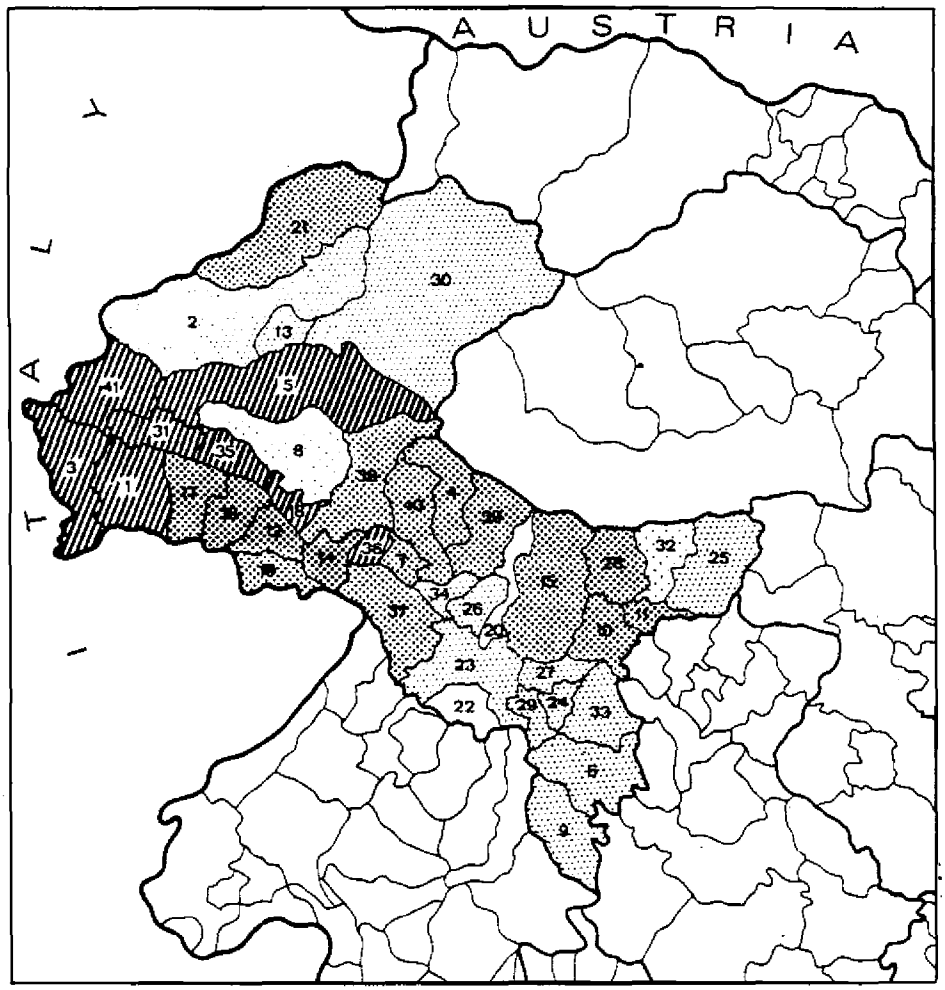


Map 1

Percent of Population Without Shelter, Local Communities of the Commune of Tolmin, Yugoslavia As a Consequence of the Earthquake in 1976

50% and above	2.5-9.9%
30-49.9%	0.1-2.4%
10-29.9%	0%

Source: Damage Survey, 1976.

share of the population which has been aging at the same time [Gosar, 1976]. The dependence of the population upon the land has become weaker. A detailed social demographic analysis of the population among other things, has been presented by Gosar [1976], and a similar analysis has been made for the commune of Tolmin by local communities by Petrle [1977]. Since this analysis shows accurately the complex conditions in the commune of Tolmin we will use the results as a comparative basis for the analysis of the population left without shelter by the earthquake.

The change in population size in the period 1961-1971 and the index of aging, the change in size of the peasant population in the period 1961-1971, the share of the peasant population in the year 1971 and the composition of the active population by sectors of activity, were used as the principle indices of the social demographic analysis. Through these indices the local communities in the commune of Tolmin were divided into types as follows:

Type 1. The areas of high outmigration, declining population, high percentage peasant population and high age structure.

Type 2. The areas with declining population, having a moderately high percentage peasant population and a high age structure.

