EVALUATIVE STUDY OF THE OWNER AS PARTICIPANT HOUSE BUILDER

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Abstract

The study evaluates self-help as a low cost but high quality approach to single family housing.

Its purpose is to point to a socially needed and technically progressive alternative to Canadian homeownership.

Due to the absence of an active regulatory and financial government support system in Canada, West Germany's expanding owner-participant builder market was selected as the primary study model.

Review of the rapidly expanding factory housing industry in the United States and of relateable skill training facilities is intended to broaden the reference base for Canadian government policy evolvement.

Focusing on the West German self-help housing program, three main areas are specifically assessed:

(1) Framework of related government support and incentives.

(2) Preferential loan policies and risk reducing factors.

(3) Housing industry characteristics and self-help related construction and completion alternatives.

In overall intent of political and economical thinking, the German owner-participant builder is projected as entrepreneur who actively creates value in the national sense, not only through medium term saving and asset formation but also through development of social responsibility.

In the United States no directly related political thought and support system is evident but there is comparable intent to deregulate and to encourage entrepreneurial momentum.

Rationalizing and restructuring to produce lower cost and good quality housing characterize the growing U.S. trend toward factory housing. To supplement and to benefit from the industry's modular construction and merchandizing base a number of owner-builder schools are teaching hands-on and related knowledge skills.

However, it is in the German self-help housing market where the strongest impulse is registered. There, government policy officially endorses classification of self-help work as a form of equity and all public and private financial institutions make mortgages available on self-help labour in lieu of downpayment.

Any serious consideration of self-help housing in Canada would benefit from the experience offered by the German model, particularly in the regulatory and self-help financing components.

Combined with the U.S. factory housing methods and skill training approaches the major concerns related to quality control, warranties and lending risks can be resolved while respecting the specific characteristics of the North American housing market.

A. INTRODUCTION

To build one's shelter by hand is the oldest form of economical house-building and also the most labour-intensive in the total project management sense.

> "A human being can deliver 0.5 horsepower for brief periods, but only 0.05 horsepower over long periods. High efficiency amounts to 1%. This is very little in comparison to a machine which operates at 20% efficiency at the minimum. Man functions best with his mind, not with his muscles."[1]

If the rationalization of production methods is man's forte and mass production is the logical goal to solve the world's housing problems then it is only natural to explore the potential of high technology. Computer generated drawings and assembly robots could have just as significant a role to play in housebuilding as in automobile manufacturing.

But depending upon one's philosophy regarding man's 'sane in corpore sane', one can regard building a house, or part of a house, by hand as a healthy physical exercise to balance the stress of daily mental work, with concomitant financial advantages. By creating value in the social, psychological and ultimately in the total sense of a nation's economy, the individual's contribution is far more than one cog in a vast wheel.

> "The overvaluation of 'production' leads to the stunting of a man's manual skills. The old stonemason enjoyed more freedom and independence on a building assignment than the specialized worker on the assembly line. He was perhaps a more contented man than his modern counterpart. It can be said in passing that mere production per se is not creative, in fact, it is inhuman." [2]

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1 Thomas Schmid/Carlo Testa, Systems Building, New York, 1969, p. 8

2 Ibid, p. 10

B. BACKGROUND AND PURPOSE OF THE REPORT

Manual labor and a measure of skill with related indigenous materials produce self-help housing for nearly one-third of the world's population. In production terms this represents a gigantic endeavor on a personal entrepreneural basis not only for developing countries where millions build their own home with their own hands but also in the rural areas of industrialized nations. The versatile skills required in farm maintenance in combination with a labor pool of family, friends and neighbours actively create self-help housing. The accent is on active personal involvement - entrepreneurship - to overcome financial constraints. Socially desirable, as building challenges the creative intelligence, develops self-confidence and economically creates "good value for money", on a national scale. North America's rural and semi-rural areas are no exception with self-help housing produced not only by the farming community but increasingly also by owner-builders, i.e., "settlers" from urban areas.

Their values and house building methods vary considerably. Many cannot or do not feel the need for design or self-fulfillment, functional beauty and craftsmanlike workmanship - the architectural bundle, so to speak. They build in different ways for differing purposes.

> "At one extreme is the on-site assembly of factory components: pre-cut studs, plywood sheets and the ready-mix truck. At the other end are the purists who build from scratch - originals that no modular component would fit, that no mass marketing architect could conceive. Somewhere in between are those of us who started without any particular ideology. All we wanted was shelter. The only requirements were that it be cheap to operate." [3]

The common denominator in all endeavors is the desire to own one's own individual home. This is a desire line which wraps itself around the globe from developing to highly developed countries. The only constraint

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[3] Charles Long, Harrowsmith, No. 37, Aug. 1981, p. 27

is that the individual house, la maison individuelle, la casa nostra, das Eigenheim, in the western world, is out of reach for the majority of the young potential homeowners.

The home is the highest and best personal investment an average wage-earner can make. Traditionally and consistently it returns dividends by virtue of its built-in inflation "indexing" and forms the bulwark of the family's money management program. Perhaps because of the deep emotional involvement in respect to home ownership, governments in the major European industrialized countries generally have not drastically - as through rent control - interfered with the value of single family houses.

North America, with a much thinner social security blanket, has to make home ownership into an investment of substantially greater socio-economic significance. Nevertheless, due to steady performance of North American housing as an inflationary hedge, house prices have run away from salaries which are increasingly stabilized on the basis of "less reward for more productivity". Especially in Canada, competitive export strength is seen by industry, government and labor to be today's economic survival formula. In this context the self-help owner's work makes supreme economic sense as one hour costs only sixty minutes - of perspiration certainly - but not cash outlay! However, in the United States and in Canada this "sweat equity" labor is not treated by lenders as part of the down-payment on a house as it is by public and private financial institutes in Germany. Bonn, together with Washington and London, in some measure, share the same political credo of less regulatory and related government intervention. Compensating emphasis instead is placed on privatization to effect higher returns for investment capital and make the housing market interesting again to the investor-entrepreneur. Privatization is high priority in Bonn in accordance with well-proven political thought of the past.

> "In Germany, the aspect of supporting housing is secondary, while the main intention is to give an incentive to saving and asset formation." [4]

Against the background of higher and higher and highest prices for single family houses the self-help housing concept is seen as an essential market segment enjoying the full organizational and technical co-operation of the related pre-fabricated housing* industry, which is Europe's largest.

In Canada "pre-fabricated housing" has taken a back seat and thus the relationship self-help and pre-fabricated housing is not yet apparent. Substantial promotional momentum for self-help housing can only be generated by a pre-fabricated housing industry in awareness of the available skills and income levels of the house purchasers. Factory housing now accounts for an estimated 28% of housing starts in the United States, 22.9% in West Germany, and 11% in Canada. Due to the successfully established nature of self-help housing as an integral part of the pre-fab industry, the German housing scenario qualified as the most suitable in terms of Canadian government self-help housing appraisal. In the sector financial self-help assistance and technical guidance the model presents itself as a broad spectrum case study. In this context, major self-help characteristics, problems and interrelated risks are analyzed from a Canadian lender's viewpoint supplying credit to the owner as participant house builder.

> "Self-help is regarded by lenders and government alike as an additional risk. This is why the estimates of the self-help share have to be shown to be realistic to the extent that the labor can be performed as per degree of difficulty and the personal circumstances of the owner." [5]

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[4] O.E.C.D. Housing Finance, Paris, 1974, p. 34

[5] Baubehörde-Öffentliche Bausparkasse, Hamburg, 1980, p. 23

* Pre-fabricated house in this report to mean) A factory-built house - architect designed - in large sections to be transported to a site, where the sections are tied together over a pre-built basement.

The above quotation is taken from a self-help guide issued jointly by Hamburg's Ministry of Building and the public "Save-to-Build" financial institutions - a statement only too well appreciated by credit institutions and related government bodies in Germany and certainly in Canada. But this is where similarities seem to end. In Germany the higher lending risk factor in self-help housing is not considered to outweigh the inherent social and economic value and benefits of the exercise. Rather than being the passive recipient of subsidies (whether these be in the form of shelter allowances or, simply, tax exemptions), the active self-help labour value is accepted in lieu of a downpayment by public and private lenders.

Currently, in Canada,there is no comparable financial assistance provided at the public, semi-public or private level which would encourage owner participation in a manner similar to the established West German self-help housing model. Lender's risk seems the obstacle. Consequently the report deals primarily with the political, technical and financial characteristics of self-help housing with particular emphasis on the model's risk-reducing measures regarding the owner's self-help labor share. Generally, national identities tend to determine the particular forms of assistance and programmes developed in each country. In the major industrialized countries of the western world the range extends from political risk evaluation to housing targets as per budget, and the resultant creation of special financial incentives backed up by statutory, regulatory and tax exemption measures. This very diversity of assistance does not allow for many specific projections in this report quite apart from the physical and time constraints of the field research.

Rather the report is concerned with the range of support and incentive systems in the self-help housing market as shaped primarily by German government policy and industry. In this context, some counterpoints from France and the United States are set. Significantly, since World War 2,

self-help housing in the European political housing sense, has shown remarkable resilience vis-a-vis socialist or conservative housing policies. By virtue of proven stability and longevity the German self-help housing experience should provide a valuable marketing information and policy projection base.

C. THE SELF-HELP HOUSING MODEL

1. Main Considerations

Most European governments have traditionally given housing a high political profile and Germany is no exception. As in Canada the entrepreneur in housing has been rediscovered and less government involvement, deregulation, and privatization are imprinted onto the not quite fluttering housing banner.

> "There is no doubt that Germany's home ownership presently at 39% lags considerably if compared to other European countries. Although the will to create home ownership is still unbroken its realization seems hampered by an unfortunate constellation characterized by the cost of serviced land, creation cost of projects, interest rates and real increases in wages and salaries. Creation of new residential projects, especially of new single family dwellings during the last year reached an absolute low. This is why great hopes and expectations come with the new government. The die is cast now and indeed there are pronounced signs of a new upswing. Deeds have to follow now by creating the right terms of reference. The Federal Minister, Dr. Oscar Schneider, has given the assurance that in the years to come home ownership assistance will feature prominently as a policy target. In this context the Minister's target is: <u>every other family should own a home.</u> That this is not utopian at all is evidenced by the sudden rise in building construction." [8]

The personal emotional involvement with home ownership at the ministerial level seems to render additional promotional policy benefits.

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[8] <u>Der Bauherr</u> (Okal-Journal), June 1983.

> "Minister Oscar Schneider as Minister, responsible for building, can only hope to reach his long term goal of 50% homeownership in the year 2000 if Helmut Kohl's cabinet takes short term decisions. Schneider not only has to keep alive the desire of the Germans to own or build their own home but also has to further stimulate this desire. This, however, can only be made possible if potential homeowners are to be offered financial advantages. Any such advantages represent a burden on the government's coffers guarded by the thrifty Minister of Finance, Gerhard Stoltenberg. Nevertheless Schneider managed to convince the Chancellor and his ministerial colleague, Stoltenberg, that something had to happen over the short term in order to stimulate stagnant construction activity. As a result of the Minister's effort it is particularly the future homeowners as a target group which receive the benefit and are, as per Schneider, very close to his heart." [9]

And, indeed, the new Conservative-Liberal Coalition in Bonn through immediate, short-term measures, appears to have given the housing market some encouragement. The most important are -

> "Immediate measures (Sofortprogramm). Tax benefits and interest subsidies allow owners or potential owners of single family dwellings (owner-occupied) to deduct debt interest up to DM10,000 for 3 years. In existing houses up to now only 1.4% of the assessed unit value (Einheitswert) could be deducted. This benefit also applies to homes which have been started after 1982 09 30 with completion required by 1987 01 01." [6]

In addition .....

> "The Federal and the provincial governments with a fund of DM 550 million support "Save-to-Build" efforts through a 2.5% interest benefit intended to reduce interim financing loan rates. The intent is to accelerate actual housing starts for those savers who have managed to save 33-1/3% but not the full required 40% of the "Save-to-Build" contractual amount." [7]

These recent decisions have helped the pre-fabricated housing industry - largely due to its capacity to react on short notice.

