trator, while the sociologist is the one familiar with the constantly acting forces of custom, opinion, habit and attitude which often look so easy to change and prove so tough.

Community planning broadly concerns all of the arts and sciences. national level, the economist and administrators have the field. On the local level, the architect, landscape architect and engineer have the equipment needed to do the work. In the region, the geographer and the sociologist have the techniques of knowing what's what.

The committee is inclined to consider an undergraduate course in community planning unsuitable and that a graduate course would be better. Next year some foundation for a graduate course will be laid. Three fellowships for graduate work in community planning at McGill may be available for students who have obtained their bachelors degrees in any one of a variety of fields related to planning.

Social and Economic Aspects of Home Ownership

Walter C. Voss*

HOME ownership involves many factors which most people give little thought which most people give little thought. In the first place it is important to consider the economic status of the prospective home owner. Generally classified we have three income groups in the United States and these fall into the following categories of annual income. Based upon 1945 estimates, the number of families whose income is less than \$2000 aggregates about 47 per cent of the total. Those families whose annual income is from \$2000 to \$5000 comprise about 33 per cent of the total. The upper third comprises only 20 per cent of the families whose income is in excess of \$5000.

Each of these groups face quite different economic problems. When one approves the general rule that no one should invest more than two to two and one-half times one's annual income in shelter, it is readily seen that home ownership is definitely circumscribed by the practices and techniques available in the construction industry. The capacity of the industry to produce housing within

the reach of all groups has been questioned and undoubtedly we are not now able to reach the lower third and there are grave doubts as to the ability of the industry to build houses for all of the middle third. The upper third have always been provided for, as these families are able to pay the hand-to-mouth, one-at-a-time for wasteful practices of site fabrication and This overall situation is proberection. ably the most damaging indictment which one could level at the industry of a country which has the capacity for coordinated production and which has just proved to the world that it can do almost anything if it really wishes to.

A second economic factor which bears an inescapable relation to home ownership is continuity of employment,—in other words, security of income. Our economic cycles of run-a-way prices, pseudoprosperity and demoralizing depressions have gradually instilled such fears in the minds of our people that they are unwilling to involve themselves in an investment which may cause them untold misery should a depression strike. these reasons it would seem that any proposal for our approach to home construction should consider the quest on of continuous employment.

EDITOR'S NOTE: Walter C. Voss is head of the Department of Building Engineering and Construction Massachusetts Institute of Technology, Cambridge Massachusetts Data on insurance and for the calculation of financial information used in the article has been collected by Miss Roberta Kohlberg, a senior at the Institute.

In the absence of any such concrete and satisfactory plan middle and lower income groups have turned to rental housing. the middle income group being able to rent new housing units, while the lower income group has been forced to content itself with second, third and fourth-hand units which have gradually shouldered our cities with slums and sub-standard living quarters. There are many who argue that these groups should be renters, because they do not wish to have these people lose their entire life's savings through home ownership, during a depression. This is, of course, a very superficial and erroneous approach.

The only difference between ownership and rental is that in the first case the family loses its equity at one time while in the latter case it loses its equity a little at a time. When one remembers that the landlord must be able financially to carry the structure in which these families are housed, and that he is faced with the heavier maintenance which rental families always incur, it becomes apparent that the rent must be higher to pay for these items. Thus the renter is paying a small increament monthly for the protection of the landlord's investment. which he might just as well be depositing as savings for his own benefit, but which in the past he has not done. remains that the habitual renter is our worst citizen. He is most concerned with a place to sleep and eat, to be near transportation, theatres, stores and schools and in too many instances he is a transient who is foot-free and can jump his responsibility at any time. Individual home ownership involves responsibilities which are not usually assumed by the renter. If we might argue that the 70,000,000 people who are renters in the United States wish to remain renters because of their desire to avoid these responsibilities then we might just as well "call it a day" and get ready for the final collapse of our whole democratic structure. author, however, is not so pessimistic as to believe this. On the contrary, he would argue that the bulk of these families would much prefer to own their

own home if the price could be brought within their reach and if their status of employment was such that they could honestly assume the financial responsibilities involved. People are still—in the main—honest

