

Avaldatud inglise keeles: jaanuar 2009  
Jõustunud Eesti standardina: detsember 2006

## **BUILDING DESIGN**

### **Hoone ehitusprojekt**

## FOREWORD

This Estonian standard 811:2006 “Building Design”:

- is a translation of Estonian standard EVS 811:2006, in case of interpretation disputes the Estonian text applies,
- is a revision of standard EVS 811:2002 “Building Design” compiled by the Estonian Association of Architectural and Consulting Engineering Companies,
- replaces standard EVS 811:2002 “Building Design”,
- is implemented by decree of Estonian Centre for Standardisation 12.12.2008 no 254,
- becomes valid with notice in EVS Teataja, issue January 2009.

Estonian standard EVS 811:2006 “Building Design” has been prepared by the Estonian Association of Architectural and Consulting Engineering Companies. Translation into English has been made by Roode Liias.

The translation of this standard was funded by Ministry of Economic Affairs and Communications.

Comments on the draft standard were received from KH-Energiakonsult AS, Harri Kivilo, the Ministry of Economic Affairs and Communications, AS Eesti Projekt, AS Eesti Ehitus, BK Konsultandid AS, the Technical Inspectorate, AS Merko Ehitus, Skanska EMV AS, Tallinn University of Technology, Inseneribüroo Pike OÜ, Rakendusgeodeesia ja Ehitusgeoloogia Inseneribüroo OÜ, the Estonian Rescue Board, TSM Projektijuhtimise OÜ, the Estonian Society of Heating and Ventilation Engineers, the Union of Estonian Architects, Ehitusekspertiisibüroo OÜ, the Estonian Association of Construction Entrepreneurs, JP-Terasto Eesti OÜ, EA Reng AS and OÜ Projektbüroo Teinos. The comments and suggestions received were considered by the Estonian Association of Architectural and Consulting Engineering Companies and the results were incorporated into the final document.

The current standard includes normative annexes A, C and D and informative annexes B and E. These annexes refer to works which are outside the scope of building design.

ICS 91.010.01 Construction industry in general  
Descriptors: building, construction, design  
Price group S

**Rights of reproduction and distribution of Estonian standards belongs to the Estonian Centre for Standardisation.**

Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means without permission in writing from Estonian Centre for Standardisation.

If you have any questions about EVS copyright, please contact Estonian Centre for Standardisation:  
Aru 10, Tallinn 10317 Estonia; [www.evs.ee](http://www.evs.ee); phone +372 605 5050; e-mail: [info@evs.ee](mailto:info@evs.ee)