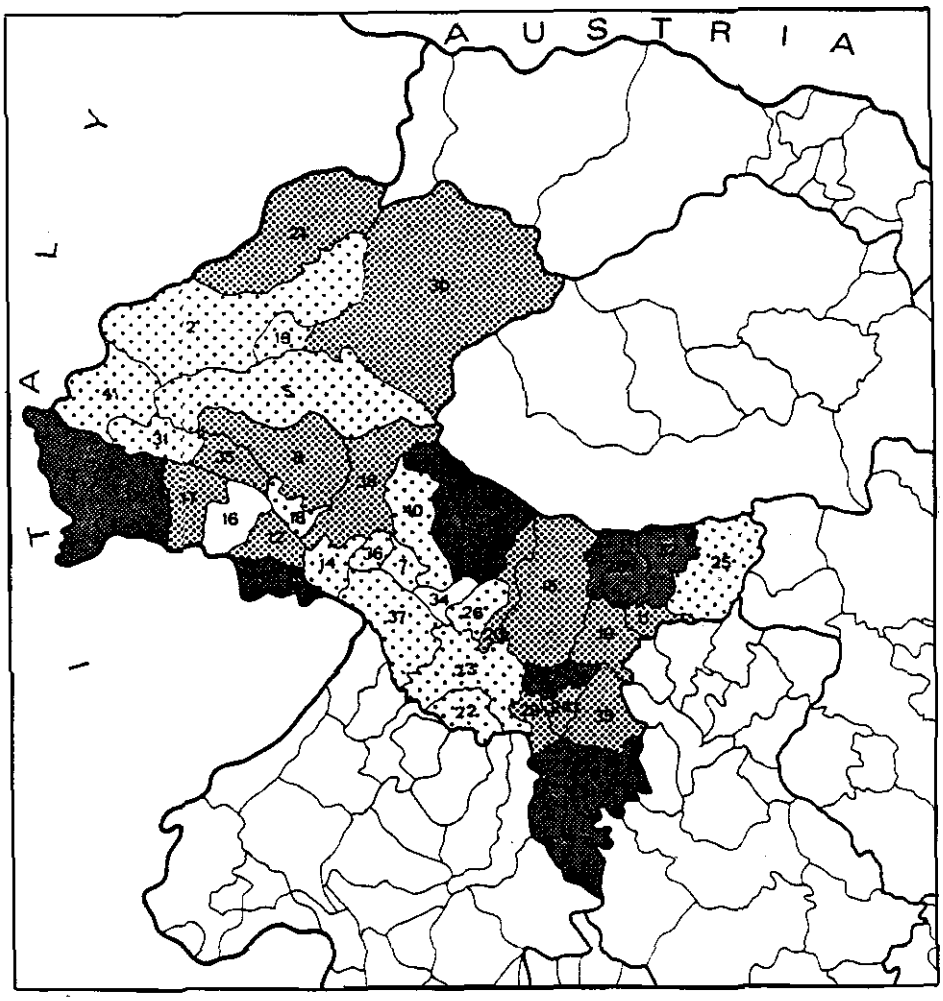
Type 3. The areas with a moderate decrease or a modest increase in the size of the population, a smaller percent peasant population and a high age structure.

Type 4. The areas with increasing population, having a low percentage peasant population and a lower age structure.

The social demographic types are shown in Map 2. We must emphasize the finding [Klemenčič, 1978] that the process of deagrarization after the Second World War was accompanied by a spatially differentiated process of social and economic restructuring of the population. Vojvoda and Tončič [1975] have described the substantial transformation of the mountain-seasonal-pastoral areas. Berginc [1978] has found that the difficult natural and economic conditions forced the inhabitants of the Bača Cleft to emigrate early. At the time of the construction of the railroad through the Bača Cleft the villages above the cleft started moving to its bottom. In addition to a considerable outmigration from the region, intraregional migration was also taking place. This was a characteristic feature of the Upper Soča River Basin as a whole. Population left the more distant mountainous areas in the valleys of the Soča and its tributaries mainly for the principal axis of the concentration of the population, Bovec-Kobarid-Tolmin-Most-na-Soči. However, the movement into this area was not so great as to cause much increase in population, but it is reflected in the more favorable social demographic structure of the places.

Ten local communities in which 13.5 percent of the population of the commune of Tolmin lived in January 1976, which account for 20 percent of the area, are classified as Type 1, having high outmigration, very high percentage peasant population and a high age structure. These are the mountainous areas, most distant from the traffic centers, and include the Breginj Corner, heavily impacted by the earthquake, the Livek area, a part of the Bača Cleft, a part of the Šentvid Plateau, and Trebuša.