Elements of Home Ownership

Thus we come to the consideration of the necessary elements of home ownership. As discussed above the owner wants a home he can afford and which his economic condition assures him he can keep. Coupled with these, he wants his home designed and built in the style and arrangement which pleases him. Regardless of what others may think, this he has a right to ask, expect and to get. He also would like to choose his neighbors. He objects to buying one of the houses in a large development because he may be concerned about who his neighbors will At any rate he should have the option of placing his house on a single lot in a developed area if he so desires. Most home owners know that the financial arrangements which are a part of their mortgage documents are not reciprocal. They know their equity is not protected. They know that if they should be caught in some sort of financial trouble that the bank will sell their house out from under them. They know that periods of inflation and periods of depression effect them seriously because the bank arbitrarily, but legally, manipulates its holdings so as to protect its interests and gives little consideration to the effects which the calling of a mortgage or a demand for mortgage reduction would have on the home owner. The owner is afraid of the effects of obsolescence. In these times he feels that any house he might buy or build might be old-fashioned and inflexible in a few years. If he could get protection against these hazards, he would feel much more secure and would be more willing to make a major life's investment for the ownership of a home.

If we review the past history of home building in the United States we will find that it is only recently, and then piecemeal, that any of these fundamental requirements have been met and what is more, industry has given little or no thought to the desireability of providing them. During the past few years, industry, government, individual designers and social and professional men and women have filled the press with many promises of new materials, new services and methods, all of which have further confused the home owner and made him doubly wary of buying or building a home for fear that his investment would be outof-date shortly and valueless should he wish to liquidate his holdings. We thus have introduced many confusions and have done little to integrate the entire problem in all of its aspects.

A review of the approaches to housing in these days, when homes are so badly needed, will clarify the economic factors which are involved. We will undoubtedly see all of these methods used to supply the demand. We will, of course, build many houses by the old conventional one-at-a-time plan and speculative builders will indulge in this effort. Larger contractors or groups will build larger developments using site fabrication on the theory that largeness in a locality will reduce costs, as it will to some extent. Several corporations are exploiting the "packaged house" idea. These groups plan to reduce costs by stipulating design, arrangement and size so they may get a degree of standardization and reduction of cost by integrating the national demand. Some local corporations will fabricate entire walls, floors, roofs and in some cases, rooms, all to be assembled at the site. This scheme also dictates style, arrangement and size. The precut house will again be exploited. In this plan, integration of individual structural members and coverings is attempted and the local assembler uses his usual skills without having to measure and cut each member. Finally, we will have corporations, locally and nationally, which will adopt the modular structural panels so that by permutation and combination the greatest degree of freedom in style, arrangement and size may be attained. This scheme does limit certain dimensions depending upon the module and does establish uniform story heights, but it does provide greater freedom than the rest.

Appraisal of Schemes

Let us analyze each of these schemes in the light of owner preferences and The individual speculative demands. house involves a maximum of field labor and a maximum of field labor and a minimum of preferred purchasing power because of small quan-In many instances the builder erects and finishes his houses and then sells them. This means he must find a buyer who agrees with his ideas of style, arrangement, size and price. The quality of these houses will vary with the skill and integrity of the builder, and it can readily be said there is a wide variation in this process because of the many personalities involved. In this method the owner does exercize choice of location. but he must live with the frozen entity until he is ready to sell it as a whole or to remodel it at great expense.

The site development scheme is usually conceived without reference to particular owners except by the general assumption of type of demand. The style, arrangement and size of the units is usually limited and the owner either takes one or leaves it. The amount of field labor is large and this is usually at the going union rates for split-time employment. The community is shouldered with an increased tax burden, as these houses, if in the low-cost category will not pay their way as tax units, because of the educational services imposed as well as additional civic services of other kinds. The community of which the development is a part will probably be forced to build three or four additional schools for each one thousand families housed and this expense is borne, of course, by all the taxpayers in the community who may have wished that the development had never come to town. These houses are financed in the usual way and the owner takes the responsibility of all future costs which may come from services which should have been included in the original development. These houses will also be frozen entities, costly to change.