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[9] Capital No. 9, 1983, p. 82

[6] DM Extra - Bauen und Wohnen, 1983 No. 11, p. 10

[7] Ibid., p. 29

II. Government Legislation and Support Policies

Significantly, the statutory base in the form of the "Second Residential Construction Law" (Zweites Wohnbaugesetz, 30 July 1980 - abbr. II.Wo Bau G.) introduced by the socialist government has not been changed or modified by the new government.

> "This law obligates the federal, provincial and municipal governments to ensure the provision of sufficient housing for all population segments especially for those who are not in a position to provide their own. In promoting home ownership the desire to save and the motivation for self-help should be stimulated." [10]

In connection with self-help housing one finds the regulations that ...

> "those who apply for government assistance under this scheme will be considered first provided their self-help share comprises at least 10% of the total building cost." [11]

Government promotion of residential construction is defined by four support approaches:

1. Social Housing
2. Subsidized Tax-favoured Housing
3. Tax Incentives
4. Save-to-Build Premium System

1. Social Housing

Public money for the construction of a single family home is available to those who belong to "the favored person group": as per paragraph 25 II. WoBauG. "Favored" are those whose income lies within defined limits. The basis for income calculation is the combined annual gross income of all family members. Certain deductions from the gross income are allowable.

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[10] Baubehörde-Öffentliche Bausparkasse, Hamburg, 1980, p. 16

[11] Halding - Hoppenheit, Mein Haus-Meine Wohnung, Munich, Zürich 1978, p. 314

Annual Gross Income (1980) in DM*		
Persons per Household	Social Housing	Subsidized Tax-Favored Housing
Single	21,600.-	30,240
Two	31,800.-	44,520
Three	38,100.-	53,340
Four	44,400.-	62,160
Five	50,700.-	70,980
Additional Bonus For:		
Young married coupled	8,400.-	11,760
Handicapped	4,200.-	5,880
Severely handicapped	9,000	12,600

NOTE: Slightly higher income in social housing is permitted - as 10% more in Hamburg.

A further restraint is that in this publicly sponsored building system, a single family dwelling only qualifies if the floor area does not exceed set upper limits:

Detached houses - $130m^2$

Detached houses (2 units) - $200m^2$

In the case of larger families (more than 5 persons) slightly higher minimum floor areas are allowed.

With reference to the Canadian social housing situation, it would seem that the establishment of maximum floor areas to qualify for support would be an administratively simple solution to produce economical housing in an efficient manner. When it comes to the actual assistance calculation, the "supportable" portion of the above floor are is $100m^2$ (even if the house floor area is $130m^2$ maximum).

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*Approx. 1980 value = one dollar Canadian equals: DM 2.00

The question of how much a typical self-help applicant can expect to receive from the public coffers cannot be answered without studying the situation in each individual province. Due to the confederated structure of the country and a degree of discretionary independence at the provincial level, the subsidy amounts vary from province to province even though the II. WoBauG. is the guiding statute. With these considerations in mind and subject to the above restraints on income and floor areas the average loan is based upon approximately DM 700 per m^2 of subsidizable floor area. The loan is repaid at 2% interest over the first 35 years and afterwards, for the remainder of the term, at 5%. A 1% administration fee is collected up front and an additional ½% each year.

Special provincial loans are also available depending on the size of the family. For example in Hamburg, a family with 2 children could receive DM 2000, with 3 children, DM 5000, and for every additional child, DM 4000. These family loans are interest free and are repaid at 1% per year over the first 15 years and 2% thereafter, with the same administrative fee structure as above.

Special federal assistance is also available for families with a minimum of 3 children with the loan amount being DM 8000 plus another DM 3000 for each additional child.

In home ownership the problem is not only to build a home but also to be able to carry a home and here the provincial government also assists in the form of a degressive annual loan scheme (Aufwendungsdarlehen) to reduce carrying costs to the highest permissible rents in subsidized housing.

Again, using Hamburg as an example, the loan is calculated on the basis of approximately DM 4 per m^2 per month which is then reduced by DM 1 every 4 years. Payments to the homeowner are made annually and are virtually interest free. Only in the 19th year is the owner required to begin repayment and at a very low interest rate of 2%.

Should the downpayment and not the carrying costs be the primary problem a pre-financing loan (Vorfinanzierungsdarlehen) is granted on the basis of approximately DM 300 per m^2 of floor area on an interest free 12 year period basis.

2. Subsidized Tax-favoured Housing

The core of assistance is the Ownership Program (Eigentums Program) whereunder a degressive annual loan is granted to qualified applicants for a period of 12 years. Loan applications are submitted to the municipal or county administrations.

Although there are variations in the program between provinces, fundamental to any application are the following 2 considerations:

1. the annual gross income is not exceeded by more than 40%.
2. that a social housing unit is vacated as a result of loan approval.

Provincial variation is illustrated by a monthly calculation base of DM 4 per m^2 decreased by DM 1 every 4 years in the province of Hessen compared with DM 5.20 per m^2 decreased by DM 1.30 every 3 years in the province of Hamburg.

The loan is interest/principal payment free for 14 years but from the 15th year on, interest is 6% and repayment of the loan is started at a rate of 2% per year. Compounded over 12 years, the total amount is DM 32400 (1980) for the home ownership plan as it applies to a $90m^2$ dwelling unit in the Province of Hessen. In the Province of Hamburg the same dwelling unit amounts to DM 56161 due to the differences in the formula as noted above.

In addition to the home ownership loan program some provinces (Bavaria, Hamburg and Hessen) grant special loans for newly-married couples, single parents, migrants from poor agricultural areas and specialized industrial workers - groups which are particularly disadvantaged in terms of finding

shelter. Finally, the total maximum floor areas as set under the public housing standards may, for this tax-favored group, be exceeded by 20%.

3. Tax Incentives

Parallel to the intensive support path as detailed under a., or, the lesser as outlined in b., the government also encourages home ownership creation by means of:

- higher capital cost allowance write-offs for single family homes
- release from the property acquisition tax
- temporaty exemption from property taxes

In the case of the owner-occupied single family dwellings, there is an additional concession in the form of an increase in the capital cost allowance whereunder the owner can write off 5% per year over 8 years provided that the total construction costs do not exceed DM 150,000 for one family occupancy and DM 200,000 for two family occupancy. This special capital cost allowance rate per year (DM 7500 in a typical case) is applied against taxable income under the Owner paragraph, 7b, of the income tax law.

> "In this context of the capital cost allowance the respective self-help shares cannot be included into the above total construction cost." [12]

This is most likely because the very time/cost character of self-help, which is its unique feature, is not too precise. In self-help terms time is relative to the owner's skills and quality standards making any theoretical self-invoicing by the owner difficult to assess.

Property acquisition tax (as a rule 7%) applies to single family dwellings, two family houses and condominiums. However, a release from the tax is granted on condition that the purchaser, spouse or a relative occupies the property for at least one year of a 5 year period and 2/3 of the property is used as living quarters. A complete release from the tax is only granted if

[12] Baubehörde-Öffentliche Bausparkasse, Hamburg, 1980, p. 19

the maximum purchase amount does not exceed DM 250,000 for single family homes or condominiums and DM 300,000 for two family homes. In case of higher acquisition costs, the portion above the set maxima will be taxed on the usual 7% tax structure basis.

In Germany it is significant to note that the property tax exemption is used positively and rationally to create economic housing. By setting maximum floor areas which may not exceed the public housing maxima by more than 20% a 10 year exemption from the property tax is available to homeowners who comply with this restraint. This means that to qualify for the exemption the floor areas cannot exceed:

$156m^2$ for a detached house

$240m^2$ for a detached house with 2 units

$144m^2$ for owner occupied condominiums

Exemptions will also be granted for households of more than 5 persons or for particular personal and professional circumstances. As the great majority of new homes comply with the above categories the average German home-owner enjoys a tangible front-end benefit compared to his Canadian counter-part. The difference is especially pronounced in Canada's metropolitan areas where property taxes, during the last decade, have risen appreciably faster than the householder's personal income.

From a fiscal administration viewpoint, the German system is relatively simple as a transfer of funds from the federal/provincial coffers compensates the municipality for the property tax loss.

4. Save-to-Build Premium System

Generalities

Traditionally, most countries in Western Europe facilitate acquisition of a house through governmental support of institutions or financial instruments which specialize in long term saving and housing.

> "In the United Kingdom building societies occupy a dominant position, financing generally between 80 and 90% of all houses financed by funds borrowed from institutional sources." [13]

The French housing-savings scheme is successfully based on medium term saving and is intended primarily for lower income groups.

In Germany, for more than half a century, the "Save-to-Build" institutions (Bausparkassen) have been concerned with second mortgage financing. Together with other German lenders they also consistently included the self-help labor content to 'top-up' the down payment in cases where funds were scarce but the will to build was evident.

While up to very recently this 'sweat equity' concept was popular in the lower income market segment, one notes now that the steadily rising cost of new single family housing makes the self-help concept financially attractive to young couples in the medium income level. It is under these market conditions that more and more young people are willing to participate in the self-help philosophy in order to achieve the high standards of quality to which they are accustomed. But it is not only the almost uncompromising attitude to quality but also the will to systematically save over a period of 8 to 12 years which, by comparison to other countries (and especially in Canada and the U.S.A.) makes home ownership so appreciated in Germany. To what extent the "Save-to-Build" concept together with government incentives has helped to develop saving habits irrespective of inherent traits is not easily assessed. Yet the will to save is the foundation of home ownership in Germany. It is generally agreed that saving should start as early in life as possible to enable a young couple to own a home before reaching the age of thirty. The principle of saving early and over an extended period through private and public "Save-to-Build" was established in the 1920's.

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[13] O.E.C.D. Housing Finance, Paris, 1974, p. 36

> "After the second World War they expanded rapidly and in 1970, no less than ¼ of current savings of households was channeled to the "Save-to-Build" Institutions which, in turn, provided well over 30 % of total funds invested in residential construction." [14]

With definitely a second, if not a third generation of satisfied German "Save-to-Build" homeowners urging their children to start saving at around 20 years of age, millions of potential homeowners are involved as every other German household possesses a "Save-to-Build" contract.

Indeed, the collective organization functions as the financial reservoir for future building to millions of "Savers". Under the collective principle, individual arrangements are not possible. Every saver is treated equally. It is necessary for the collective's retention of liquidity that savers put funds at the collective's disposal over an extended period of time. But there are also those who want to maximize the available benefits through "fast-track, save-to-build" contracts. (Schnellsparvertrag)

Therefore, the tongue-in-cheek saying which makes the rounds in German loan managers' circles that ...

> "Every saver has the potential to cause harm to the collective as he will appear one day and ask for a loan ..." [15]

is not altogether without validity. The fast-track saving approach represents a certain real danger to an institute's liquidity and therefore these contracts are held to a minimum.

After so many years of successful operation, today the "Save-to-Build" principle is of such significance that one can state without exaggeration that without a "Save-to-Build" contract there would be no significant single family housing market in Germany.

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[14] O.E.C.D. Housing Finance, Paris, 1974, p. 58

[15] Halding-Hoppenheit Mein Haus-Meine Wohnung, Munich, Zürich 1978, p. 217

Operational

The future owner and the "Save-to-Build" Institution are interdependent via a contract relationship. The "Save-to-Build" contract is a combination of a saving contract and a conditional promise of a lower ranking housing loan to be secured by a second mortgage. The key figure for the calculation of the saver and the institution is the contractual sum determined by the saver when he enters the contract.

The principle: Savers pay into the collective over a medium term and low interest (2-3%) is paid on the deposit. The funds then flow to those who have succeeded in saving a minimum of 40% of the total contractual sum, and who, obviously, have offered their deposits, over time, to previous owners.

The interest charged by the "Save-to-Build" institution is also quite low (usually under 5%) and is fixed over the contract term. However, in order to make the scheme function over time the debt has to be paid off relatively fast, usually on a monthly basis of 0.5% of the contractual sum. In the case of a 60% loan over an average period of 11 years, the combined interest and principle payments would be 11.5% to 12% per annum.

To the average saver it is most important that the guarantee of an interest rate between 4.5% and 5% is not affected by the fluctuations in the general interest rate during the 11 year average repayment period.

However, the saver will not obtain a written statement as to when the "Save-to-Build" loan will be allocated. Although the minimum saving time is only 18 months, the 40% deposit alone does not qualify and care is taken by the institutions to adhere to the 10 year saving period as much as possible.