There are fourteen Type 2 communities which occupy 43 percent of the area of the commune, and contained in January 1976 24.6 percent of the population. This type has similar characteristics to the first one,



Map 2

Classification by Social Demographic Type, Local Communities of the Commune of Tolmin, Yugoslavia

Type 1 Type 3

Type 2 Type 4

Source: L. Petrle. Ljubljana: Urbanisticni Institut SR Slovenije, 1977.

of which it is a variant. The chief difference is that the majority of the places are nearer to or have better access to employment centers. The two most unfavorable social demographic types comprise together 63 percent of the area and 38 perent of the population of the commune of Tolmin.

The third type, having moderate decrease or modest increase in population size, with a smaller percentage peasant population and with a high age structure, includes 15 communities. These are mostly in the lowland, with better infrastructure. The communities of this group are concentrated around Bovec and Tolmin, including Most-na-Soči. Podbrdo is also included and is the most materially developed community in the Bača Cleft. This group of communities contains the largest share of the population, 41.1 percent, and covers 35 percent of the area of the commune of Tolmin. The areas of this type considering change in population size can be characterized as stagnant and with unfavorable age composition.

The influence of nearby centers, Kobarid and Tolmin, is not strong enough to exert a significnat influence on the social demographic structure of these communities. The local centers are too modest to influence the neighboring communities.

Only the communities of Tolmin and Kobarid have the relatively favorable social demographic structure of Type 4. While these two communities comprised only 2 percent of the area of the commune of Tolmin, they contained in January 1976 20.8 percent of the population.

Similar conclusions about conditions in the Tolmin region were reached by Gosar [1978] through the analysis of the distribution of employment in non-peasant activities, as a force for the transformation of the area through concentration of population and the economy. He emphasizes in particular that outmigration in recent decades should be attributed chiefly to poor transport access which characterizes such areas as: Gorenja Trebuša, the Šentvid Plateau, the Bača Cleft or its hinterland, the Breginj Corner, and Trenta. The main migrations flow radially from the mountainous and poor access areas to the local centers or the main transport line.

The question of the comparability of data used in the social demographic analysis and that used in the analysis of the portion of the population made homeless by the earthquake must be addressed. We have already discussed the differences between the censuses of population for 1971 and 1976 and found they are not great. The most important consideration for comparability is that the data refer to the same spatial unit--the community--and that conditions existing before the earthquake have remained basically unaltered. The technique used to combine the results of the analyses consisted quite simply of adding the two numbers together to produce a combined score and assign the sums to new categories. The most unfavorable conditions in both the analyses were indicated by 1. In the social demographic analysis the values range from 1 to 4, and in the analysis of the population without shelter from 1 to 6.

The two analyses were combined by adding the scores to form new classes designated A, B, C, D. The possible combinations of scores on the two indices that could result in the new combined classifications

are shown in Table 5. The combined classification and score on both indices for each local community in the commune is shown in Table 6 and the location of the communities is indicated in Map 3.

The numerical values of the two analyses and their sums represent conceptual values of the individual analyses. Since the analysis of the shelterless population established 6 categories and the social demographic differentiation of the communities four, the combined score is a more subtle and more accurate representation of the impact of the earthquake, which is of primary interest.

Type A communities were most heavily stricken by the earthquake, and at the same time were those undergoing outmigration and aging of the population, and which had a very high percentage peasant population and a weak age composition. Of the communities within the commune of Tolmin, only those of Breginj and Borjana were of this type. This affirms the very critical conditions after the earthquake in the Breginj Corner, which suffered the greatest damage and also had very unfavorable social demographic characteristics. All other places in the Upper Soča River Basin areas which suffered equal degrees of damage from the earthquake had more favorable social demographic characteristics, a very important consideration in their ability to recover.

The second group, Type B, includes the communities which were in terms of one parameter of the comparison or the other in a more favorable position. They include communities heavily stricken by the earthquake but having more favorable social demographic characteristics. Such areas lay near the Soča River or along the central transport routes but were in the most impacted area. Since these communities were more distant from the epicenter, the degree of damage was somewhat less. In contrast, communities in the mountainous hinterland of the Tolmin and of the Bača Cleft suffered lesser degrees of damage but had unfavorable conditions, because of their unfavorable social demographic characteristics in this mountainous and inaccessible area. Supplying assistance to these places had to be accomplished by helicopter (the Yugoslav People's Army), because of the absence of traversable roads.