The packaged house will undoubtedly be handled through dealers. The design. arrangement, size and cost will be based upon several fixed plans just as the automobile is at present. All of the employment which is provided in the fabrication of these houses will be centered in selected cities and local labor will either be deprived of work in its own neighborhood or it will migrate to these centres of fabrication thus draining smaller localities of their private enterprise. Most of these houses will be established entities which will be hard to remodel or change. Site labor will be small and in general, aside from the demoralization of local enterprise these houses will help to reduce cost. The restraints will, however, limit volume.

What has been said of the packaged house can be said with equal truth of the full size wall, floor, roof and room fabrication. These plants will, of necessity, be more local and in this respect they have an advantage economically. They limit design, arrangement, size and ease of change to a large degree. They also have relatively limited volume.

Precut structural members assembled on the site will be used only at first and will probably be adopted by some speculators to reduce their cost when the other schemes bring the inevitable pressure of competition to bear upon the field.

In the writer's opinion the only logical approach to prefabricated housing is by the use of modular structural units with great flexibility. If the module is chosen wisely and as small as can be used economically, design, arrangement, size and cost can be varied to the greatest extent. If in addition these parts are assembled in such a way that they can be dismantled easily without disturbing the rest of the structure to any great entent, then the owner may grow with his economic conditions and he may modernize his home at small cost from time to time.

He can have reasonable control of exterior and interior finishes and he may get his house just as cheaply if he builds on a single lot as if he bought in a new development. At least he has the choice.

Obstacles

All of these approaches will meet resistance and obstructions from several sources. First of these are the building and zoning codes. Our antiquated building codes are still based upon the conception that restrictions and regulations should be drastic enough to insure safety against the incompetent and unscrupulous builder and the use of inferior materials. This has always militated against the good builder and against good materials. This discrimination would be even more odious against machine fabricated work and controlled production. The new techniques used in these prefabricated units are not recognized and the attempts to save materials by making those which are used work more effectively and scientifically goes for naught. are still those who so worship our old "Egyptian" methods that they refuse to allow any change.

Zoning codes present similar difficulties. In communities where land values have risen for one reason or another and where zoning codes have set minimum lot sizes, the cost of land will exceed what should be paid for land in the total cost of a home. The author is not objecting to the lot size restrictions, but he is opposed to exhorbitant land costs which produce increments of profit not earned by the land but which have usually been established by the investment of others who do not profit. Where low cost land is available, low cost houses with low assessments are often responsible for gradually increasing tax rates as discussed previously. Land, at a reasonable profit, is necessary to low cost housing.

Labor union policy will have a great effect on housing costs. While it is the writers contention that all housing could and should be done by union labor it is equally true that labor must cooperate in this effort for the benefit of not only

the public, but itself. Where annual wages are assured and continuous employment is possible, unions will have to drop the justifiable contention that hourly rates had to be high because labor had only split-time employment. If the unions are sincere in this contention, and the author believes they are, then we should have no trouble in getting a degree of reduced cost for labor. Another way in which labor can help, is by increasing the production of its craftsman, in order to justify gradually increasing wages. There should be greater flexibility in the types of work any man can do in a plant, if he is able. No longer would they be in danger of exhausting their change of employment by working steadily, because in prefabrication rests the possibility of continuity of employment.

Much help can be made available by our lending agencies. They have justly charged higher interest rates because of the risks they have assumed in making loans. Nevertheless if loans are negotiated which are self-amortizing, if the mortgage is protected by life insurance and if the owner is willing to negotiate a small additional monthly payment to build up a reserve for maintenance and for emergencies—e.g. unemployment or illness—which will aid him in meeting his monthly payment, then the bank

should be ready and willing to reduce the rate of interest commensurately with the risk entailed. This may require permissive legislation, but the measure would certainly be in the public interest.

