

# BLOCK MASONRY

## Summary

This thesis concerns a simple method of construction: homogeneous block masonry. Its overall premise is that homogeneous block masonry has, in addition to its obvious advantages with respect to interior climate and easy use, a promising architectural, space-forming and tectonic potential.

The thesis arises from a scepticism of the growing complexity of modern construction techniques for exterior walls, where new needs are met by the addition of a "new layer" instead of by a truly innovative approach that takes the entire problem into account. In contrast, homogeneous block masonry yields the possibility of precisely such an approach. The assertion of the thesis is that the simple nature of block masonry provides the point of departure for a more intuitive architectural process that simplifies and unites, where traditional techniques complicate and fragmentize. Homogeneous block masonry has a distinctive physical quality, but because of its porosity it needs to be covered. The thesis attempts to develop the interesting relation between the massive homogeneous material and its thin cover. The investigations in the thesis begin with problems that generally arise at the drawing board. They are divided into 3 parts. Part 1 formulates some theoretical and practical tools for determining the characteristics of block masonry. Basically, it is a comparison of the standard practice based on the layered wall with that based on the homogeneous but covered block wall. It is explained how, through the years, various technologies and materials have led to various concepts of "simplicity" with respect to the exterior wall and its surface. It is with regard to the question of the exposed or not-exposed block that the concept of simplicity has been decisive for the subject of the thesis. The thesis points out the structural and architectural advantages that arise when porous block masonry is covered. The case is made that our understanding today is determined by history. By taking an historical view of the most important theory constructions and other constructional cultures, the thesis attempts to create a basis for a precise understanding and application of block masonry in the future. Part 1 concludes with a discussion of the possibilities and limits of block masonry as a supporting homogeneous construction and spatial demarcation, and with a conclusion regarding its architectural potential.

The point of departure of this project has been the porous tile block Poroton. (The construction details in Part 3 are based solely on this particular block type.) As used in this thesis, however, the phrase "block masonry" includes the entire family of mineral, insulating, homogeneous blocks. Part 2 describes each of these block types but refrains from judging which are best. On the other hand, the thesis does express a preference for heavy, monolithic wall constructions as opposed to the light, layered variety. Part 2 concludes with a

discussion of plaster types for surfacing block masonry and examples of plastering techniques.

Part 3 serves as a kind of "architectural reflection" on the research-oriented observations of the thesis, its purpose being to set an example for block masonry in practice. This leads to a series of construction principles. Attention is then paid to selected construction typologies based on block masonry, and these are illustrated by references to existing block masonry constructions.

Thus, at the highest level, Part 1 contains a description of block masonry and various ways of viewing it and its potential. Part 2 is addressed primarily to the building planner who seeks information on the various block types and their structural advantages and disadvantages. Part 3 aims at evaluating block masonry with respect to gravity, the climate and the dweller. The intention has been to make the three parts mutually independent, but at the same time it is hoped that the reader, regardless of whether his interest is practical or theoretical, will be tempted to look at them all.

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