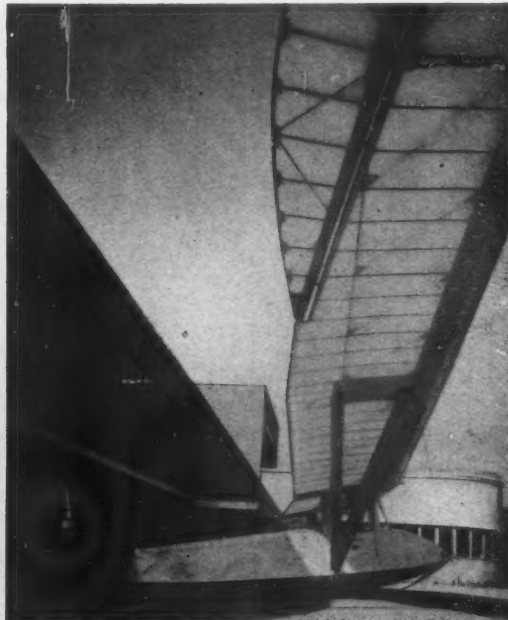


abstract art like Paul Nash's menhirs, of sculpture, reminiscent of both Moholy Nagy and Henry Moore. Again, how the **funnel of a liner** combines the qualities of machine precision with those of an entrancing abstract art, delicate and full of spatial eloquence. And what do these shimmering flasks mean with their exquisite spiral steel trimming?



They are **gas containers** in America, a monument as telling of the ambitions of our age as were the aqueducts of Rome.

But the engineering pride of the Romans was one of weighty mass, while our aim is a



minimum of matter. By calculation of stresses we can achieve the gossamer lightness of the wood, plastic and silk in the **wing of the glider**. Surely, with such engineering genius, with such new materials and such an adventurous sense of form, we need not be afraid that the task of shaping a new Britain might be beyond our strength.

REBUILDING BRITAIN?

It must be done

Two world wars in twenty years means something is wrong. If you don't see that, get ready for the next war about 1950. Otherwise it will be wise to think up new ways of waging peace. Rebuilding Britain is one way of putting our collective energies productively to work, but it is not the only way. Remember Sir William Beveridge's five giants. We are fighting for something a great deal bigger than freedom from Hitler—for freedom from Squalor, Idleness, Disease, Ignorance and Want, whose fantastic offspring Hitlerism is. And the machines are there to make victory a certainty provided we ourselves have the will.

It can be done



We have the men.



We have the materials.



We have the machines.

But have we got the courage, have we got the confidence, have we got the tenacity?

It all depends on you

In a country like ours where private property and private enterprise turn the wheels, causes have to be fought by private endeavour. This means doing oneself what one would like to leave to someone else to do who is in a better position to know, act, pull wires. In fact it means not yielding to the common temptation to evade one's own responsibility as a member of a community of free individuals. If you see no way of helping now, wait for your chance, and make up your mind in the meantime that giant Squalor's number is up. It is not a matter of money. Britain can be rebuilt at a cost next to nothing beside what we now have to spend knocking things down. And even if it cost the same, the price of losing the peace would be war, so we should still spend the money. If peace costs as much as war it will pay us handsomely to have it, for, contrary to general belief, our wealth lies not in the amount of money we think we save but in our power to produce. We are fighting for a new Britain, for the rehousing of our fellow countrymen in a humane way, for the rebuilding of cities bombed by our enemies and bedevilled by ourselves, for the relocation of industry, for the preservation of our heritage of ancient buildings, and for the rehabilitation of the countryside. We must fight to win. In the words once again of Sir William Beveridge, "It is no good setting out to fight unless you mean to win."