Carrying Costs

Should all of these impediments be removed it would be possible to produce housing within the reach of the middle third which they could afford to maintain. To prove this point it will be revealing to show a few figures on carrying costs and advantages which accrue from properly planned financing. If a young man 25 years old and married, earns \$2000 a vear he would be justified in purchasing a house and lot which cost \$5000. For this he could build a small home which gave him a living-dining room, a kitchen a bath room and one bedroom, providing the lot on which the house was built could be purchased for not more than \$500. If this young man could raise a down payment of \$500 it would be possible for him to shoulder a mortgage of \$4500. The family could elect to amortize this investment over a period of 15,20,25 or 30 years. If the bank was willing to reduce the interest rate from 5 to 4 per cent provided the young man covered his mortgage by life insurance consigned to

Table 1. \$4500 MORTGAGE—ASSESSED VALUATION \$4000

Years of Amortization	Interest, Amortization Taxes and Fire Insurance				Interest, Amortization Taxes, Fire and Life Insurance				Interest, Amortization Taxes, Fire and Life Insurance and Reserve			
	15	20	25	30	15	20	25	30	15	20	25	30
Interest and Amortization	\$35.87	\$29.97	\$26.64	\$24.30	\$33.57	\$27.54	\$23.99	\$21.65	\$31.32	\$25.07	\$21.33	\$18.99
Taxes—at 2%												
Fire Insurance	. 63	. 63	. 63	. 63	. 63	. 63	. 63	. 63	. 63	. 63	. 63	. 63
Life Insurance Reserve — \$1.00\$				·	3.06	3.06	3.06	3.06	3.06	3.06	3.06	3.06
mo. per \$1000									4.50	4.50	4.50	
Total Monthly Payments	\$43.17	\$37.27	\$33.94	\$31.60	\$43.93	\$37.90	\$34.35	\$32.01	\$46.18	\$39.93	\$36.19	\$33.85

the bank and from 5 to 3 per cent if the young man covered his mortgage with life insurance and a monthly payment at of one dollar per thousand of mortgage the time of purchase, the very illuminating values shown in Table 1 are obtained. An analysis of the value which might be expected at the end of the period of

small, isolated enterprises to the level of centralized mass purchases and distribution. Unnecessary costs must be drained from the project all the way from manufacturer to local erector. This will become a reality when organized groups in each locality are integrated nationally so that they may avail them-

Table 2

\$4500 MORTGAGE-\$4000 ASSESSMENT

Period of Amortization	Interest Amortization . Taxes Fire Insurance	Interest Amortization Taxes Fire Insurance Life Insurance	Interest Amortization Taxes Fire Insurance Life Insurance Reserve
15 Years	\$3500	\$3825	\$4580
20 Years	3000	3450	4900
25SYears	2500	3050	5050
30 Years	2000	2675	5275

amortization should an owner wish to liquidate his entire holdings and assuming that the owner had not found it necessary to draw upon his reserve is very startling indeed. Using the same example suggested previously the following estimated values are possible: (Table 2).

In addition the owner would be able to enlarge and remodel his house at lower cost. The ease with which the owner could liquidate his holdings in case of movement, and the protection afforded the wife in the instance of the husband's death would remove much of the uncertainty now connected with home ownership.

The approach must be that of a large, coordinated, co-operative enterprise. The effort must be raised above the level of

selves of the savings afforded by large purchases made through a central cooperative agency. Several of such cooperative enterprises in competition with enterprises in competition with each other will keep all of them progressive and working in the public interest. When the centralized co-operative unit is firmly established it can indulge in research and development, adapt new materials and methods to the expanding industry and thus keep the design and construction of houses up-to-date. The most important accomplishment will, of course, be the reduction of first cost, the basic key to successful economic home ownership, and reuse will gradually reduce first costs even more.