

drugs and medicines will be provided. Doctors may still engage in private practice subject to their contractual obligations under the plan, or they may remain independent.

Other features of the new Service are a full dental and ophthalmic service and a home nursing service. The School Medical Service will be linked up with the maternity and child welfare clinics in a manner to be decided under the new Education Bill. The cost of the health plan would be met out of taxation, rates and the new social insurance contribution which is yet to be developed. The estimated cost is 148 million pounds per annum.

### **Liberty of the Individual.**

Such are the outlines of these far-reaching proposals based on the principle of liberty of individual choice. There is neither compulsion for patient nor doctor. The people are free to make use of or not to use these facilities. The doctor is still free to pursue his profession in his own individual way.

The scheme is now open to discussion. It will probably receive much criticism and may be modified in certain of its details. Granting all this, it emerges as a great conception, broad in view and full of wisdom and vision. Rightly used, it may become the Great Charter of Health in Britain. More remarkable still, it has been planned in the fifth year of a war in which the national existence is at stake.

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## **Prefabricated Houses**

By A. C. SHIRE

**S**OON after the nine days wonder of Technocracy had died down, feature writers of the press started touting the prefabricated house. According to them, the geniuses of modern industry, utilizing the wonders of modern science, were incorporating hitherto unrealizable comforts and conveniences into houses which, ordered by telephone, would be delivered to you the next day, wrapped in "Cellophane," complete and ready to live in, including a five-foot shelf of books in the bathroom. These wonder houses would cost practically nothing and, like an automobile, could be traded in after a couple of years for a new model which would not leak quite so badly, and which would probably include a baby incubator or an automatic toothbrush.

In spite of the failure of the prefabricated house to live up to such exaggerated claims, the shouting about it has not died down. A more realistic and probably more desirable prefabricated

house is gradually evolving, although its development was undoubtedly retarded by repeated attempts to produce a super-extra-ultra streamlined miracle.

### **Experimental Stages**

The prefabricated house of to-day is not necessarily different, as a finished house, from any other. The term "prefabricated" describes the way it is made, not the resultant product. In exterior appearance, it may resemble any of the popular styles, such as the local builder's adaptation of a Cape Cod cottage, or one of the Hollywood Spanish varieties. It may be covered with clapboard or shingles, or have as an exterior material, one of the modern plywood or asbestos cement boards. Its roof may be flat or sloped, and covered with any of the lighter usual roofing materials. Interiors do not differ from other houses that are being built to-day except that plaster is not used as an interior finish. Kitchen equipment and the methods of heating are the same as those available to anyone.

It is true that prefabricated houses are being erected faster and with less field labor than similar houses built by conventional building methods. Demonstrations have shown that such houses can be erected, finished, furnished and occupied in a week. On finished foundations, this has even been done in two working days. However, such records are rarely equalled in general practice. In fairness to the prefabricated house, it must be remembered that the work of preparing the site, building the foundations, and cellar, if there is one, and bringing in the utilities, are the same, whether the house itself be prefabricated or built on the site by the usual carpentering methods.

Astounding reductions in cost have not yet materialized, although there is hope that improvements of techniques of mass production applied to housing and the easing up of unreasonable building code restrictions and building labor practices will bring about a gradual lowering of cost.

What, then, is all the shouting about? What distinguishes the prefabricated house from any other, and what has it to offer a world eagerly looking for better homes for less money?

The provision of homes, and buildings generally, is in process of evolving from the artisan and small business stage to machine, mass produced articles handled by big industry. The prefabricated house is part of that evolution. Since it is still evolving, it cannot be exactly defined. In its simplest forms; it is the result of the application of factory methods to the construction of the shell of a house. Those factory methods may, or may not, be quite crude. As the evolution progresses, more and more of the knowledge of mass production and mass distribution can contribute to better results. The aim is not a single standardized type, completely finished in the factory, nor can we be satisfied if effort is limited to the shell of the house alone. The desired result must be attained through the co-ordination of design, production, and distribution, so that from mass produced

standardized parts a variety and quantity of better homes for less money can be made available to the public. It is for this that prefabrication is striving.

Progress is slow, but progress is being made. Up to the beginning of the war, work in prefabrication was largely experimental. Commercial production was small and hence the economies and other advantages of mass production could not be realized. Many failures resulted from efforts to ride pet theories. Designers and promoters displayed an amazing unconcern for all practical considerations. Their designs were neither suited to the public taste nor to economical production; they recognized neither the effects of weather nor the restrictions of building laws; neither the cost, quality, nor availability of materials or equipment troubled them. Their contributions to the Utopian schemes which were significant of the depression period, were featured by the press, and their model houses were visited by thousands who came to see, but did not stay to buy.

### War-time Developments

With war came change and some significant developments in prefabrication. Housing and other facilities for millions of war workers, service men, and their families, were needed quickly. Materials and labor were scarce. Government agencies wanted large numbers of demountable or temporary units which were light, easily transportable, and which could be rapidly erected. Orders would now be placed, not for single individual homes, but for hundreds and even thousands of similar units. What had prefabrication to offer?

To meet this demand, there stepped forward a number of companies of all sizes and kinds. Some of them were hastily organized around an individual or small outfit with some experience or ideas on prefabrication; many of them, although they had not heretofore produced prefabricated houses, had extensive experience in large scale construction or production.