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A tribute to the greatest of modern town-planners

Here is the programme for the setting-up of a new town, called *Industrial City*; for it is to industrial conditions that the majority of new towns will in future owe their foundation. In my town everybody will be conscious of the fact that work is the rule of life, and that there is enough of ideal values in beauty and order to endow life with splendour. In giving my town a medium size, about 35,000 inhabitants, I intended to keep for my research a general validity which could not have been achieved by a study of a village or a very big city. For the same reason I have chosen a site with hilly as well as flat country and a river running through the latter. My town is entirely imaginative, though such places in the south-east of France as Rive-de-Gier, Saint-Etienne, Saint-Chamond, Chasse, Givors have conditions similar to those of my town.

There is a tributary to my river with a considerable fall. This is dammed and enables a hydro-electric plant to distribute power, light and heating to all the factories of the town. The chief factories lie in the plain, at the confluence of main river and tributary. A main line railway passes between factories and town, the town being placed on a level much higher up. Higher still are the hospitals, sheltered—as is the town, too—against north wind, and with south terraces. Each element, factories, town, hospitals, is isolated in such a way as to make enlargements possible.

So as to have the most satisfactory arrangements for the material and moral well-being of the individual, I have laid down rules concerning road use, hygiene, etc., and also assumed certain measures of social progress have already been adopted. I assume, for instance, that the use of land is under public control, and that water, food and medical supplies, as well as utilization of refuse, are also public concerns.

For housing, my rules are that all bedrooms must have at least one south window, that enclosed yards serving as the only source of light and air to rooms are prohibited, and that partition walls and floors have smooth surfaces and rounded corners.

All building land is divided into lots of 30 (north-south) by 150 (east-west) metres. At least half of each lot must remain free from building. It is assigned to public gardens with rights of way for pedestrians. The town can thus be crossed in every direction, independent of the streets. The minimum space between north-south buildings is the height of the buildings on the south side.

The main street runs from the station westward. The north-south streets are 20 metres wide, with trees on both sides; those from east to west have a width of either 13 metres with trees only on the south side, or of 19 metres with trees on both sides.

In the centre of the town a vast space is given to public buildings. These fall into the following groups: *Administration* (municipal council, municipal offices, laboratories, public records), *social gatherings* (an open-air assembly centre for 3,000 to be used for meetings and for listening to gramophone records of parliamentary meetings and music, an amphitheatre for 1,000, two amphitheatres for 500 each, and many smaller rooms for commercial meetings, etc.), *public collections* (including library and exhibition building), *public performances* (a well-equipped theatre for 1,900 and several small open-air theatres) and *sports* (gymnasia, public baths, running and cycling tracks, tennis courts, football fields, etc.).

The schools are placed in selected positions in the various quarters of the town. They are co-educational to the age of fourteen, and built with parkways between the classrooms of the younger and the older children. There are covered as well as open play yards. Each school has a hall supplied with projection apparatus. The masters' houses are nearby. Secondary schools for all young people between fourteen and twenty are in the extreme north-east. Training here is adapted to the needs of an industrial town. A small number of students works for administrative and commercial jobs, some others train as artists, while the majority are prepared for industrial work. The hospitals (including helio-therapeutic establishments and convalescent homes) have 715 beds.

The railway station has its booking hall, etc., on ground level; platforms, tracks and waiting rooms are below ground; the tall clock tower is visible from everywhere in town. Round the station are hotels, stores, etc., that is all the tall buildings of the town. Open-air markets are held in the station square.

The materials used throughout the town are concrete for foundations and walls and reinforced concrete for floors, ceilings, etc. All the major buildings are in reinforced concrete. Concrete is a cast material. The simpler the moulds, the easier and cheaper must construction be. This simplicity of means leads logically to a great simplicity of expression. It should, however, be realized that, if my buildings are simple, unadorned, without mouldings, and bare everywhere, I can introduce works of decorative art in all its other forms, and that a work of art will express itself all the more clearly and purely the more independent it is of construction. Besides, who would not see that the use of concrete makes it easier than ever before to introduce long horizontals and high verticals in order to give to buildings that calm and balance which is in harmony with the lines of nature.