> "This does not hinder the "Save-to-Build" institutions from estimating waiting periods for allocation of the loan and to give the impression that this constitutes a reliable promise.
>
> Many lenders are aware of the consequences of such utterances and subsequently offer relatively attractive interim financing loans presently available at a 6% rate."[16]

[16] Capital 11/83, p. 373

Nevertheless a "Save-to-Build" contract is the only form of saving where the government not only rewards the saving by a premium payment but also by granting limited deductibility for the saved amount. Premium payments are made during the saving period of approximately 10 years and in order to qualify, the following constraints apply:

	Maximum Taxable Income *(1983)
Married Couple	DM 48,000
Single Person	DM 24,000
(for every child below 18 years)	DM 1800

In 1983 the premium equalled 14% of the saved amount, increased by 2% for every child. The maximum allowable annual amount saved is DM 1600 for couples and DM 800 for a single person. The respective "Save-to-Build" premiums would be DM 224 (couple) amd 112 (single) up to a maximum of DM 320 for a family with 3 children. In addition, employees under the "wealth promotion" legislation transfer certain qualified investments onto their "Save-to-Build" account and receive a 23% additional saving subsidy and with more than 3 children, up to a 33% subsidy. Here again, additional investment in housing is the government's overall intent through this reward-for-saving approach.

III. Financing of Self-Help Housing

Generalities

Owner participation may result in savings of up to 30% of the total cost for a home and as housing costs have been inflating disproportionately, the socio-economic benefits of any such individual anti-inflationary contribution cannot be overlooked. Especially in this post-recession, money-scarce period both in this country and in Germany, any such initiative is timely. However, only in the latter case is it encouraged both in the public and financial sense. Why is this so? Even if one has had the advantage of

*Taxable income is 15% to 20% less than gross income.

building houses on an owner-partipant basis in both the Canadian and German building jurisdictions, there is no simple answer. There is in both countries a shared political good will when it comes to the home as a desirable form of family shelter. However there are fundamental differences in attitude especially when one considers current hands-on approaches to housing as a subsystem of a total system. Traditionally German industry relies on an integrated theoretical-operational approach to solve production problems. To some extent the whole system is premised upon "factory floor" management. The specific cause of self-help thereby directly benefits.

The government renders statutory and regulatory support; a modern manufactured housing industry designs a product dimensioned to the self-help client and last but not least, financial institutions finance self-help house by treating them as a form of down-payment by the owner-participant. This is not to imply that a positive and supportive functioning of the whole system automatically eliminates all self-help risk which applies primarily in the financial and technical areas. However risks can be reduced substantially by this systems-integrated approach provided that self-help can be costed reliably. (See Appendix Ref. No. 1)

The inability or unwillingness to complete a building due to insufficient financing, lack of skills, poor planning, etc. are very real concerns particularly on the Canadian housing scene. Self-help is perceived as one more complication in an already highly uncertain and complicated equation. It is with this additional risk of owner-participation in the form of self-help in mind that the current situation in the German model is evaluated.

Financial Key Characteristics (Model)

With regard to the financing of the estimated self-help share for a conventionally built house, the key role assigned to the architect constitutes a considerable risk reducing factor for the institutional lender. In most provincial building jurisdictions in Germany only an architect, engineer or master builder (Meister) is authorized to submit the required documents for approval and building permit issue. A structural calculation (Prüfstatik) prepared by a professionally qualified engineer also has to be submitted for every house. (See Appendix Ref. No. 2)

> "The self-help share of owner-participants can be absorbed into the financial plan if it can be estimated and if architect and municipality can attest to the value and scope of the self-help work items." [18]

In case of an owner-participant house project it is not surprising that the financial institutions, in their publicity brochures and through client consultations, stress the use of an architect, not only up to the building permit stage but right to project completion. As the skills and organizational talents of the owner-participant are always based on a loan manager's personal assessment, additional risk reducing accuracy in the areas of quantity take-off and completeness of specifications is sought as extra insurance by the financial institutions. In essence the architect acts as a potential risk-protector, especially in his role as project manager. It is significant that there is a strong, publicly accepted and officially favored function for the architect in the single family housing market. This is strange outer sphere music indeed to Canadian ears, never to sweep across the acres of over-mortaged late Pompeian villas and half-timbered castles!

The already revered architect's role in Europe is even capable of adaptation to meet current and rapidly changing demands. At the Oct. '83

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[18] Halding-Hoppenheit Mein Haus-Meine Wohnung, Munich, Zürich 1978, p. 262

International Lake Constance Conference, "Trends in Residential Building", attended by over 200 architects from Switzerland, Austria and the Federal Republic of Germany, the young voices of the "hands-on" architects were duly noted:

> "One step further is taken by Walter Stamm (Wasterkingen, Germany) and also the Austrian architect duo, D. Eberle and M. Koch (Dornbirn) who build exclusively together with the future owner-participants. Such hands-on approach to building materials (so stated Eberle and Koch) brings with it a complete consciousness vis-a-vis the life shelter. It gives meaning to building as a process ...." [19]

With particular reference to the beneficial cost lowering results of the architect who is always on the site and is also a "hands-on" type:

> "Architect Peter Stürzebecher and his clients and friends built a small house of 85m^2 for DM 95,000. The architect by working with standardized design simplicity already planned for self-help input. Stürzebecher: There does not always have to be a new individual detail developed for every corner." [20]

The growing number of self-help case histories is clearly substantiating the fact that the DM per m^2 can be reduced to half of the average DM 2000 per m^2. Such evidence cannot help impress financial managers who are already convinced that the German house is overdesigned, overequipped, and overpriced especially when compared to neighbours such as Holland and Scandinavia. If the new generation of architects gets increasingly involved in the physical production process, so much the better for the lender provided that the "new simplicity" (Neue Einfachheit) is the guiding design and detailing philosophy.

> "This look across the borders to Holland and the Nordic countries has convinced many architects and builders that Germany builds too expensively. So there are building firms which import pre-fabricated elements from Holland because the price is lower."[21]

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[19] R. Hübsch in the Baseler Nachrichten Oct. 27, 1983

[20] J. Herle in "Schöner Wohnen" Oct. '83, p. 205

[21] Ibid, p.216

The financial responsibility of both architect and owner-participant is increasingly stressed by lenders in their publications. Typically, one reads ...

> "When it comes to the matter of quantities and specifications the owner-participant has to work very closely with the architect. Basically two work zones emerge: work which can be done through self-help and work which has to be contracted out. For the work which is contracted, the architect prepares all bidding information. For the self-help work a list of materials is jointly compiled which is the basis for ordering. The awarding of the contract itself can be done by the architect, or depending on his talents, by the owner-participant. If the architect is not involved then the letting of the contract counts as part of the contractor's work (Unternehmerleistung) and if skillfully done can effect a saving. It naturally introduces an additional risk for the owner-participant and work has to be done by him (search forcontractors, invite and compare bids, enter into contracts and monitor invoices)." [22]

It is interesting to note that the above quotation is not an isolated example and that many "Save-to-Build" financial institutions acknowledge and guide the owner-particpant in their official publications. If the owner's individual talent in the bidding process is evident, then the very self interest of the owner should result in lower bids and this effort is thereby seen to be a part of the self-help share to be front-end financed by the lender. Information collected during interviews with regional lenders confirmed an active owner-partipant role especially during the important pre-construction as well as the construction phase.

> "During construction the owner-participant has to take over part of the management. He must pre-arrange the building process as per his own technical skills and time constraints and during the total construction period must have an overview in order to exert control. "[23]

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[22] Der Selbstbau (Self-help Building) Bayerische Landesbausparkasse (Bavarian Save-to-Build Inst.), Munich 1980, p. 15

[23] Ibid, p.16

With this in mind he must get involved with:

Construction Scheduling which has to be dimensioned to the key events of pay-outs and loan instalment inputs as per the financial plan.

Construction Management. Here the owner-participant also can assist. Typically the construction manager is an independent expert, usually an architect or persons defined under the II.WoBauG. 94. In most provinces an authorized construction manager (Bauleiter) is required who also is responsible for site safety. In this traditionally high risk phase of construction, the Federal government, as per the provisions of the II.WoBauG. acknowledges additional self-help risks. In the case of a subsidized or tax-exempt project the owner, family members and unpaid or cooperative workers are granted free accident insurance.

As per the II.WoBauG. regulations (see Appendix Ref. No. 2) the administration of accident insurance is transferred to the municipality. This is no doubt based on the evidence that control over self-help projects is better exerted at the grass-roots level. Thereby the risk-reduction concerns of the regional "Save-to-Build" financial institutions also seem to be better satisfied. Third party public liability is also required and lenders usually demand additional private coverage both for persons and objects.

In the context of self-help risk reduction, insurance is essential to borrower and lender as it covers not only construction and material deficiencies but also errors in structural calculations. Usually a combination of all persons and building related insurance types is the standard set by the lender (See Appendix Ref. No. 3)

In order to financially program a project from plan to finished building, all three major cost groups - cost of land, cost of construction and administrative costs (fees, organization, inspection, financing, etc.) must be estimated with a high degree of accuracy. At the same time the project design

must be both strong enough and resilient enough to absorb the inevitable shocks, surprises and problems any project presents to the owner, architect and lender alike. Optimally, all three should share the risks as the project proceeds through the building cycle.

Any such self-help dimensioned financing has to take into consideration that the main money-saving self-help items are labor, best-source material purchasing and consistent construction management. As to the "saved" cost share, the total cost as defined by the three groups has to be the basis for calculation.

A typical cost breakdown below for a single family owner-participant house shows skill level range:

COST BREAKDOWN (1980)		OWNER-PARTICIPANT	
	DM	Skill Min.	Skill Max.
Serviced Lot	60,000		
Construction	240,000		
(Shell)	120,000	10,000	35,000
(Interior)	120,000	10,000	35,000
Site Develop.	15,000	5,000	5,000
Admin. Costs (Incl. financing)	35,000		
TOTAL COST	350,000 [17]		

NOTE: 1983 construction cost as per quality of interior finish ranged from DM 1850 to DM 2500 per square metre.

[17] Baubehoerde-Oeffentliche Bausparkasse, Hamburg, 1980, p. 31

IV. House Construction and Self-Help Alternatives

General Overview

Over the medium term the future of pre-fabricated housing in the U.S.A. and most of Western Europe looks promising and with it the growth of the "complete-it-yourself" alternative. Although this is not a new idea the high cost of housing has led to renewed momentum. The pre-fabricated "complete-it-yourself" principle presents tangible rationalization benefits to the owner-participant. Generally in the United States, forecasts as to the future of pre-fabricated housing share a total residential construction are bullish.

> "Most of the more than 1.7 million homes built each year in the 1980's will be too costly for the average American. The answer for many buyers - and an opportunity for entrepreneurs - is manufactured housing. By providing economies of scale and lower labor and material costs and avoiding delays from foul weather and sub-contractors, mobile* and modular housing manufacturers can often undercut comparable "stick builders" by 30%." [24]

> "There is data variance as to achievable savings. Some market researchers go as high as 50% cost advantage over site built housing." [25]

Manufactured housing's share information also varies:

> "Between 22% and 36% in 1982, depending upon which trade organization you believe." [26]

On the Canadian housing scene there seems to be general agreement that the future of housing will depend largely on design and quality improvements in the modular housing segment.

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[24] "Venture", Aug. 1983, p. 36

[25] Financial Post, Dec. 3, 1983

*The "Mobile Home", although factory-built, is not included under pre-fabricated housing as defined.

[26] Ibid, 24

> " The factory built housing industry has weathered the recession but still needs to construct a better image before it can grab a bigger share of the market." [27]

Presently, the Canadian modular home industry with a single family home market share of only 11% is not yet in a position to capitalize fully on its technological advances in assembly, quality and energy conservation. As the image problem is primarily a visual one, it is useful to look at current standards of architectural and industrial design in both the U.S. and Germany. Most major U.S. modular home manufacturers reflect current internationally accepted architectural and/or industrial design standards. In Germany, a total of 300 architect designed pre-fab exhibition houses in major and smaller cities demonstrate very high visual design and quality standards. (See house samples - Appendix.)