Type C includes communities which had a total of 5 or 6 points. On the one hand are communities with the most unfavorable, or next better, social demographic characteristics but considerably less earthquake damage. Such communities are along the Trebuša and in the Bača Cleft, relatively distant from the most stricken area. Nearer to the heavily impacted area are a series of communities in the Soča Valley with more favorable social demographic characteristics or even the most favorable ones (Kobarid, Kamno, Vrsno), which suffered high degrees of damage by the earthquake; 30 to 50 percent of the population were without shelter. They include above Bovec the communities of Trenta and of Log pod Mangartom. Also among them are a group of communities along the lower Idrijca River and on the Šentvid Plateau (Slap ob Idrijci, Ponikve, Pečine, Šentviška gora). The communities of Volče, Dolje and Zatolmin, on both banks of the Soča above Tolmin, have intermediate score on both indices.

Table 5

Possible Combinations of Socio-Demographic Population Without Shelter Indices Scores that Would Result in Various Combined Classifications

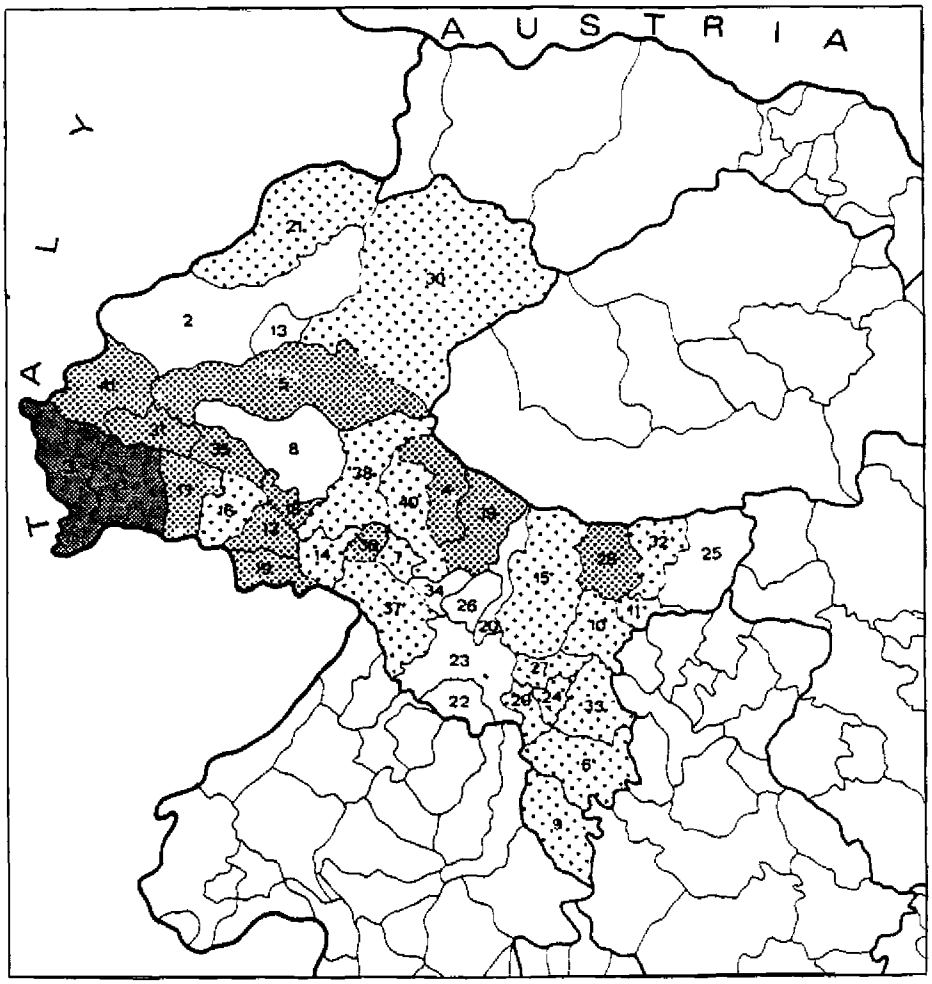
Combined Type	Social Demographic Type	Shelterless Population Type	Sum	Number of Communities
A	1	1	2	2
B	1	2	3	
	1	3	4	12
	2	1	3	
	2	2	4	
C	1	4	5	
	1	5	6	
	2	3	5	
	2	4	6	
	3	2	5	18
	3	3	6	
	4	1	5	
	4	2	6	
D	1	6	7	
	2	5	7	
	2	6	7	
	3	4	7	
	3	5	8	9
	3	6	9	
	4	3	7	
	4	4	8	
	4	5	9	
	4	6	10	

Table 6

Socio-Demographic Index, Population Without Shelter Index, and Combined Category, Local Communities of the Commune of Tolmin, Yugoslavia

Community		Social Demographic Types	Analysis of Population Without Shelter	Combined Score	Category
1.	Borjana	1	1	2	A
2.	Bovec	3	4	7	D
3.	Breginj	1	1	2	A
4.	Čadrg	1	3	4	B
5.	Čezsoča	3	1	4	B
6.	Dolenja Trebuša	1	4	5	C
7.	Dolje	3	3	6	C
8.	Dreznica	2	5	7	D
9.	Gorenja Trebuša	1	4	5	C
10.	Grahovo ob Bači	2	3	5	C
11.	Hudajužina	2	3	5	C
12.	Idrsko	2	2	4	B
13.	Kal-Koritnica	3	4	7	D
14.	Kamno	3	2	5	C
15.	Kneža	2	3	5	C
16.	Kobarid	4	2	6	C
17.	Krod	2	2	4	B
18.	Ladra-Smast	3	1	4	B
19.	Livek	1	3	4	B
20.	Ljubinj	2	6	8	D
21.	Log pod Mangartom	2	3	5	C
22.	Lom	3	6	9	D
23.	Most na Soči	3	4	7	D
24.	Pečine	2	4	6	C
25.	Podbrdo	3	4	7	D
26.	Podljubinj	3	4	7	D
27.	Ponikva	1	5	6	C
28.	Rut	1	3	4	B
29.	Slap ob Idrijci	2	4	6	C
30.	Soča-Trenta	2	4	6	C
31.	Srpenica	3	1	4	B
32.	Stržišče	1	5	6	C
33.	Šentviška gora	2	4	6	C
34.	Tolmin	4	4	8	D
35.	Trnovo ob Soči	2	1	3	B
36.	Volarje	3	1	4	B
37.	Volče	3	3	6	C
38.	Vrsno	2	3	5	C
39.	Zadlaz-Čadrg	1	3	4	B
40.	Zatolmin	3	3	6	C
41.	Žaga	3	1	4	B

Note: The serial numbers indicate the location of the Communities on the maps.



Map 3

Combined Classification by Socio-Demographic Index and Population Without Shelter; Local Communities of the Commune of Tolmin, Yugoslavia

Type A
Type B
Type C
Type D

Source: Table 6.

The last group, the relatively least stricken communities in the commune of Tolmin, Type D, includes areas with both more favorable social demographic characteristics and relatively low degrees of damage. The fine appearance of the group of communities around Tolmin (Tolmin, Poljubinj, Ljubinj, Most-na-Soči, Lom) which is probably the consequence of a generally somewhat better stock of dwellings and a larger concentration of the active population. The same is true of Podbrdo, the most developed community in the Bača Cleft [Berginc 1978], and in the Bovec area (Bovec, Kal-Koritnica), where the impact of the earthquake was surprisingly low in spite of the relative proximity of heavily stricken places, the cause being, probably, that the main fault lies more to the south. This group also includes the community of Dreznica where there was relatively little damage, which has already been dealt with. Several factors seem to have contributed, among them in particular the location of the settlements where the water content of the soil is low. This should be examined geoseismically in a more detailed manner.

The vast changes in the region are reflected in the physiognomy of the settlements. In most cases the new prefabricated houses are on new sites immediately adjacent to the old settlement nuclei. Consequently, the settlements in the most stricken areas have completely changed from their former appearance. There remain only a few houses recalling the old settlement, or the center of the old village, as for instance at Logje, where many houses were repaired using the reinforcement system (ZRMK). In the less damaged areas of Types C and D the transformations of the settlements have not been as radical. The physiognomy of the places retains the former vistas. There have been great geographical changes in living and working arrangements that are still emerging. The revitalization process in impacted places engendered a series of new relationships. In the future we can reasonably expect the revitalization process to influence the social demographic structure of the most heavily damaged areas. Since revitalization is still under way, it is difficult to assess what the effect will be. Similar revitalization measures at Skopje, Banja Luka and elsewhere in Yugoslavia would lead us to expect accelerated general development of the Upper Tolmin and other stricken areas.

The final influences and effects cannot be assessed as yet as the changes taking place in the region are not completed. The earthquake with its effects and the accompanying intensity of post-earthquake activities will be a significant factor in the transformation of the stricken areas. Pak [1978] states that the effects resulting from the earthquake in the stricken region are reflected, primarily, in the following:

1. changes in the physiognomy of the region
2. changes in the economy of the region
3. changes in the population distribution.

All three kinds of effects are closely interrelated.

New prefabricated houses or other new construction have been built mostly in the immediate vicinity of the old villages (Figure 4). When demolished structures were cleared in Breginj an open space was created (Figure 5) where individuals started constructing new houses. The appearance of old villages has been greatly altered. Some villages, such as Podbela, have almost completely disappeared, with only here and there a house to remind of the former settlement. The prefabricated

houses have altered the physiognomy of the countryside, farm and industrial buildings are still missing, new roads are under construction, etc. These vast alterations happened in a very short period of time, within a few months. New social relationships are being established which should not be underrated and to which it is necessary to pay attention. In the new common stables and cowsheds things will not be the same as they were in the past. The traditional life and relationships have been fundamentally changed. This is reflected in changing patterns of migration which alters the characteristics of the population.

In the commune of Tolmin in 1975 social product amounted to 30,135 dinars per capita, and national income 26,599 dinars. National income in the commune of Tolmin was only 64 percent of that of the SR of Slovenia. The damage from the earthquake exceeds seven times the national income in the commune. The estimate of the resources needed for reconstruction in the Soča River Basin and for economic development of the area stricken by the earthquake in 1976 is 4,787,385,000 dinars. This amounts to 6.3 percent of the national income from all the sectors of the economy in the SR of Slovenia in 1975. [The Monthly Statistical Survey...1977]

The economy in the Soča River Basin has been stagnant in recent years because of the low level of investment, the lack of cadres, the configuration of the land, the isolation and inaccessibility, the location along the frontier, etc. This is true not only of the most heavily damaged commune of Tolmin but also of some areas of the commune of Nova Gorica, and because of the recent decline in mining, of the commune of Idrija. It is not possible to restore the effects of the earthquake without creating simultaneously a more stable economic and social position for the population affected by the earthquake. The progress of the region can be ensured only by promoting more rapid economic development. This is a necessary condition of a complete elimination of the effects of the earthquake.

Figure 3

Temporary Housing Soča Valley, Yugoslavia, 1976

Temporary settlements of vacation trailers collected and lent to the population of the stricken areas appeared beside the villages during reconstruction.

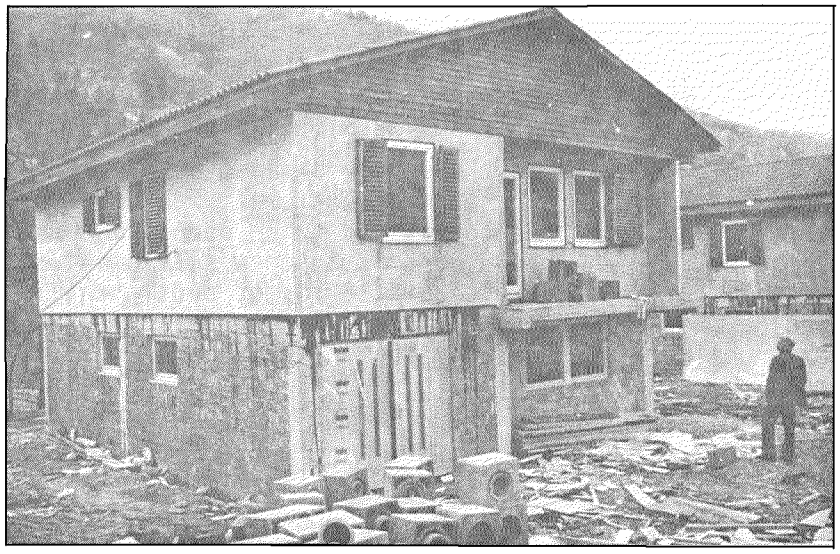


Figure 4

Prefabricated Permanent Housing Soča Valley, Yugoslavia, 1976

This type of new prefabricated house was built on stable foundations with reinforced concrete supports. The decision was made in the Soča River Basin not to construct temporary dwellings, but instead in a very short period of time (four to six months) to erect up-to-date, non-luxurious, but functionally arranged permanent structures.