With the assistance of private and

government architects and engineers, plans reasonably suitable for quantity production were quickly developed, and improved as experience was acquired. New factories were set up, many of them right at the building sites. The extent of prefabrication varied from just the pre-cutting of lumber, to the building of panels for entire side walls or roofs, and to adaptations of the living trailer in which rooms or even complete houses were moved on wheels from factory to building site.

This war building has not yet been evaluated. It has been carried out under war conditions and for war purposes. Peace will bring changes in designs and materials. But a new industry devoted to prefabricated building has been formed, and its members have acquired considerable practical experience on which to plan for peace production.

### **Prefabrication Tomorrow**

What lies ahead? What contribution has prefabrication to make to the all important need—better homes for less money? Is a prefabricated house any better or worse than any other; more or less livable, comfortable, or durable?

It must be remembered that prefabrication is a method of construction in which more of the construction is done in a factory, less in building up by hand from the foundations. The houses so produced are not necessarily different in appearance, layout, or durability from houses built by the usual carpentry methods. Advertising to the contrary, there is no magic in prefabrication. As yet, in size, finish, and equipment, it does not materially differ from a conventionally built house in the same price class. Much adverse criticism has been levelled at existing prefabricated houses because they have been unfairly compared with houses costing twice as much, or because houses purposely built for temporary war use, and economizing to the greatest extent possible in the use of materials and equipment, are not as attractive or as durable or otherwise as good as homes built to outlast their owners.

There is only one purpose in factory fabrication, the application of mass production principles in order to increase output and lower the cost of production in a competitive market. When this is accomplished successfully, it gives the prefabricator an advantage in home building construction. It is obvious that the only field big enough for the volume needed to support successful prefabrication lies in low priced houses. The lower the price, the bigger the market. It is in the lower price ranges that prefabricated houses can make their contribution. Before the war, in the United States, most prefabricated houses were sold, erected but without land, for \$3,000 to \$4,500. During the war, thousands of them were built at costs of \$2,000 to \$3,500, and the big future for prefabrication would seem to lie in this latter price range.

There are still many obstacles to be overcome before prefabrication is accepted as a normal method of construction. Most of the present schemes are really unsuitable for economical mass production and will have to be discarded or materially modified; too many of our prefabrication systems are merely makeshift adaptations of hand methods of carpenter building. The mass production technique needs designs that are developed from a production point of view to get the most out of men, materials, and machines. And not only the shell, but the foundations, plumbing, and every other part of the house must be engineered and integrated for economical production, erection, and use.

But if the prefabricator were to design such a house to-day, he would have difficulty in getting manufacturers of equipment which he would need, to modify their designs to fit it, and he knows that in many communities, building labor would refuse to handle it, building officials would not permit its erection as being contrary to the local codes, and lending institutions would refuse the purchaser a mortgage. Like other new developments, the prefabricated house has been opposed by those whose self-interest is effected by change. So the

prefabricator is forced to move ahead slowly, devoting much of his attention to break down prejudices and overcome inertia.

As understanding develops, resistance decreases. Progress is being made in the formulation and adoption of a standard building code which recognizes that the function of a building code is the protection, not of vested interest, but of life and health, and that performance, not custom, must be the basic criterion. Prefabrication cuts into building labor practices based on craft lines, but offers opportunities for steadier all year around employment for the individual worker, and for work for greater numbers if a mass market for low priced homes can be tapped. The industrial unions were quick to recognize

and support prefabrication because of its benefits to labor, and the craft unions are slowly accepting the inevitable trend to mechanization.

The owners and operators of many war plants who are seeking peace-time uses for their large productive capacity have been looking with interest at prefabricated houses. Aircraft manufacturers, for example, will find many points of similarity between an airplane body, and a prefabricated house. The designing skill, the materials, labor, and productive techniques and equipment which are now going into airplane manufacture are especially suited to the manufacture of prefabricated houses. Other war developed techniques, products, and plants should have much to contribute to the desideratum—better homes for less money.

## Population Changes in the Maritime Provinces

By O. A. LEMIEUX

**T**HE decade 1931-1941 brought about considerable change in the population of the Maritime Provinces. It is of great interest to examine where and how these changes have occurred and what is their effect on the composition of the population of each province.

### Population Increase

In Prince Edward Island the population, which had been decreasing for four successive decades, showed an increase of 8 per cent during the ten year period, 1931-1941. The urban population increased by 19.4 per cent and the rural population by 4.5 per cent, while the farm population decreased by 7.9 per cent, and the area occupied as farm land decreased by 1.5 per cent. Numerically, however, the increase in urban population was only slightly higher than the increase in the rural. Urban development took place almost exclusively in Charlottetown and Summerside, the former contributing 62.2 per cent and the

latter 32.2 per cent of the total urban increase.

The increase in rural population is found largely in the counties of Prince and Queens, the former contributing 48.1 per cent and the latter 42.3 per cent of the total rural increase of the province. Of the sixty-six townships which constitute the rural area of the province, twenty-two decreased in population and in many others the increase was only slight. The rural areas adjoining urban municipalities are responsible for most of the increase in rural population.

During the ten-year period, 1931-1941, births exceeded deaths in the province by over 9,600 so that without emigration the population increase would have been 11 per cent instead of 8. In addition, there were in the province in 1941, 3,074 persons who were not there ten years before, and of these, 1,611 immigrated to Canada in the ten years which preceded the 1941 Census. This indicates an emigration from the province of well over 5,000 during the decade.

It is of interest to note that immigration

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