In Canada, however, one is tempted sometimes to inquire if the mobile home or the "U.S. tin can trailer" image still does not subconsciously influence some marketing and visual approaches in this still very small and vulnerable industry. Nevertheless, the affinities in technical approaches as for example between the U.S. and German manufactured home industry should not deflect one's attention from the fundamental differences in financing, saving and government support systems as already mentioned. Due to the absence of specialized financial institutions dealing in second mortgages such as the "Save-to-Build" ...

> "Most of the big builders have developed or acquired their own mortgage financing subsidiaries which allow them to originate, underwrite, process and then sell mortgages on the secondary market." [28]

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[27] Financial Post, Oct. 22, 1983, p. 14

[28] Business Week, Nov. 7, 1983, p. 94

Although in the U.S. design quality is part of the house package ...

> "Builders contend that a good financing package is still the most important selling tool. Younger buyers in particular want to nail down the financing first. After that, says Robert L. Dodge, President of Space Tech Homes in Port St. Lucie, Florida, they begin to consider the actual features of the house." [29]

Technical Key Characteristics (Model)

Increasingly housing producers are planning, producing and selling to the owner-builder or participant. Two technical approaches are offered:

Building Kit Houses (Bausatzhäuser)

Complete-it-Yourself Houses (Ausbauhäuser)

In both groups producers offer light wood frame and "massive" systems, mostly using hollow core aggregate blocks of concrete, wood parts and foam, structurally tied with poured concrete. In the promotional and operational areas, the Bundes-Gütegemeinschaft, Montagebau und Fertighäuser (Federal Quality Control, Element Building and Manufactured Housing Association) founded in 1963 in Hamburg comprises a broad group of industries producing pre-cast concrete elements for high-rise buildings, bridges, warehouses and single family houses.

> "In 1982, placed orders were valued at DM 11.8 billion with DM 12.8 billion for 1981 and DM 14.4 billion in 1980. For 1983 an increase of 10% is expected. Total market share of the industry as represented by the association members was 13% whereas the share of detached single family houses was 22.9%. The price advantage compared to conventionally built houses is estimated to be approximately 10% plus gains in time, financing and superior insulation. Recently, prefabricated basements in concrete or lightweight concrete are offered on a federal distribution basis. Production capacity is presently stressed leading to delays in delivery." [30]

Technologically, the industry may be described as being in the computerized component if not subsystem phase and one is aware that ...

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[29] Business Week Nov. 7, 1983, p. 94

[30] Süddeutsche Zeitung Oct. 16, 1983

> "The German manufactured house industry is still to be considered as a middle-status industry - as yet nobody has managed the great industrial breakthrough. How it could go is presently demonstrated by Japan." [31]

With this country's electronic industry gradually recovering and regaining ground as a result of the competitive electronic "shock" from Japan, this competitive challenge seems to increase awareness in other industrial segments. In manufactured housing, the situation could not be better, at least over the short term. Dr. G. Haase, Manager of the German Element Building and Prefabricated Housing Assoc. (abbr. BMF) characterized current progress as

> "extremely satisfactory with sufficient orders for the next seven months. This is unusual in itself as, typically, many house sales close toward the end of the year to use Spring Summer and Fall for erection of the houses. Some individual producers even report increases of up to 35%." [32]

Rosy indeed! Hopefully it is not the light from the setting western sun giving way to the sunrise from the east. The Germans cannot afford to disregard the potential competition from high-tech housing pioneered by Sekisui Heim and Mitsui Home Co.

> "The Sekisui Chemical Company in Tokyo produces homes on an assembly line (400 m) on a 24 hour, 7 days per week basis. Every 40 minutes a house is completed. In 1982, 12,000 houses were sold in the Japanese market with an annual building volume of one million houses. The Sekisui houses consist of individual steel frame modules with the frames auto-welded by robotic processes as in the automotive industry." [33]

and further ...

> "As if all this were not enough, the future of Japanese housing promises even more technological advances. The House of the Future of Mitsui Home Co. which builds 5000 units annually will incorporate all manner of solar and electronic advances - easily understood, given Mitsui's joint venture partner is Toshiba Electronics." [34]

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[31] G. Heine, Süddeutsche Zeitung, Oct. 18, 1983

[32,33] Ibid

[34] Thomas Nutt-Powell, MI, Aug. 1983, p. 92

As Germany has none of the import restrictions on Japanese cars (which are so vigourously exercised in Italy, France, the U.K., the U.S.A. and Canada), similarly, "electronic miracle" houses will likely be allowed complete market access by a government which believes in the "pike in the carp pond" theory of foreign competition inevitably improving the national industrial breed.

To an industrially very competitive nation such as Germany, this is a formidable challenge. The strict maintenance of quality control itself, as per the Japanese model is already a revered principle in the German industrial realm.

In the foreseeable future, house production on an automotive merchandising basis seems an elusive prospect in a country where the single family dwelling often involves a deep emotional attachment and personal sacrifice. More down to earth are the efforts of the BMF itself which have resulted in a significant contribution to reducing the lender's risk. The Association, if not arms-length, seems beyond direct conflict of interest as it delegates production inspections and checking of materials to independent experts who are jointly appointed together with the provincial governments. In the Canadian context, one should note the Association's raison d'etre is not only lobbying but also factory floor quality control with powers jointly shared by government and members, all with extensive operational experience.

> "The quality protection association (Güteschutzgemeinschaft) is officially authorized via the legislative powers of the provinces to control the production of all members on a continuous basis. Controls relate to the quality and processing of all building elements and are decisive for the building permit. The Assoc. only awards the "Gütesiegel" (Quality Seal) to those members whose products comply with the control standards. For the financial institutions, the "Gütesiegel" is often an important criterion for decision making and, for the owner himself, it also means additional risk protection when it comes to placing the order."[35]

[35] Fertigbau 1983 (Official publication of BMF, Hamburg), p. 5

Somewhat akin to the April, 1983 decision by the U.S. Dept. of Housing and Urban Development - HUD which made manufactured homes sold on permanent foundations eligible for FHA 30 year mortgage insurance

> "equivalent official sanction was given by the ruling that for purposes of mortgaging, the 'lending life' of manufactured houses is now held to be equal to that of conventionally built houses." [36]

In a market where houses are built for life, the quality factor is weighty especially in relation to the total financial risk carried by the lender over the longer term mortgage period.

As per Dr. Haase and with reference to claims resulting from production, erection or material deficiencies, the members jointly evaluate such claims and through combined expertise render assistance to the particular member who has a problem and needs help. From the association's literature one learns that ...

> "Fortunately, over a long period it happened most infrequently that a member had to surrender the seal which is tantamount to production having to cease." [37]

As reassuring as elaborate inspection procedures may be to the lender, the Japanese experience demonstrates that quality cannot be wholly enforced through inspections. Inspecting itself is a passive act whereas product improvement is active. Thus it is the capability of the process and the producers which ultimately sets quality levels.

Output control alone cannot do the job. In the context of housing, if self-help capabilities are low throughout the house building process, a final inspection cannot achieve quality improvement in depth.

Therefore skills and continuous involvement in the process are additionally required for total long-term risk reduction.

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[36] Dr. G. Haase

[37] A. Fisher, BMF Chairman "Zwei Jahrzehnte des Fortschritts" (Two Decades of Progress) BMF publication 1983

a. The Building Kit House (Bausatzhaus)

With the self-help approach gaining in popularity, the need for a specialized association arose. The result was the formation of the Bundesverband für Bausatzhäuser (Federal Association - Building Kit Houses - abbr. BBH) - which in cooperation with BMF maintains similar quality control standards. Presently, there are 12 members which offer kit housing. The large "Alpine" company in Freilassing occupies a leading role as

> "well over 20,000 self-help owners are on record as tangible and respected partners." [38]

Dip. Ing. Theo Schwarz, owner of "Alpine", whose initiatives led to the founding of BBH, explained that the 55 year old firm developed from a wood processing plant. Thirty years ago a new concept was developed which involved combining the natural characteristics of wood and the structural strength of concrete in the form of a 1.20m long hollow core building block called Iso-Span.

The house kit, through it very completeness in respect to the building materials and the technical and practical help rendered, is exemplary . However, the kit method means building from scratch by putting one block upon another. Together with all self-help risks, it is an intense physical challenge which has received the respect of a special title - "Muskelhypothek" or "Muscle Mortgage". (The North American "sweat equity", though less refined, seems more apropos financially.)

In this context Dipl. Ing. Schwarz pointed out that recently the volume of hard physical labor demanded is sometimes considered too much. This is not surprising as approximately 2500 hours of work over an average period of 18 months is the most economical formula but certainly not an easy task.

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[38] Bauen und Fertighaus, Nov./Dec. 1983, p. 220

"Alpine" together with other producers has recently acknowledged this market trend and now also offers a "Complete-It-Yourself" house.

With the building kit house comes a very detailed step-by-step construction guide, architect designed plans, energy calculations, statics, shop drawings plus construction management and, special skill and problem solving services right to completion. All phased deliveries and insurance are included in the total building kit price. A "hands-on" immersion course on a sample house is also offered as per demand. In addition, a complete set of tools is available.

By its totally professional approach the BBH association gives assurance that all members are aware of the great responsibility vis-a-vis the owner and the financial institutions. In Dipl. Ing. Schwarz's words ...

> "The Bausatz house is an exceptional, well-financed consumer oriented production concept. It dare not be destroyed by black sheep."

This philosophy is further reflected in the Association's regulations which stipulate:

> "Membership can be awarded only to those who give evidence of their technical and organizational qualifications for the production and provision of building kit houses." [39]

The following is a breakdown of cost sharing for a typical BBH house assuming a floor area of $120m^2$ and an owner's contribution of 2500 hours of work:

DM 84,000 (40%) for the house kit

DM 63,000 (30%) for sub-contractors (electrical, sanitary, heating)

DM 63,000 (30%) for owner's self-help

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[39] BBH Association Guidelines

The owner's share above is calculated based on the family contribution alone but can be considerably increased with the help of friends and neighbours.

To sum up: With the building kit house what one needs primarily is free time. What one needs secondarily is skills, but these can be acquired.

Paradoxically, sometimes a small new market seems to develop from having free time. An increasing number of retired and semi-retired Germans are now using a "self-help" house project as a healthier hobby. With one of the most advanced social security systems in the world, the actual pensions (including tax exemptions) often turn out to be higher than past wages or salaries. With premium-favored second mortgages (Save-to-Build) in place other lenders have no qualms about funding self-help projects on this priority ranked basis.

> "6% of all Save-to-Build contracts are signed by pensioners as the add-on 24% to 29% (60-65 years) tax exemption brings their income down to the premium sponsored DM 24,000 or DM 48,000 II.WoBauG. maximums." [40]

Although no information could be secured on how many of the pensioner-savers actually are building, the saving effort in itself is noteworthy and the purpose is useful as the contract can be passed on to children and grandchildren.

2. The Complete-It-Yourself House (Ausbauhaus)

This self-help variation offers the benefit of a completely finished house exterior. As the "Alpine" Company's marketing research has confirmed, there is an increasing need for this less demanding approach.

> "The German Ausbauhaus is - may one dare to compare - like a Potemkim village house. Finished on the outside it may only differ from neighbouring houses by the absence of curtains. But if one opens the entrance door one finds a completely equipped building site." [41]

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[40] Das Haus, Oct. 1983, p. 50

[41] Wir Bauen Unser Haus Selbst (We Build Our Own House), p. 62 Stuttgart-Fellbach 1982

As to the interior, the various producers offer a great variety of financial and skill-related completion alternatives. This presents somewhat of a dilemma to the comparison-price shopper as no two finishing packages are the same and the "Ausbauhaus" client is thereby obligated to spend many hours in serious study of the alternatives.

However, as the customer almost instantly enjoys the luxury of protection against weather and pilferage, the average saving on the total cost ranges from 10% to 20%. In addition there are the valuable benefits of phased completion combined with an individually designed interior.

In contrast to the self-sacrificial 2000 - 2500 hours of the building kit house, the average time to complete the house is about 450 - 500 hours. The "Alpine" support and advisory service together with a "hands-on" immersion course should give the owner-participant the required impulse to start doing and to stop worrying.