## CONTENTS

|                                               |    |
|-----------------------------------------------|----|
| PREFACE.....                                  | 5  |
| 1 SCOPE .....                                 | 6  |
| 2 NORMATIVE REFERENCES.....                   | 6  |
| 3 TERMS AND DEFINITIONS.....                  | 6  |
| 4 ACRONYMS AND ABBREVIATIONS .....            | 8  |
| 4.1 Design Stages.....                        | 8  |
| 4.2 Design Components .....                   | 8  |
| 5 GENERAL REQUIREMENTS.....                   | 8  |
| 6 DESIGN MANAGEMENT .....                     | 9  |
| 7 INITIAL REFERENCE DOCUMENTS FOR DESIGN..... | 9  |
| 8 BUILDING DESIGN COMPONENTS .....            | 10 |
| 8.1 General Arrangement .....                 | 11 |
| 8.2 Architecture.....                         | 11 |
| 8.3 Structures.....                           | 11 |
| 8.4 Heating and Ventilation.....              | 12 |
| 8.5 Water Supply and Sewage .....             | 12 |
| 8.6 Electrical Installation .....             | 12 |
| 8.7 Fire Safety.....                          | 12 |
| 8.8 Other Systems .....                       | 13 |
| 9 CONCEPT .....                               | 13 |
| 10 BUILDING DESIGN STAGES .....               | 13 |
| 11 PRELIMINARY DESIGN.....                    | 14 |
| 11.1 General Arrangement .....                | 14 |
| 11.2 Architecture.....                        | 15 |
| 11.3 Structures.....                          | 16 |
| 11.4 Heating and Ventilation.....             | 16 |
| 11.5 Water Supply and Sewage .....            | 17 |
| 11.6 Electrical Installation .....            | 18 |
| 11.6.1 High Voltage Installation .....        | 19 |
| 11.6.2 Low Voltage Installation.....          | 19 |
| 11.6.3 Automation.....                        | 20 |
| 11.7 Fire Extinguishing Installation .....    | 20 |
| 12 DETAILED DESIGN .....                      | 20 |
| 12.1 General Arrangement .....                | 20 |
| 12.2 Architecture.....                        | 21 |
| 12.3 Structures.....                          | 22 |
| 12.3.1 Foundations .....                      | 23 |
| 12.3.2 Structures.....                        | 23 |
| 12.3.3 External Walls .....                   | 23 |
| 12.3.4 Roof .....                             | 24 |
| 12.4 Heating and Ventilation.....             | 24 |
| 12.4.1 Heating.....                           | 25 |
| 12.4.2 Ventilation .....                      | 25 |
| 12.4.3 Cooling.....                           | 26 |
| 12.4.4 District Heating.....                  | 27 |
| 12.4.5 Heat Distribution Substation .....     | 27 |
| 12.4.6 Boiler Plant.....                      | 27 |
| 12.5 Water Supply and Sewage .....            | 28 |
| 12.5.1 Water Supply .....                     | 29 |
| 12.5.2 Water Measurement Node.....            | 29 |
| 12.5.3 Sewage Disposal .....                  | 29 |
| 12.5.4 External Networks.....                 | 29 |

|         |                                                           |    |
|---------|-----------------------------------------------------------|----|
| 12.6    | Electrical Installation .....                             | 30 |
| 12.6.1  | High Voltage Installation .....                           | 30 |
| 12.6.2  | Low Voltage Installation .....                            | 31 |
| 12.6.3  | Automation .....                                          | 32 |
| 12.7    | Fire Extinguishing Installation .....                     | 32 |
| 13      | CONSTRUCTION DOCUMENTATION .....                          | 33 |
| 13.1    | General Arrangement .....                                 | 33 |
| 13.2    | Architecture .....                                        | 33 |
| 13.3    | Structures .....                                          | 34 |
| 13.3.1  | Foundations .....                                         | 35 |
| 13.3.2  | In-situ Concrete Structures .....                         | 35 |
| 13.3.3  | Precast Concrete Structures .....                         | 36 |
| 13.3.4  | Steel Structures .....                                    | 36 |
| 13.3.5  | Timber Structures .....                                   | 36 |
| 13.3.6  | Masonry Structures .....                                  | 36 |
| 13.4    | Heating and Ventilation .....                             | 37 |
| 13.4.1  | Heating .....                                             | 37 |
| 13.4.2  | Ventilation .....                                         | 37 |
| 13.4.3  | Cooling .....                                             | 37 |
| 13.5    | Water Supply and Sewage .....                             | 37 |
| 13.6    | Electrical Installation .....                             | 38 |
| 13.7    | Fire Extinguishing Installation .....                     | 38 |
| 14      | FIRE SAFETY .....                                         | 38 |
| 15      | INTERIOR DESIGN .....                                     | 39 |
| 15.1    | Interior Design - Preliminary Design .....                | 40 |
| 15.2    | Interior Design – Detailed Design .....                   | 40 |
| 15.3    | Interior Design Construction Documentation .....          | 41 |
| 16      | DEMOLITION .....                                          | 41 |
| Annex A | (Normative Annex) Production drawings .....               | 43 |
| A.1     | Pre-cast Concrete Units .....                             | 43 |
| A.2     | Metal Products .....                                      | 43 |
| A.3     | