Research Report:

Reducing building costs by adopting constructional techniques of other countries

Summary account

There are many ways of reducing costs in residential building. The present research report is concerned with cost-saving methods in construction and building technique.

Especially in the field of residential building, construction is still dominated by traditions which are specific to a particular country. However, as a look across the borders will confirm, there are a lot of different options and, most importantly, a great variety of more simple and cost-saving ways of building. For this reason, the report gives a survey of typical constructions which are common practice in our neighbouring countries with similar climates and comparable standards of living.

The survey is mainly based on publications and information obtained from university institutes and building professionals in neighbouring countries. As the scarcity of publications on the subject and the rather limited supply of information by those contacted seems to indicate, one does not usually theorize about everyday low-cost housing constructions, one simply uses them in practice. Nevertheless the present writers think that, after considerable investigation, they have been able to identify essential characteristics of foreign building techniques.

According to the different residential habits in various countries, the types of construciton presented here are related to one-family houses or houses in multiple occupation. In all the countries covered by the survey, expenditure for average one-family houses is substantially lower because they are built without cellars, without footstep sound insulation, and with less extensive damp protection.

On the whole, the **Norwegian** type of wooden house is not less costly than comparable structures in Germany. It should be noticed, however, that its foundations are not laid at a frost-free underground level, instead, the foundation area is provided with perimeter insulation.

In **Great Britain, Ireland** and the **Netherlands** double-leaf cavity constructions consisting of two brick leaves of ca. 10cm each are typically used. In Great Britain and Ireland they are fitted with simple roof trusses, which are not used as living space; timber joist ceilings are still widely used as storey slabs. Another current technique is to construct ceilings or floors of prefabricated elements (large prefabricated slabs, filigree floors). Since details are often designed more simply, they are also cheaper to execute.

In contrast to German practice, internal insulation is widespread in **Great Britain, Ireland, France** and **Italy.** The problems of heat insulation, which result from the use of penetrating load-bearing structural components, are minimized by the installtion of timber joist ceilings or hollow filler block floors.

To some extent, the comparatively low price for houses in our neighbouring countries is obviously due to the generally lower standard of thermal insulation.

Building practice in the **Netherlands** is of especial interest because the residential habits there are rather similar to those in Germany. But the survey shows that, in many cases, cost-saving cut-backs are only possible by lowering the utility value of houses (e.g. by making staircases much steeper).

All in all, the writers think that many aspects of the constructional details presented in the report might lead to a re-consideration of current German techniques and, in this way, help to reduce expenditure in residential building in Germany.