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Summaries in English

Summaries and translation by Dr. J. Hull

Town-planning and architecture on the verge of an agonizing reappraisal

The effects of the energy crisis (See page 415)

This winter a profound revolution has affected all the advanced industrial nations, those with a free-market system as well as those with centrally planned economies. In unseen ways the countries that based their prosperity on constant expansion and ever increased consumption have been struck at the roots of their vitality by the energy crisis.

This crisis was launched by a politico-military reaction and appeared to be simply a kind of extortion applied to the richest countries (Europe and the USA, as well as Japan), but it soon assumed an aspect that was less episodic than was at first believed. Indeed, oil, used at first as a weapon, has become essentially what it has always been: a vital raw material for countries with highly developed and rapidly expanding economies. And this raw material, which represents great power in the hands of those who have it – the countries around the Persian Gulf and on the Arabian Peninsula above all –, has stopped being sold by its possessors at a non-competitive price. In short, the era of cheap energy has come definitely to an end.

Even if such a revolution is only the outcome of a gradually prepared calculation on the part of those in high finance and by the petroleum magnates, who in the meantime have become simply energy magnates (it is now a known fact that the big oil companies control the supplies of coal and uranium and that it is their concern that energy prices keep on rising, whatever the specific form of energy...), we are, in any case, confronted by a reexamination of priorities.

The halt to waste in the cities

Now then, looked at from this angle, our entire daily existence has been turned upside down: our comfort, our living arrangements, our means of locomotion, our well-being, in short: the quality of the life of man in the rich countries is going to feel the effect of this crisis. On this point, there is one sector which cannot possibly escape the redealing of the cards now under way: town-planning and architecture.

Town-planning, because, with costly petrol, the motorcar will cease to dominate utterly the working and leisure time of the majority of the population. And because the building of motorways will no longer be the exclusive criterion for the disposition of regions and cities, any more than car parks will go on constituting the essential focus of urban equipment.

Architecture too is going to have to change, because, with costly heating oil, the time of power waste owing to overheating and calory loss is now past. Sheer facts militate against the system of individual heating and airconditioning. We have to realize that it is absurd to construct the same buildings in Brasilia and in Novosibirsk, in Chandigarh and in Vancouver, in Sweden and in Rome. The thermal loss from the "glass cages", the obligation to refrigerate premises, in midsummer, in countries of tem-

perate climate like ours, represent grave errors, which are now going to be paid for at their just price.

It will be necessary to invent collective systems of heating, just as we are beginning to consider collective means of transportation. From now on, it will no longer be legitimate to furnish every house with its "thermal plant", nor will any citizen be allowed to pollute and congest the public roadways in the cities.

Central heating plants have been experimented with, successfully, for a number of decades. Now it is becoming logically imperative that such plants be realized as soon as possible and on a large scale.

All our options have to be reassessed: nuclear power plants, which are going to be built despite the opposition of justly alarmed local populations, have been limited to the provision of electricity. Who says that in the future the essential function of nuclear power will not be to produce thermal energy? And if the priority of electricity is maintained, owing to its flexibility and the multiplicity of its applications, then it will be necessary to think again about architectural designs and techniques: to meet the requirements of electric heating, we will be more concerned with thermal insulation than with glazed partitions – whether they are double or triple!

A new architecture

However, we must not forget that other fields of architecture are going to be affected by the increasing rarity or the increasing costliness of petroleum products: thus, all the synthetic materials now employed in building, to provide insulation, etc., are going to become considerably more expensive. These petroleum derivatives, too, have often been the raw material of prefab elements. And the many different designs for residential cell-units in plastic or polyester foam, which have been tested on the Japanese, German or French markets, are now doomed before ever having achieved a foothold...

Likewise, in the field of technical equipment – plastic pipes, translucent domes, etc. – we shall see, for a time at least, the classical materials like steel, wood and glass, regain the upper hand. Until the time when a boom in these materials again restores the competitive balance on the market...

We have believed in the panacea of "radiant cities" isolated in the green countryside onto which open immense glazed walls bestowing on the residents serenity, sunshine, verdure. We had been hoping for a rationalization of construction methods with the appearance of synthetic materials. We had known the debauch of an individualism born of a system of extreme free enterprise which insisted that every building have its own heating plant. We have lived in an era of abundance and waste. But now this time has come to an end.

Only those architects who will manage to imagine the future with lucidity and will be converted to measures adapted to the new conditions will be in a position to take part in the elaboration of the city of the future. This is the true task of builders whose efforts are oriented to quality, including the "quality of life" of the "new poor", which is what the advanced industrial nations risk becoming in the concert of the nations at the close of the 20th century.

Henri Stierlin

Profiting by the "crisis"

(See page 419)

The "CRISIS", whether authentic or not, sought or suffered, which has shaken the Western capitalist world during the last few months – and I am referring mainly to the oil crisis – has at last disclosed a number of "follies" committed over the decades in the name of "purist" and functionalist theories of town-planning and architecture. The struggle conducted by a certain number of professionals – whose arguments had the drawback of being merely intuitive and sensible – has all at once become the prerogative of everybody... so much the better! But let us hope that this first shock may serve at least as a lesson to those who, with their diplomas, their experience, their awards and the advantages of their privileged positions, have indifferently covered the landscape of the Western world with a dismal constructed environment!

The highway network in western Europe amounts to sheer madness, like the way in which all the capitalist economies – like real panders – have possessed themselves of the motorcar! The new means of transport have been sabotaged, both individual and public, and I shall take as my point of reference merely the last Swiss National Expo in Lausanne... what have they done with those extraordinary machines, too intelligent, too present, too disturbing to be admitted by a society conditioned by a shroud of 6 square meters!

The specialization of the automobile industries is another catastrophic "discovery" made by the free enterprise economists!

The refusal of the automobile industry to diversify and to orient itself to buildings is one of the mistakes that are now most heavily laden with grave consequences. For fifty years certain architects have never succeeded in making credible the notion of industrialization in building based on techniques in the automobile industry! Even today economic recession is preferred to an immediate attempt to diversify. Cities – all cities – have been subjected to the dictatorship of the motorcar, by deliberate policy and by stupidity, ignorance and because it is the easiest thing to do! There does not exist in the west and elsewhere a single capital city, a single big city, a single medium-sized town, or even a single village which has not "dedicated" its urban tissue and all its functions to the car! This type of "destruction" – with consequences at all levels – has not yet found its cure; we can only hope that thanks to the crisis now upon us a new awareness will arise and effective measures will be taken.

A glimmer of hope: "some" plans of "some" new cities within the scope of which the car is no longer deified!

In the more specific field of architecture, the energy crisis is making us have second thoughts about the curtain-wall – employed under pressure from the glass manufacturers and the photographers of architectural reviews no matter where and no matter how – and about airconditioning.

Urban tissues ought not to be stretched any further, should not further expand; on the contrary, they ought to become more dense, they ought to draw tightly together; they should never again be "zoned", divided up into sectors, chopped up into lots, functionalized; on the contrary, they ought to be combined and made polyvalent, mingled and interpenetrated.

This painful period we are living through, in which we are fundamentally involved, ought to induce us to reflect and to act, seriously and in a decisive manner, on our constructed environment, for which we town-planners and architects are still responsible, socially, politically and formally, to society, whatever its structure!

I. Schein

The repercussions of the energy crises on building

An engineer's point of view (see page 423)

What measures are desirable?

It is unanimously admitted that measures against waste ought to be taken. The most frequently voiced proposal in this sector concerns the thermal insulation of buildings; we shall discuss this point later on. Nevertheless, we must be aware of the relative utility of some of these measures which are often more psychological than substantial in nature.

The problem has to be focused on the campaign against environmental pollution, especially air pollution. Individual heating plants cannot in fact be further developed in the form in which they exist at present. Heating plants for large buildings ought therefore to be centralized, and the central plant could very well be nuclear-powered.

The problems were all well known before the recent crisis came to a head, this crisis having only made the problems more credible.

Definition of spheres of competence

It is becoming increasingly obvious that national prerogatives are having to give way to international exigencies. It is nonetheless true that the governments of the different countries ought to intervene individually in all sectors that fall within the limits of their jurisdiction.

In Switzerland, for example, the Federal Council has decreed a speed limit on cars, the prohibition of driving on certain Sundays, and has ordered a study with a view to a global conception of the heating problem.

It follows that the Cantonal Governments ought to act in the spheres where they are competent.

Thermal insulation of buildings

This problem has to be tackled within the more general context of power supplies for buildings. The central committee of the SIA has been called upon to establish a new norm in this sense. It is to be expected that it will receive the aid of the Federal Government in order that this project can be undertaken without delay. In the meantime, the general awareness of these problems is sufficient for the implementation of considerable changes in our conceptions of buildings.

It will no longer be possible, for example, to envisage all-glass architecture, calling in extreme cases for heating in winter and airconditioning in summer. The entire profession is being confronted with a challenge. Architects ought to react positively and accept as necessary measures that they might regard as constrictive. State intervention would be especially facilitated in "public" building projects, where a global insulation coefficient can be imposed without any trouble.

It is profitable to recall that we have to do here, especially under the present circumstances, with high-yield investments, and this results in improved acoustic insulation.

Consequences for town-planning

All these questions reduce to a monumental problem of "ducts". The entire basement level of our cities ought to be overhauled in the next 25 years. It is a question of introducing remote-heating ducts, of reinforcing the electric cables and the gas network and of building a separate sewerage system.

Conclusion

Recent events have crystallized a situation all the elements of which were known. It is certain that their consequences on architecture and town-planning will be decisive.

Olivier Barde

A heat engineer confronts the problems

- of the curtain-wall
- of airconditioning
- of heating
- of the power supply

(see page 425)

Pollution and the energy crisis are topics of the day. Added to supply trouble is the constant increase in the price of fuel oil, which, within a few months, has gone up from 150 to 600 Fr./ton.

Those concerned are turning their attention to the different power users and other polluters, and, of course, heating installations are under fire.

Now then, for a long time, building experts have been interested in these problems, which are not new to them. For many years, attempts have been made to develop in this country, and with a certain degree of success, the idea of urban remote-heating.

The increase in the cost of power is going to influence, directly, operating costs and to entail, indirectly, a rise in building costs.

This new aspect of the problem gives rise to additional arguments, and probably decisive ones, for those who reproach architects with building too light. The curtain-wall and glazing are thus attacked. In fact, the architect has been able to build very thin-walled buildings and very generously glazed ones, the technical installations (heating in winter and airconditioning in summer) being there to provide the necessary corrections.

Such light and such highly glazed constructions entail considerable heating plants; moreover, to guarantee satisfactory conditions in premises occupied by people, it is necessary to introduce ever higher air temperatures (e.g., to have 23° C for the air in order to get a resultant temperature of 20° C). Now then, the warmer the air is, the drier it becomes, and this calls for costly humidification: costly per se, costly owing to the additional power it requires, costly, finally, because of its consequences, at times difficult to foresee, on the building itself (condensation in the walls, etc.).

As for heating of houses, we can be sure that practically all the arguments concur in condemning light-weight constructions. As for the complex problem of the cost of power and of pollution, a preliminary answer ought to be provided by the architect himself: building more heavy, insulating more, sealing carefully, reducing glazed surfaces; the spread of remote-heating systems can constitute a second answer.

Simplifying the problem considerably, one would be tempted to say that man in the 20th century, strong in his technology and in the power at his disposal, has developed a type of housing that despises local climatic conditions.

There has been created a type of building that is almost universal, the same structure being found at the North Pole and at the South Pole and at all the points in between with all their different climates, the necessary compensations, their importance depending on geographical location, being afforded by sophisticated technology having resort to «unlimited» power in all its forms. On this point, an able architect might present a series of typical images, each demonstrating, for a certain number of points on the globe:

- the type of building developed there over the ages by the wisdom of local builders, who took account of the climatic conditions and of the available materials,
 - and parallel to this, the universal monotype building which has emerged practically everywhere in the world over the last twenty years.
- The time we are living through now will perhaps

be favourable to some thinking which will permit builders to return partially to the wisdom of our ancestors, without for all that abandoning the essential gains of our technological civilization.

Airconditioning: a useless luxury?

As for the airconditioning of rooms or buildings, some people claim that the continental climate of Switzerland does not in any way justify the resort to airconditioning and that such installations, costly at investment and costly to operate, constitute a luxury which the "energy crisis" should induce us simply to do without. But this is a simplistic line of reasoning, whose essential merit is that it obliges the champions of airconditioning to justify themselves and to call in question what they have to offer.

First of all, it is necessary to point out that the airconditioning of premises is not a direct consequence of insulation; in fact, ever since surrounding conditions (street noise, airplanes, atmospheric dust, etc.) have obliged us to live with the windows closed, airconditioning has become a necessity. It ought, therefore, to provide, on the inside, conditions suitable for all activities; this means that fresh air has to be cooled and heated stale air has to be evacuated.

As for heating, there is one solution: radiation

It is necessary to design buildings in such a way as to reduce heat loss, which means increased insulation of walls and roofs as well as reduction of window surfaces, and an increase in the heat inertia of the building.

Moreover, it is becoming increasingly mistaken to furnish every building with its own heating plant (air pollution from "private" chimneys and storage of a large number of small quantities of fuel oil). Therefore, it is imperative to promote remote-heating plants, with large well-maintained installations manned by qualified personnel. This also leads to the problem of distribution conduits, and this could open the way to a reconsideration of the general problem of ducts and mains in cities (water, gas, electricity, telephone) in favour of open accessible service tunnels.

It is also necessary to reconsider the method of heating. There is no doubt that, for the majority of cases, the most adequate method of heating premises occupied by people is radiation heating, where maximum surfaces (walls and ceiling) are kept at a moderate temperature (e.g., 25° C) and where the air temperature is kept even lower (from 16° to 18° C) which results in a temperature of from 20° to 21° C. Now then, it is electricity that permits true radiant heating by the use of heating panels. This raises a certain number of problems, especially that of the production and distribution of electric power, in the event this system becomes generally applied.

It follows that we have to reckon with a considerable increase in the production of electric power, in a fairly near future (let us say, about fifteen years), and this entails nuclear power plants and the generation of electricity by means of other kinds of power that are not yet operational at the present time.

Samuel Rieben

Harlequin: More than one experiment!

After Grigny and the many criticisms it gave rise to, here is another French experiment, a totally different one: "Harlequin". Harlequin is a district in the new town of Grenoble Echirolles. The latter was created in several stages to meet demographic, eco-

Continued on page 492

nomic and industrial needs in Grenoble and its region.

There were three big overlapping phases covering a period of nearly 10 years:

1. The Olympic Village, low-cost housing, plus the west housing complex.
2. A group of 3500 housing units, of which 2500 are low-cost units, situated on the north: Harlequin.
3. A group of 7500 units, with an industrial zone offering 4500 jobs.

The aims

The basic idea and the unique feature of this complex is to have taken account of the "deracinated" character of the future residents, that is to say: migrant workers, former rural dwellers, immigrants of all nationalities. It was therefore necessary to confront the problem of lack of social life engendered often by the working conditions of most people in these segments of the population (physical fatigue, time devoted to travelling to and from work, long hours on the job, etc...).

With the assistance of the architects Loiseau and Tribel and the landscape architects Corajoud and Ciriani, a special effort was made to integrate installations as closely as possible in daily life. The first measure was the creation of a pedestrian street, at ground-floor level, in direct connection with the public amenities.

The latter were planned in the open with polyvalent use, adapted to children, teenagers or adults. There was also provided an educational-cultural team system with teaching, cultural events and everyday problems being integrated.

Two important elements, first of all, modify the area:

- The vaulting.
- The use of colour and publicity - which catalyse and animate the complex with great success and also, at times, with a certain awkwardness. Then there are mixed up all sorts of functions, vertical

or horizontal connections, which make of this street a veritable architectural bric-à-bac, which is extremely appealing.

- Vertical connections: lifts and access stairs come down to street level. But the entrance hall and letter-boxes are located in a glass cage inserted in the structure at the upper floor level, a true area of transition between street and flat.

Realization

The street

This is certainly the essential element of the complex. Because this street is alive. The architects have created two street levels, with one underneath the buildings. In this reserved area many needs, functions and also space-determining aims are densely clustered.

The elevated footbridges

The street is also varied by the elevated footbridges giving access to other areas.

The horizontal connections

The immediate proximity of the installations considerably enhances the quality of the street, giving rise to a succession of areas, closed, open, semi-closed, transparent, opaque, etc.

Impression and reality

This street is truly alive; the building plan in setting up differentiated poles, implies continuous traffic. Some children play in the street, others roller-skate or simply sit on red-checked benches. Life becomes more intense near schools or in the shopping street. Here the shops have simply been slipped into the structure - and one has the impression that this street may change in the future. Other shops will fill in the structure.

Finally, we must stress the very important role played by colour here, which accentuates the general impression.

The outdoor spaces

Two considerations have influenced the organization of the grounds: the notion of the urban park and the notion of countryside. It was necessary, in fact, to create a reserve of parkland that 15000 residents would be induced too frequent. Therefore it was necessary to satisfy all the needs of a varied population: play areas for infants, a lake, a market, a central square, open-air theatre, promenade for the aged, etc.

However, it was also necessary to create a landscape on a flat site. Thus eight mounds were created for the sake of variety and to provide look-out points.

At the foot of the buildings, there are masses of trees that soften the effect of the buildings. On the diagonal, the promenade follows the movement suggested by the mounds, and the result is a new relief. Within this context the various installations required for life in the open air can be set up.

Conclusion

In conclusion, we can say that the Harlequin district represents a high level of urban development, based on a reasonable functionalism, with due regard for future residents; but from the architectural standpoint it is open to criticism. *P.L. Faloci*

Current architectural events in Spain

(See page 457)

In this article, our correspondent in Spain, the architect César Ortiz-Echagüe of Madrid, presents the most important architectural developments in Spain. The reader will find here a series of photos that will give him an idea of the various trends in contemporary Spanish architecture.

Oswald zeigt:

den Korpus zum Arbeitstisch
den Korpus mit Vollauszügen
den Korpus für die Registratur
den Korpus für die kleine Kasse
den Korpus der abschliessbar ist
den Stahlkorpus

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