TONY GARNIER (*Une Cité Industrielle*, 1901-4, published in 1917)

This month's Anthology

Tony Garnier's *Cité Industrielle* is discussed and placed into its proper historical position on page 90. Part of the introduction, never before translated into English, is presented in our Anthology in an abridged form. The arrangement of the text had to be altered here and there, but the original wording has everywhere been kept. Garnier worked on this prophetic scheme while a student of the French Academy in Rome. The work was done only three years after Ebenezer Howard's garden-city scheme of 1898. But it is truly of the twentieth as against the nineteenth century. Howard's was the ideal of a social reformer, dictated by a dislike of industrial conditions; Garnier accepts them wholeheartedly. His plan is eminently practical, and at the same time of such intimate regard for the peculiarities and potentialities of a special site that the result has a reality never attempted by Howard. Nor can one say in fairness that Le Corbusier's city projects possess the human qualities of Garnier's. Moreover, Garnier's is in the original a masterly drawing, of an intense vitality rarely achieved in maps. And if we study the appearance of his buildings in the lavish plates of his tome, they are just as amazingly ahead of their date as the plan. A few can be seen in the illustrations to S. Giedion's *Space, Time and Architecture*, and N. Pevsner's *Pioneers of the Modern Movement*.

Common Wealth

Sir Richard Acland, M.P., has presented to the National Trust his Killerton and Holnicote estates in Somerset and Devon, an area of over 17,000 acres. This is the largest single acquisition in the history of the National Trust. The Holnicote estate includes Selworthy, Allerford, Bossington and Luccombe, with Holnicote House, now being repaired by the Ministry of Health as a nursery home. The Killerton estate lies around Broadclyst, six miles north-east of Exeter.

The vital importance of national parks has been emphasized more than once in this number. As long as the Uthwatt and Scott Reports have not been accepted, acted upon, and even enlarged in their scope, it will be difficult for the Government to develop parks of the necessary size, unless public-spirited and generous citizens come to the nation's aid. Sir Richard Acland's is an admirable gesture. He can be certain of the gratitude of all those anxious for the development of our common wealth of beauty and social well-being.

Training for post-war building

The Central Council for Works and Buildings report on training for the building industry came out almost the same day as a Ministry of Works and Ministry of Labour White Paper on the same topic, a new and promising procedure, in strong contrast to the procrastination which the Government is showing over the Scott and Uthwatt reports. The contents of report and White Paper are equally

gratifying. Here apparently is an attempt at a long-range reconstruction programme beyond anything so far attempted anywhere. Sir Ernest Simon, chairman of the Central Council's Education Committee, aims at 300,000 houses annually from the second or third year after the war onwards. That will, as the White Paper points out, require a labour force of about one and a quarter million. Stability of employment will be possible right through the reconstruction period, which may cover twenty or even thirty years, and must be guaranteed to the worker. Otherwise there will not be enough entries into the industry. The example of the muddle and insecurity after the last war has made workers shy of the building trades. To achieve guaranteed employment and wages, the White Paper recommends to the industry the setting up of a negotiating machinery. "The Government," the White Paper adds, "would consider favourably the continuance at least during the immediate post-war period of the present statutory provisions controlling registered building and civil engineering contracting undertakings, which require all such undertakings to observe the terms and conditions of employments agreed in the industry." The report is more outspoken on this point. It says in §15: "The success of the guarantee is

dependent upon its compulsory application by law to the whole industry."

To secure a large enough labour force large-scale training will also be necessary. The industry will, at the end of the war, be 275,000 men short; 70,000 must therefore be trained per year, and 5,000 instructors must be available directly peace comes. The Government is prepared to make itself responsible for supplying the training. It recommends at the same time the adoption of an apprenticeship system within the trade. Regional advisory committees are suggested to select applicants for training.

The pictures of this issue

As in some cases buildings are illustrated in this issue without precise indications as to where they are, and who designed them, the following is a brief supplementary list.

- p. 87 house and garden: Neubühl, Zurich, by Haeffeli, Hubacher & Steiger, and Moser & Roll, and Artaria & Schmidt.
- modern factory: Luma Factory, Hammarby Canal, Stockholm, by the Swedish Co-operative Society's Architectural Office.
- hospital exterior: Sully Tuberculosis Hospital, Cardiff, by W. A. Pite, Son & Fairweather.
- hospital terrace: District Hospital, Berne, by Salvisberg & Brechbühl.

school exteriors and interiors: Richmond, Yorks, by D. Clarke Hall.

- p. 88 weatherboarded cottages: Capel, Surrey.
- p. 91 club interior: Scampo Life Insurance, Turku, Finland, by E. Bryggman.
- nursery school: Dulwich, by Samuel & Harding.
- flats and play pool: Gärdet, Stockholm, by Frölen.
- Co-op. shop: Borlänge, Sweden, by the Co-operative Society's Architectural Office.
- class room: Ansonia High School, Connecticut, by W. Lescaze.
- community hall: Eriksdal School, Stockholm, by A. Zundahl.
- restaurant terrace: Unity Camp, Forest Park, Pennsylvania, by W. Lescaze.
- p. 92 church: North Harrow, by W. A. Kenyon.
- hospital: Waukegan, Illinois, by Ganster & Pereira.
- school laboratories: Marlborough, by W. G. Newton.
- station: Loughton, Essex, by Murray Easton.
- library: Viipuri, Finland, by A. Aalto.
- exhibition building: Swiss Pavilion, Brussels Exhibition 1935, by H. Hofmann.
- p. 94 flour mill: Kvarnholmen, Sweden, by the Co-operative Society's Architectural Office.
- p. 95 light industry: Boots's, Northampton, by Sir Owen Williams.
- p. 96 multi-story factory: van NELLE's, Rotterdam, by Brinkman & van der Vluht.

MARGINALIA

pit-head baths at Manvers Main Colliery, South Yorkshire, by C. G. Kemp.

- p. 97 warehouses: Cement & Concrete Association, by Frank Bennett.
- Peter Jones's: Slater & Moberly, with Crabtree & Singer, and Professor Reilly.
- p. 98 alpine farm: by W. Fischer.
- land labourers' housing: Co-operative Farm, Chandler, Arizona, by V. De Mars & B. Cairns for the Farm Security Administration of the U.S. Department of Agriculture.
- p. 99 Impington Village College: by W. Gropius & M. Fry.
- p. 100 open-air restaurant: Morava Holiday Home, near Teplice, by B. Fuchs.
- seaside pavilion: Folkestone, by D. Pleydell-Bouverie.
- p. 102 bus shelter: Sweden.
- hangar: Cologne.
- p. 102 and 108 hostels: W. G. Holford and associates.
- p. 110 interior: Swedish, by Reinius & Backström.
- diving-board: Ugolini Golf Club, by G. Bosio.
- suspension bridge: Bronx-Whitestone, U.S.A., by O. H. Ammann (engineer), Allston Dana (engineer of design), Aymar Embury (architect).

Acknowledgments

The following photographs are published by special permission of the *British Council*: p. 87, Cutting Corn; p. 88, Nash's Regent's Park houses; p. 95, Coal Mine; p. 98, Sheeprun, afforestation, market gar-

[continued on page xlii]

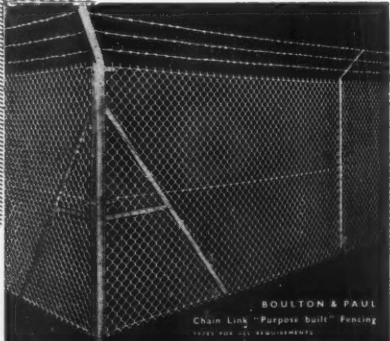
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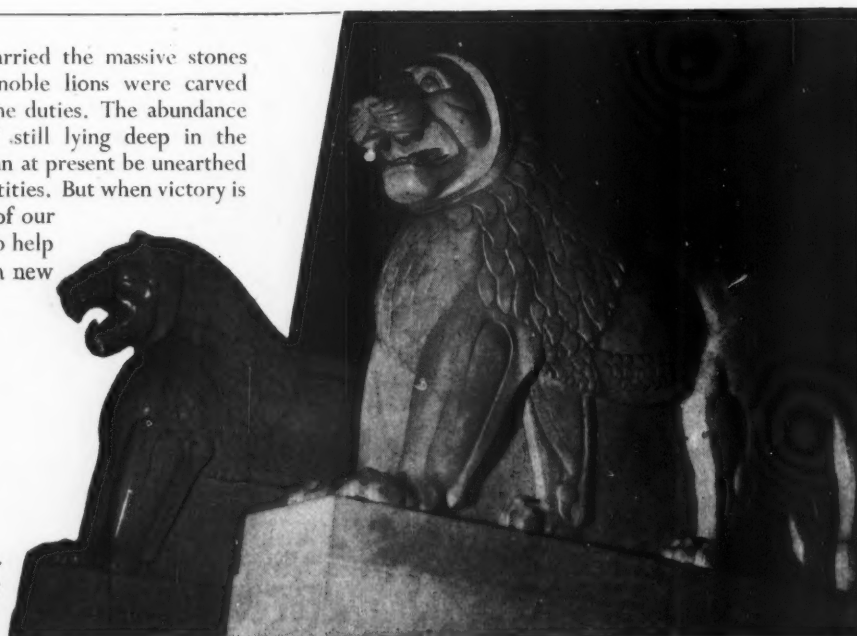
dening; p. 111, Pylons. The portion of the map of New Winchelsea on p. 89 is reproduced with the sanction of the Controller of H.M. Stationery Office. All the photographs of Zlín are published by the courtesy of the Czechoslovak Government, those of Swedish prefabrication by the courtesy of the Swedish Government, that of the warehouses on p. 97 by the courtesy of the Cement and Concrete Association. The maps of Britain on p. 103 are taken from Ground Plan of Britain, by permission of *The Association for Planning and Regional Reconstruction*. Acknowledgments are also due to *The Architectural Record* and *The Architectural Forum* for the illustrations of the single storey factories on p. 95, the aerodrome on p. 102, the suspension bridge on p. 110, and the gas containers on p. 111, to *Aero Pictorial Ltd.* for the picture of Milton Abbas, p. 87, to *Peter Ray* for that of the piggery, p. 99, to *C. P. Abraham Ltd.* for that of Wastwater on p. 99, to *Blaw-Knox Ltd.* for the Insley Excavator on p. 112, to *K.L.M.* for that of the propellers on p. 111, to *Short Bros. Ltd.* for that of the aeroplane wheel on p. 111, and to *John Booth & Sons, Ltd.*, for that of the steel skeleton on p. 108, the photograph of which is by *Chas. R. H. Pickard & Son, Ltd., Leeds*. The illustrations of Professor Cordingley's coal cleaning plant were done by the *Birtley Co., Birtley*, and photographed by *Philipson & Son*.

The following Associations have sponsored the Rebuilding Britain Exhibition:

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| <i>The English Joinery Manufacturers' Association. Wood Development Ltd.</i> | <i>The Building Industries National Council.</i> |
| <i>The Ballast Sand and Allied Trades Association.</i> | <i>The Institute of Builders.</i> |
| <i>The Gypsum Building Products Association.</i> | <i>The London Master Builders' Association.</i> |
| <i>The Association of British Roofing Felt Manufacturers.</i> | <i>The National Federation of Building Trades Employers.</i> |
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