In summary:

> "As per the official BBH information the share of self-help houses was 38% in 1980. A questionnaire survey of the magazine "Bauen" confirmed: when readers were asked what and how they were going to build, a total of 40.7% named the self-help approach." [42]

Complete-it-Yourself house guidelines are available from the BMF to owner-participants, The guidelines, prepared by a study group of experts, regulate the scope of self-help participation, construction management, legal position, financing, guarantees and insurance. It is interesting to note that the guidelines define a "Complete-it-Yourself" house as a weatherproof, lockable building which has to conform to the same standards of quality as a 100% manufactured house (Fertighaus) and precast basement (Fertigkeller).

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[42] Ibid, p. 6

The building regulations specifically state that the ...

> "commissioning of an architect by the owner is required for purposes of submission for a building permit, utilizing and completing the plans and documents as supplied by the manufactured house producer and for the taking over of the construction management function." [43]

As to the position of the lender, the guidelines, under the chapter on financing state ...

> "The financing and loan limits are not essentially different from a 100% manufactured house or conventionally built single family dwelling." [44]

The financial institutions require that the producer delivers a weather-tight, lockable and well-constructed house. The basis for lending is defined as the cost of the serviced lot and house, the self-help amount and related and financing costs. The architect is to detail the total cost and together with the owner determines the type and scope of the self-help work to be undertaken.

Similar to applications for payment in stipulated price contracts in Canada, the lender approves payments on percentage of completion values as certified by the architect.

> "The payout of partial loan amounts for materials not yet used is only possible if the already existing building substance justifies a corresponding payout." [45]

In the matter of warranties and guarantees, the "Complete-it-Yourself" house is, as a rule, treated like a 100% completed house.

V. Skills and Problems

Cash, self-help equity and, most important, financing define feasibility.

> "For all practical purposes, getting your loan is the most important step and the most crucial in building. No money, no house."[46]

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[43] BMF Ausbauhäuser Guidelines, July 1982, p. 6

[44] Ibid.

[45] Ibid.

[46] Carl Heldman Be Your Own Contractor:, Charlotte, Vt., July 1982, p. 3

By classifying self-help as capital and as part of the down payment, a symbiotic relationship between financing and skills is created. The lender has to be aware of this. There is also a skill and construction method relationship as the choice of solid masonry versus lighter frame is critical to the owner's time and physical strength estimate. Given a strong desire to own a home, skills can be acquired but even the best self-help guidelines offered by the producers seems not enough in the way of hands-on risk coverage. What is more effective is the continuous advice of a building expert who is a representative of the firm where the kit house or Complete-it-Yourself house was bought. However, irrespective of this service the lender's financial interest is best protected by tangible evidence of skills. The Alpine Company, by offering a short, practical skill development course seems to be aware of the risks associated with owners' skills but most of the other firms do not offer such programs.

By contrast, there are in the United States approximately 30 owner-builder schools that offer hands-on training in construction skills and a fair measure of energy related construction theory. According to the "Popular Science" directory (May, 1983), of those schools specializing in new house construction, all were teaching one (or both) of two basic construction methods - timber frame and post and beam. Eighteen responses in the form of course details, technical and publicity material underlined the North American advantage of having to deal primarily with one structural material, namely wood, and only two main building systems, the timber frame platform and the post and beam system. By contrast, Germany and France seem to be still in a technical transition period and stone and masonry are still considered by many older owner-builders to be the best investment over time. Only recently has light weight wood frame been gaining ground. The extensive promotion of timber frame construction since 1960 in France, Holland and Germany by the Council of Forest Industries of B.C. also gave additional

momentum towards lighter and easier building methods.

In these countries the variety and sometimes the technical complexity of the masonry or wood frame systems offered on the market often seems bewildering if not irrational. In Germany, the owner-builder has to select a house in the hope that his particular construction system allows the desired level of participation. For the lender also the great number of building systems makes total appraisal more difficult and it is thus the more remarkable that such liberal front-end financing of skills is so well established.

In the U.S.A. two owner-builder schools, The Shelter Institute and The Cornerstone School in Maine, both well established and widely known due to extensive media coverage were selected in order to find out more about skill training and financing. Patsy Hennin, co-owner of The Shelter Institute explained that in cases where former students needed financing, completion of a Shelter Institute course was instrumental in the granting of an owner-builder loan.

Dale McCormick, who teaches at The Cornerstone School, also mentioned that most graduates like to be financially independent but in cases where financing was needed the course proved invaluable.

Both schools stressed the significance of a complete presentation package when it comes to the application for a mortgage. Financial institutions are also impressed by the ability of the owner to act as construction manager. By employing vigilant construction management techniques, approximately 20% of total costs can be saved.

A review of the owner-builder programs shows that this specialty is not generally listed. However the owner-builder centre in Burbank, California, offers pre-construction, and, owner as contractor seminars, complemented by estimating and construction financing sessions.

Lenders in North America traditionally prefer the owner-contractor

approach to owner-participant self-help projects. Some conservative lenders prefer the owner to enter into a contract where a licensed general contractor acts as the owner-participant's construction manager for scheduling, cost control and sub-contracting. Thus construction management as part of the skills package seems essential when applying for a loan. A substantial reduction of risk, especially in the modern technology and cost control sense is now possible especially since some owner-builder schools such as Cornerstone offer small-builder oriented computer courses.

Any experienced lender also knows that in the risk and problem area, self-help - as healthy as it ideally could be - may also be a health hazard. Even very seasoned builders find the building process with its built-in stress potential, demanding. Delays, wrong deliveries, job-site hopping sub-contractors, weather, change order upon change order, faulty plans, inspections and red-tape add up to a monumental challenge. Very often owner-builders underestimate the required physical energy, the necessary psychological endurance, the skill demands, the unforeseen difficulties due to lack of site experience, or just bad luck. As many activities overlap on a small self-help project, public relations and organizational talents are a prerequisite. If there are none, the problems will not be conquered but will conquer the owner.

If self-help time demands are incorrectly estimated or the owner's employment conditions change, or just interfere, and the owner's work share cannot be delivered on time, then the hiring of sub-contractors on a short term basis is often necessary and costly.

Not to be underrated is the fact that nobody guarantees the self-help work input. Due to the interrelated work tasks, the owner's faulty workmanship may affect building trade guarantees. Most German "Save-to-Build" brochures stress that not even the best planned project can eliminate the

sickness and accident risk. In a self-help venture the consequences, both personal and financial, are especially grave as the self-help component has to be replaced unless relatives, friends and neighbours take over. In this context it should be recalled that in the German model the helpers and participants are automatically insured against accidents and, in the case of publicly favored or tax-exempt houses, the owner is also accident insured on a fee-free basis with the local municipality or county absorbing the cost.

Although unpaid help can substantially reduce total completion time and may be of great psychological value, nevertheless ...

> "When it comes to promises of help, a measure of skepticism is indicated. While there might be an honest desire to help, will it weather the daily demands on a routine basis?" [47]

Here especially the lender has to evaluate very carefully if help by relatives, for example, may be a reliable basis for calculating the lending value of the self-help share. It should also be noted that under no circumstances may this "volunteered" contribution be remunerated. As much as the help of friends and relatives is officially welcomed, the paid "moonlighter" is not government favored. The German law against Schwarzarbeit (moonlight labor) regulates against this phenomenon quite decisively.

Self-help owners in Germany and neighbouring jurisdictions know fully well that one can save considerably by employing moonlighters and in the case of occasional use up to 40 hours, the unofficial inclination is to look the other way. But in the case of a large moonlighting share the owner cannot overlook the penalties and fines as well as other risks.

> "There is no guarantee on work done. One cannot list these labor or material costs without an invoice in the financial plan and, if applicable, these costs cannot be used for tax-exemption purposes. Only if an invoice or receipt is available can the cost be claimed."[48]

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[47] Baubehörde-Öffentliche Bausparkasse, Hamburg 1980, p. 15

[48] Halding-Hoppenheit, Mein Haus, Meine Wohnung, Munich, Zürich 1978, p. 130

Also, any ambitious self-help effort over an extended period means stress for husband, wife and children. Tolerance is indispensible.

> "Everything revolves around the building site; there is no time for anything else. Before starting the project the situation should be discussed and evaluated together with all family members." [49]

Some of the above risks, arising from potential problems, are also emphasized in self-help guides, as referred to, and as published by major "Save-to-Build" institutions.

Finally, in this context, a typical recommendation:

> "Loan applications with an estimated very high self-help share (over 30%) are to be appraised especially critically both as to description of work and skill potential for doing the work!" [50]

VI. Self-Help: A Timely Aid to Housing

Self-help as a concept is politically and socially attractive and most governments - left or right - seem to agree. Nonetheless, deep political conviction is required from any government determined to make "self-help" a significant market component in the total national housing production. Political expediency alone cannot be the reservoir of action even if timing seems right, as in Canadian housing. To bring self-help housing into focus and to eventually make it workable, political will characterized by strong legal and financial support is mandatory. A government also has to be prepared to face attendant risks, especially during the start-up phase. The market must be tested and the political credo must be in place to overcome the early difficulties in what potentially could be a substantial housing market as in the German case.

In Germany, even with the handicap of a grave shortage of building lots, of the total 68,548 single family dwellings constructed in 1980, 38% were

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[49] Der Selbstbau, Munich 1980, p. 32

[50] Baubehörde-Öffentliche Bausparkasse, Hamburg 1980, p. 25

"self-help". However, across the Rhine in neighbouring France the new socalist government does not sponsor home ownership in the form of varied self-help assistance. As in Germany, la maison individuelle continues to be the greatest desire of the majority of French people but ...

> "The high housing costs, taxation and the less self-help oriented manufactured housing industry makes for a rather depressed market. For example, Okal, the largest German house manufacturer, recently gave up production in France due to disproportionately high taxation which, since April 1983, brought about a near demise of the single family housing market in France." [51]

Traditionally in France there is a strong distinction between the government-aided sector and the private sector. Also the French housing saving scheme, in the medium term saving intent,approaches the German equivalent but is primarily designed for lower income groups.

The French owner of a maison individuelle, by model comparison, seems unduly punished by a taxation system whereunder real estate, by its very visibility, becomes a sitting duck for a multitude of taxes. Every form of real property is directly, or indirectly, taxed ...

> "property taxes (impôts fonciers), occupancy tax (taxe d'habitation, estate tax (droits de succession), capital gains tax (plus-value), wealth tax (impôts sur la fortune) and so forth." [52]

This broad brush-stroke comparison of the political attitude vis-a-vis single family ownership underlines that conditions and problems in only two of the two dozen O.E.C.D. member countries are <u>primarily dependent upon the state of political housing thought</u>.

As matters now stand, the primary concern of the Canadian government still is social housing.

In Germany the relative inefficiency of publicly initiated housing

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[51] <u>Bauen und Fertighaus</u> "Retreat From France" - Nov.Dec. '83, p. 14

[52] J Gerson, F. Vraissaert "<u>Le Guide du Logement</u>" Paris 1983, p. 23

was acknowledged without becoming a political issue. But in compensation for a measured retreat from social housing the home ownership idea was given new impetus, followed closely by the active self-help concept as costs of housing continued to rise.

Looking at Canada's most recent past - can there be home ownership withous sweat? The A.H.O.P. scheme's basic goal was home ownership. In retrospect it is easy to see that a medium term "Save-to-Build" program would have avoided the easy low down-payment and delayed interest dilemma. In cases where the down-payment was not sufficient, self-help financing would have established a strong emotional tie to the house which inevitably results from laborious effort and sacrifice. Would the walking away from the house, when higher interest and recession took their toll, have been so easy?

But aside from speculation, there are these similarities between the German and Canadian housing policies, most particularly the withdrawal from active building involvement in social housing in favor of tax-exemption schemes, shelter allowances and mortgage escalation protection borne out of the Canadian government's concern ...

> "for the provision of a stable and secure interest rate environment for home owners." [53]

Due to the longer term financial approach, Germany still seems to be in the lead but recent interest subsidy was also required to stimulate. The great number of private and public depository institutions specializing in second mortgage lending - through their privilege credit structure - tend to protect the market against short term fluctuations ensuring a relatively steady flow of funds into construction. As every second household possesses a "Save-to-Build" contract the stabilizing effect of a fixed-rate supply of building funds is considerable. The fact that all financial

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[53] Financial Post, Dec. 3, 1983

"Save-to-Build" institutions now offer complete house financing plans seems sufficient to tempt enough people to take the plunge, often on a self-help basis, with the regulatory system assisting and rewarding the owners' effort.

Longer term thinking also applies to the German pre-fabricated housing industry. As housing is cyclically sensitive, the march from the building site into the house factory is not easy because of the long-term investment required. To make this necessary transition less painful, government legislation has to march with it. Sometimes the government must shoulder increased risks to build confidence such as in the German ruling of Feb. 1, 1983 that even house building kits, within the scope of the special program, are in the case of interim "Save-to-Build" financing schemes considered to be equal to 100% completed houses.

The bottom line is, without question, a working partnership between government and the housing industry, each willing to carry a large measure of responsibility in related spheres of action. Over a period of twenty years this partnership brought tangible overall benefits. Some are -

- A well directed legislative and regulatory support system as drafted in close cooperation with "factory floor" professionals.
- An Association (BMF) which not only represents, lobbies, and informs but is also very much concerned with:
  - . factory floor quality control to give official protection to purchaser and lender alike.
  - . the publication of guiding technical and construction management standards for the owner-participant house purchaser.

- liaison with other specialized associations such as the BBH which is concerned exclusively with the "building kit" type of self-help house.
- the establishment of manufactured model home exhibitions (presently in Wuppertal, Bad Vilbel, Stuttgart – Fellbach and Munich where approximately 300 houses, 100% completed and furnished, or to be completed, are displayed together with pre-fabricated basements, accessory buildings, inside/outside swimming pools, and last, but not least, atomic shelters!
- the considerable image improvement of factory-built modular housing with subsequently increased potential for market growth.
- a growing potential for less physically demanding and risky owner-participant involvement through the modular principle.
- a more stabilized building employment situation due to weather protection and resultant timely delivery.

D. FINAL OBSERVATIONS

Both in the United States and in West Germany the workability of self-help housing in combination with a well organized and promotionally effective factory housing industry is a fact. As political thought emerges from national identities the regulatory and technological approaches differ from country to country. But the oustanding common feature of having most of a house built in a factory is a steadily expanding concept of far-reaching implications for future housing policy.

Already the news media leave no doubt that Canada lags behind with some critics implying that lack of government assistance is the cause of this technological lag. But government assistance, although a prerequisite for success, is not a sufficient condition as evidenced by the Canadian government's pioneering role in prefabrication in the 1960's. In retrospect, critics were justified in commenting that without in-depth marketing, this technological lead (including wood frame or concrete module options) could not be converted into meaningful lower cost production as there was no product demand. On the risk side the government had assumed too many entrepreneurial functions and had not formed a partnership with industry thus making it particularly vulnerable.

Above all, the time was not right for sponsorship of "housing from the factory" as a booming construction industry was producing a competitive product. However, by 1980, the rapid increase in costs combined with higher interest rates had generated a renewed urgency to question the efficiency of the whole house building methodology. The time was right for a reevaluation of factory house production. Now it is not so much a matter of pioneering but of catching up.

As matters stand it is hoped that past technological pioneering mishaps have not resulted in a broad front retreat from risk taking even in the moderate form of self-help building incentives. Nevertheless prior to any final considerations, equalization over the socio-economic subsidy spectrum has to be the housing policy prerequisite. Sometimes "low income housing policy" develops an imbalanced administrative momentum of its own by depriving the supply side as characterized by individual saving and working towards homeownership initiatives.

Thus in final operational reference to how German housing policy provides for equalization of subsidy it is significant that -

> "Wohngeld" (shelter allowance) is universally but strictly administered on the rental side as "Mietzuschuss" (rent supplement) and on the ownership side as "Lastenzuschuss" (carrying cost subsidy) provided that the rent/income ratio or the carrying cost/income ratio qualified the tenant or home owner.

With shelter allowance under active consideration in Canada support of the owner builder/participant should be included on the above model basis as it is the most modest form of home ownership on the production, or asset formation side.

In the Canadian context, strategy suggests that a measured retreat from active social housing involvement be compensated by regrouping of support forces and their application in lower risk, but higher value areas such as self-help housing. So in the trust that the great North American heritage of shelter building by hand is not only alive but, with timely political and technical support, can be made to prosper, the following policy evolving considerations are advanced:

1. To offer fixed interest rate, short term financing to qualified self-help owners over a maximum of a two-year building and completion span.
2. To establish a medium term registered home ownership saving plan with a fixed interest rate over 8-10 years and special incentives offered to the self-help owner. The plan is envisaged to be indexed to construction costs on a regional basis to maintain its essential building orientation. The RHOSP's possible adaptation cannot be assessed at this stage.
3. For the government to establish a working group together with the factory built housing industry which in its operational and promotional effectiveness might resemble the U.S. Home Manufacturers Council and also the German BMF Association approach.
4. For the working group to establish financial, technical and quality/warranty prerequisites to eventually also benefit the self-help owner on a participant basis.
5. For the working group to develop the promotional and technical framework for factory housing demonstration areas together with self-help house alternatives. Admission fees and related cash flow sources should eventually render the exhibition self-supporting.
6. To establish a pilot project in the form of a Canadian Owner-Builder School to be self-supporting within the physical and technical opportunity scope as offered by a suitable secondary educational institute. To be guided initially by the U.S. owner-builder school experience with a construction management component to be integrated with the technical and hands-on skill components of the proposed course.

7. For the working group to give notice of lending risk reduction based on "Certification of Skills" as successfully attained in the course.
8. To subsequently induce lenders to enter the self-help equity market on the basis of reliable estimates, guidance and quality/warranty assurances as provided by qualified owner and the factory housing association.
9. To offer investment incentives to progressive and interested "stick-builders" to induce them to profitably participate as "special-site builders" in the factory housing approach.

Over the near-medium term this action should result in:

- Rationalized production methods, higher quality and competitive pricing.
- Stabilized building schedules and substantially lower site cost for the specialist builders or future owners.
- Efficient site assembly and interior completion.
- Stabilized in-plant labour conditions with higher productivity and skill/technology levels.
- Substantial lessening of an unacceptable off-season construction labour unemployment rate currently between 23% to 25%.

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APPENDIX

Ref. No. 1

Paragraph 36 II.WoBauG — Eigenleistung durch Selbsthilfe
—— Production through Self-Help

1. Should the production on the whole or in part be rendered through self-help, so is this fact regarded as confirmed, if in accordance with a written declaration of a supervisory consultant or the municipality, the certainty exists that all self-help will be rendered in accordance with the scope as set out in the financial plan.

2. Included in the calculation of self-help is work done by the owner, his family and by others on an unpaid or mutual help basis.

3. The value of self-help is defined as the amount saved in reference to the usual cost of a building contractor.

APPENDIX

Ref. No. 2

Provincial Building Authority II.WoBauG.

Building Laws and Regulations

Paragraph 94 (as per law of 1965 11 26 as amended 1974)

Building Documents - Submission - Authority

3. Authority to submit documents for a building permit is given to a person who (i) is entitled to the professional designation "Architect" or (ii) as a graduate of the architectural, civil engineering or construction engineering faculties is entitled to the professional designation "Engineer".

In addition to the qualifications as give under (i) and (ii) above a three year long practical experience in the respective field is required.

Paragraph 94a

4. gives authority to submit documents for a building permit for single family dwellings, or detached houses which include one self-contained apartment, to a master workman of the masonry, concrete, reinforced concrete or carpentry trades provided he has completed his three years of practical experience.

APPENDIX

Ref. No. 3

Legally Required Accident Insurance

With the exception of professional trades and contractors all other helpers must be named and insured as per the owner's responsibility defined in paragraph 539 of the state insurance statute (RVO). In the case of self-help which does not fall under the subsidized or tax-exempt classification of the II.WoBauG. the local construction labor union functions as the insurer.

For subsidized/tax-exempt housing projects on a self-help basis the insurer's function is taken over by the municipality.

Coverage applies to persons who do self-help work in connection with construction of a single family dwelling, condominium apartment or cooperative condominium in cases of publicly subsidized or tax favoured accomodation. (paragraph 539.1, No. 15 RVO and paragraph 657.1 No. 8 RVO).

Self-help also applies to all site work (including demolition) and other related community buildings. Preconditional to the insurance protection is that the value of self-help work must represent at least 1.5% of the total project cost. Insurance protection includes the owner, family members and persons who work without monetary compensation or on a mutual help basis. The owner is insured free of charge.

Financing Proposal
Finanzierungsvorschlag

alpine ISO-span — Building Kit House

Personal Data
Persönliche Daten

Name: Saumeles — Vorname: Heinrich — geboren am (date of birth): 19.5.45
Name: Saumeles — Vorname: Maria — geboren am: 28.8.48
Straße (street): Beukerstr. 15 — Wohnort (domicile): Alberstadt — Telefon:
Familienstand (family status): verh. 12 Kinder (married / 2 children) — Jahreseinkommen brutto (gross annual income): 40.700,- / 10.900

Baukosten Building Cost

Grundstück	Total site	DM 75.000,-
Baukosten lt. Einzelaufstellung	Cost of Construction as detailed	DM 297.800,-
Baunebenkosten lt. Einzelaufstellung	Landsc'g + Development Cost	DM 54.350,-
		DM 427.150,-

Eigenmittel Owner's equity

bezahlter Bauplatz		DM —
Bausparguthaben	"Save to Build" Equity	DM 30.000,-
Barmittel	Cash	DM 42.000,-
Eigenleistung lt. Einzelaufstellung	Owner's work share as detailed	DM 98.100,-
		DM 170.100,-

Fremdmittel Funding - other sources

Mittel	Zins % interest	Tilg. % princip.	Ausz. % paid out	Zinsen DM (actually) interest	Tilgung DM principal	Kreditbetrag DM credit amount
I. Hypothek (1. Mortgage)	8 Jahre fest (8 years fixed rate) 6,0	1,0	93,0	13.080	2.180,-	DM 218.000,-
II. Hypothek						DM
Bauspardarlehen (Save to Build Loan)	16 Jahre fest (16 years fixed rate) 4,5	4,5	98,0	2.066,-	2.066,-	DM 45.900,-
Zwischenfinanz. (Interim financ.)						DM
Bankvorausdarl.						DM
Arbeitgeberdarl. (loan by employer)	15 Jahre fest (15 years fixed rate) 3,5	5,0	100,0	350,-	500,-	DM 10.000,-
Landesmittel						DM
						DM
Summen (Total)				15.496,-	4.746,-	DM 273.900,-

Credit paid = Kredit-Auszahlungssumme = DM 257.740,-

Steuerliche Ertragsrechnung Tax Rebate

5% (CCA) Abschreibung aus	DM 223.060,-	CCA	DM	11.153,-
..... Abschreibung aus	DM		DM	
Schuldzinsen und/oder	interest		DM	15.496,-
Mietwert (equiv. rental value): 172 qm	X 3,50 DM x 12 Monate (months)	deducted %	DM	7.224,-
steuerlich abzugsfähig (tax deduction)	Von bisherigem zu versteuerndem Ek 37.800,-		DM	19.425,-
Jahressteuer vorher DM (previous tax)	6.474,-	Jahressteuer nachher aus 18.375,- (new taxable income)	DM (new tax payable)	1.562,-
	from taxable income →	deprec. + interest deductions		

Berechnung der Belastung Calculation of carrying Cost

Jahresaufwand für Zins und Tilgung (Annual cost of interest + principal payment)		DM 20.242,-
Jahresertrag aus ersparten Steuern	80% als Freibetrag möglich	DM (tax saved) 4.912,-
Mietannahme 2.604,- + Aufwendungsdarlehen 3.456,- (rental income + degressive annuity loan)		DM 6.060,-
		DM 9.270,-
Nettobelastung jährlich (net carrying cost (annually))		DM 772,50
Nettobelastung monatlich (monthly) net carrying cost		DM

↓ self-contained apartment - | ↓ see: ref. page 10 of report

Summary - Building Kit House

IV. Zusammenstellung

Site / 1. Kosten des Baugrundstücks	DM 75.000.	DM —.	DM 75.000.
Constr.Cost/2. Reine Baukosten	DM 213,200.	DM 84.600.	DM 297.800.
Landscp. 3. Außenanlagen/Baunebenkosten & Development Cost	DM 40.850.	DM 13.500.	DM 54.350.
	DM 329.050.	DM 98.100.	DM 427.150.

Die reinen Baukosten nach II. ergeben bei 875 cbm umbauten Raums einen Preis von DM 340,- je cbm umbautem Raum, der den örtlichen Verhältnissen entspricht und bei Realisierung entsprechend den Plänen und Ausstattungsfestlegungen eingehalten werden kann.

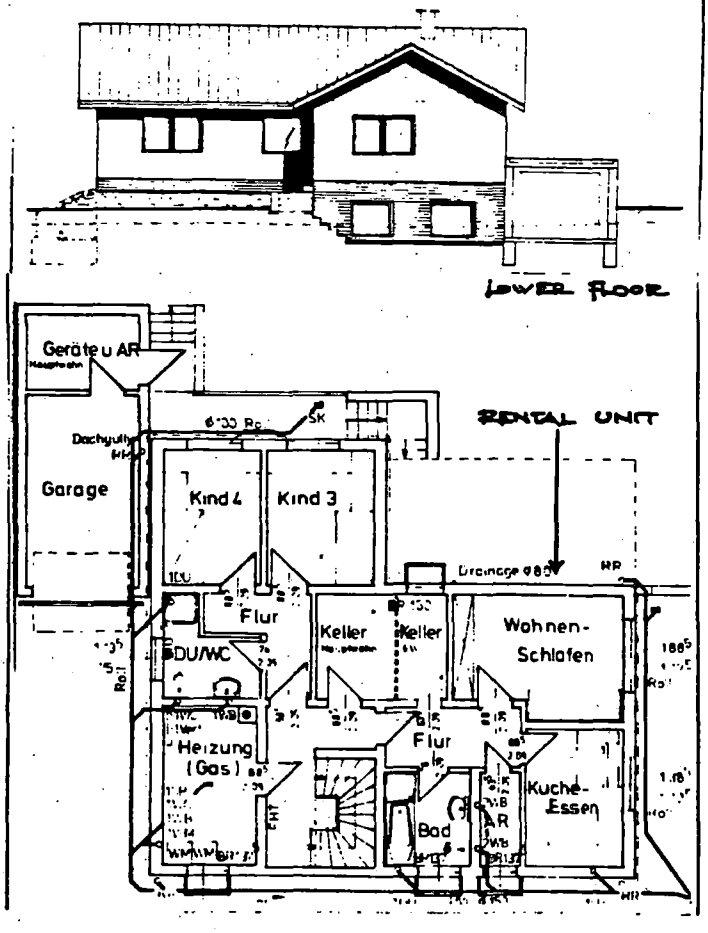
Construction Cost converted = $ can. 73 p. sq. ft. at 1 $ can. = DM 220

V. Eigenleistungen Owner's self-help share

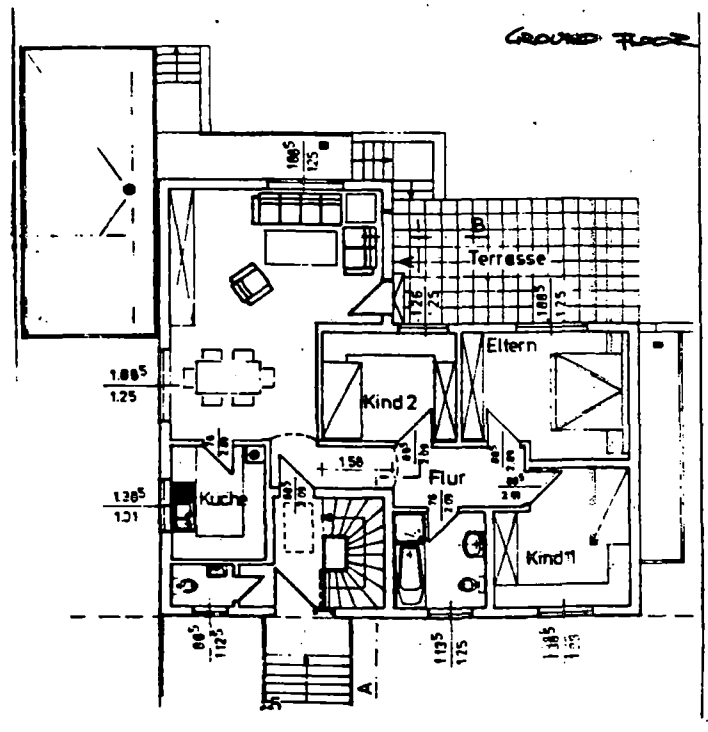
The self-help work will be undertaken by owner, relatives and friends, without/with remuneration - by persons as listed below:

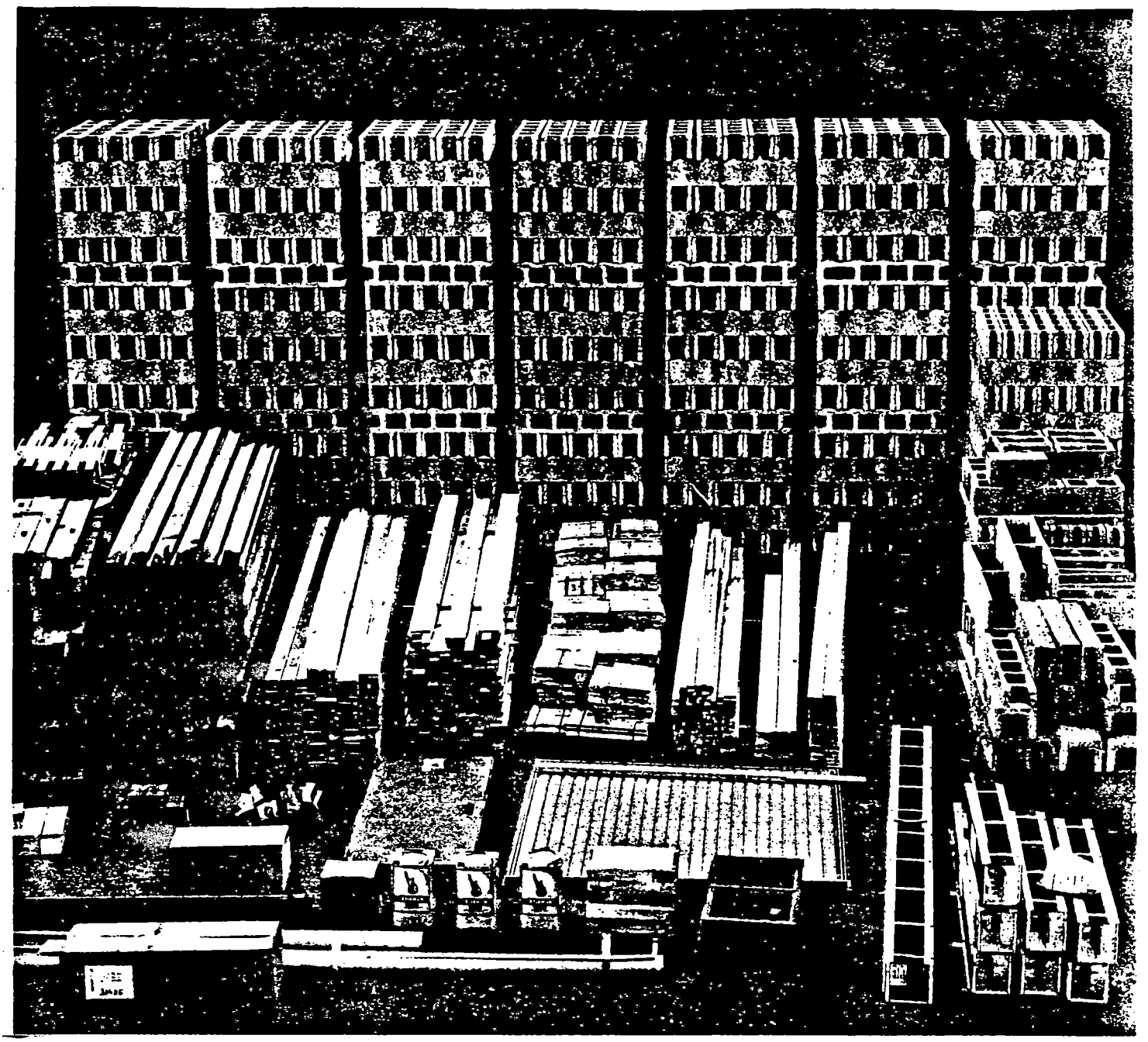
Die Eigenleistungen werden in Selbst-, Verwandten- und Bekanntenhilfe ohne und gegen Vergütung von den folgenden Personen ausgeführt:

Name Name	Beruf Profession	Unterschrift Signature
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....

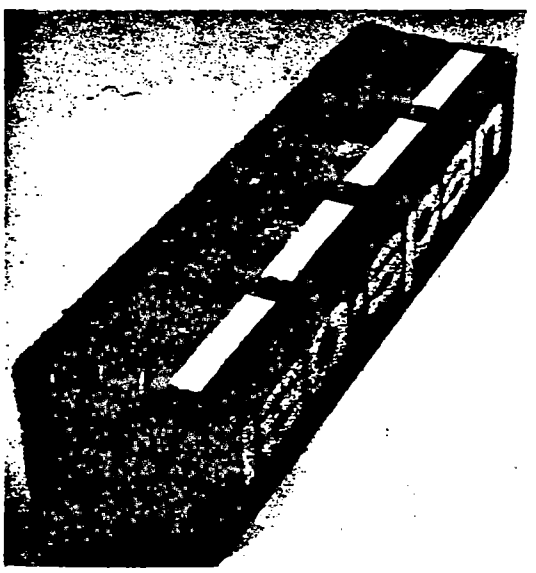


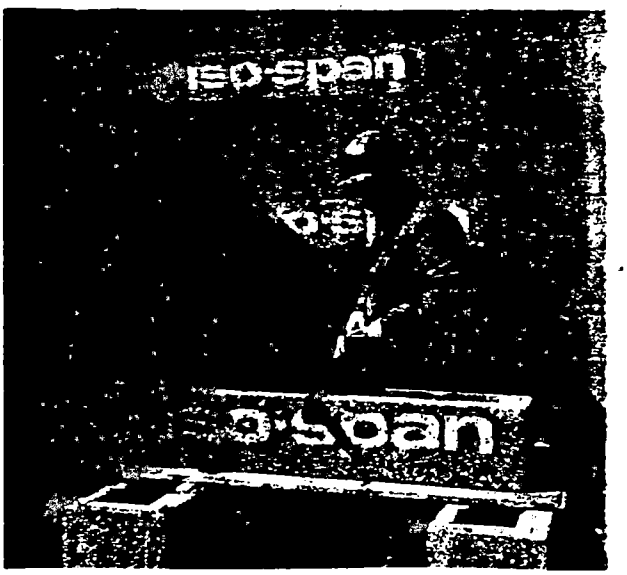
The Alpine - Building Advisor





Many owner-builders use this block. It is 1.20 m long, economical to lay - a wood-cement mix with no mortar joints. Water repellant with additional insulation. Doors, windows, heating, etc. not shown.





alpine iso-span

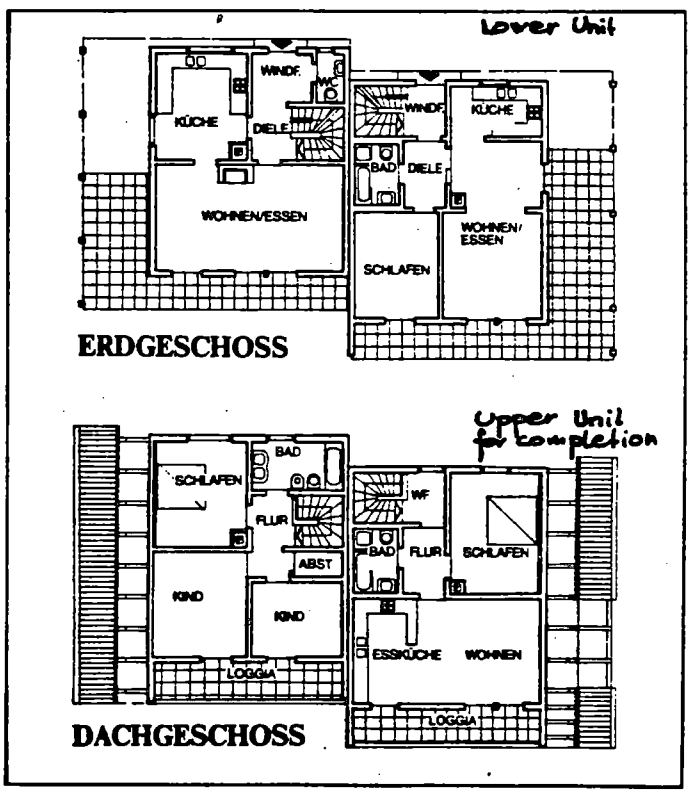
BUILDING KIT

Kleine Häuser groß im Kommen (small houses come on strongly)

Als attraktives Doppelhaus stellen sich hier die Typen R 96 und R 103, so die trokkene Bezeichnung, vor. Die Häuser wurden aber so konzipiert, daß sie auch einzeln gebaut werden können. Und auf Wunsch läßt sich jeweils im Dachgeschoß mühelos eine Einliegerwohnung einplanen.

Fotos: Steffen Beyer

Attractive Double Types R 96 and R 103. Can be built separately. Rental apartment to be completed easily in upper floor.



Sample

Financing Plan

Cost of Lot	80.000 DA
Construction Cost	270.000
Landscap'g/Connections	20.000
Developm't Cost, incl. fin.	40.000
Total Creation Cost	410.000 DA
Owner's Equity (cash)	-25.000
Owner's self-help share	-45.000
Required amount =	340.000 DA

Basis: 3 person household with 80 m² of subsidy floor area

Monthly debt service	2267 DA
Tax Saving (in first 8 years) * approx.	-667
Degressive Annual Loan	-224
Rental Income from upper floor	-250
Monthly debt service - adjusted	1126 DA

* Tax Saving calculated on basis of 50000 DA family income as per § 7b EstG.

** Subsidy Basis

1.-3.	year	2,80 DA/m²
4.-6.		2,10
7.-9.		1.40
10.-12.		-.70

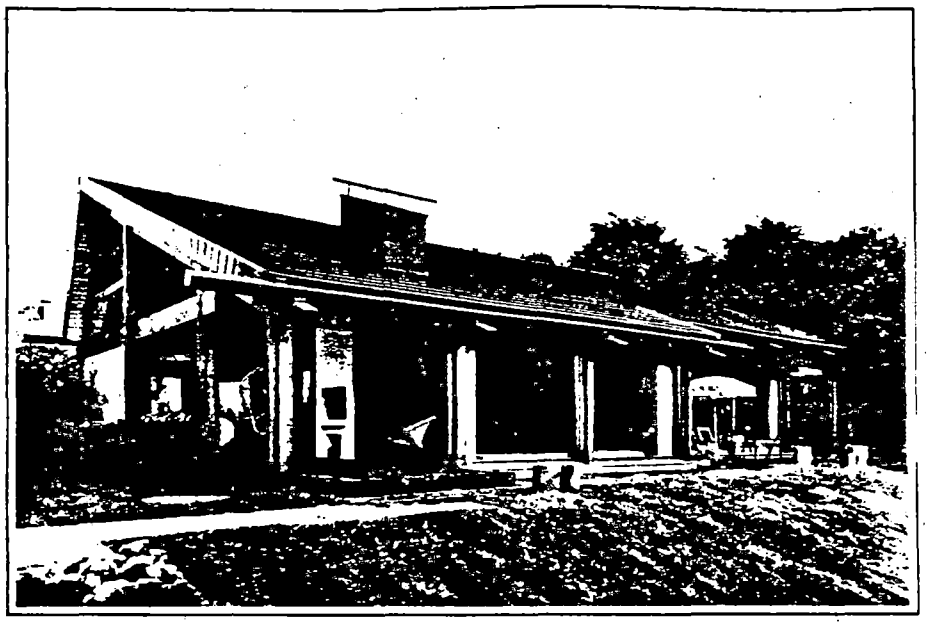
Total Loan after 12 years 20160 DA - Repaym't from 15th year - presently - 6% interest, 2% principal.

"Complete-it-Yourself" House

PLANEN – BAUEN – WOHNEN

Platz-Nummer G 8
Modul-Haus Typ M 176 S
Wohnfläche 188,15 qm

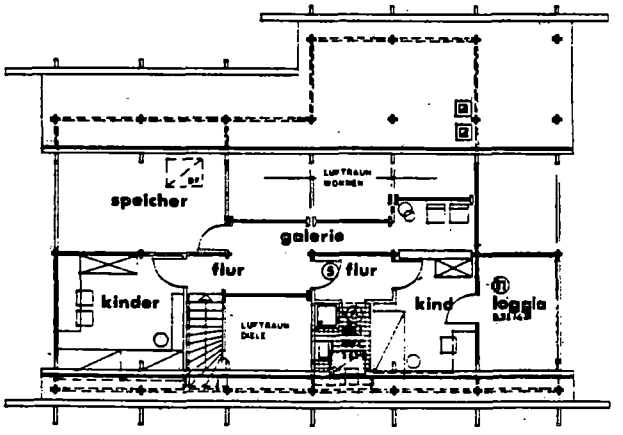
Exhibit-№ G8
Modular-House Type M 176 S
Floor Area 188.15 m²
Roof slopes available 30° or 45°.



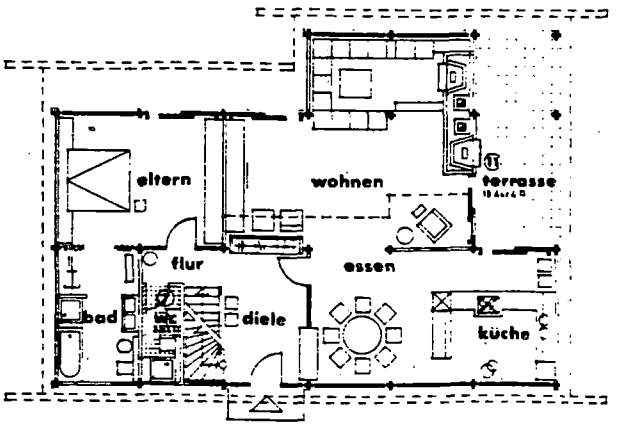
Lower

UPPER

1 : 250



ERDGESCHOSS



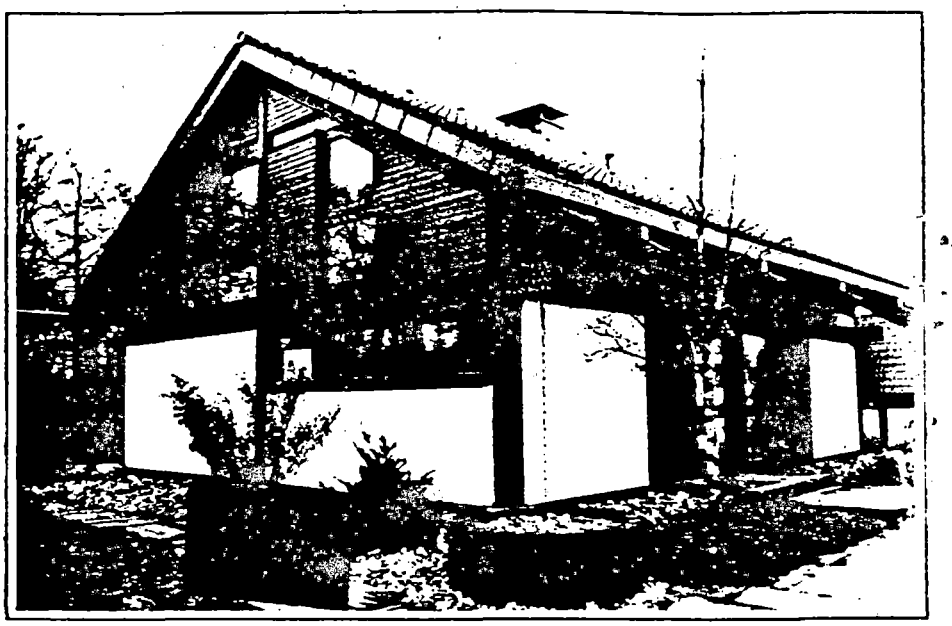
DACHGESCHOSS

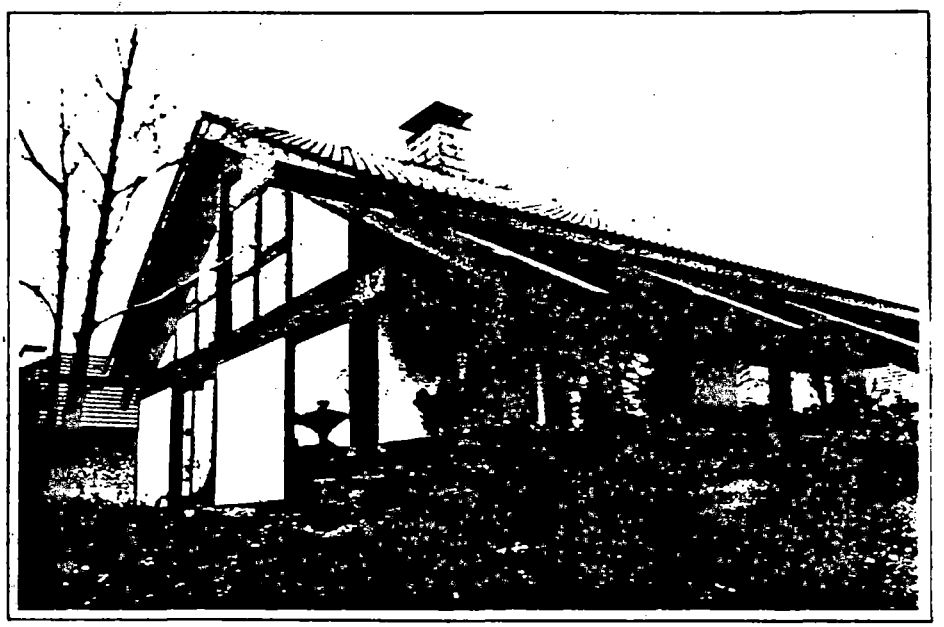
WUPPERTAL — TRADE EXHIBITION CATALOGUE.

PLANEN – BAUEN – WOHNEN

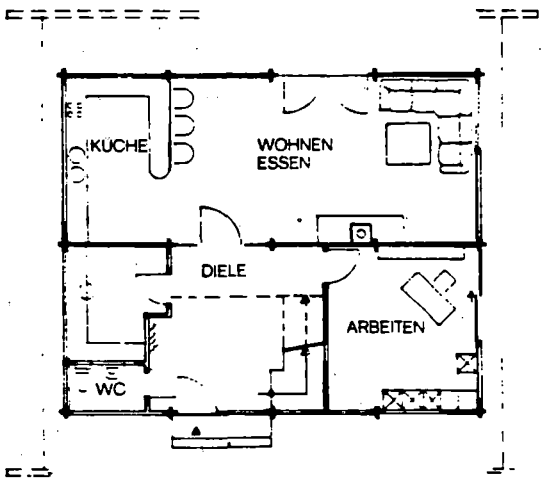
Platz-Nummer G 4
Modul-Haus Typ M 103 S
Wohnfläche 155,22 qm

Exhibit – No G 4
Modular House Type M 103 S
Floor Area 155,22 m²
Roof slopes - 25°, 30° or 45°





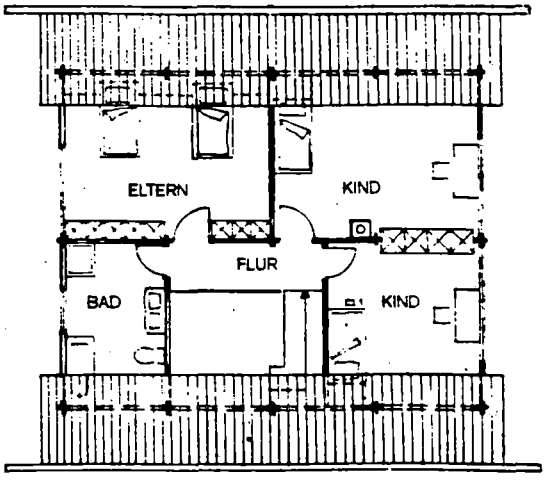
LOWER FLOOR



ERDGESCHOSS

UPPER FLOOR

1 : 200



DACHGESCHOSS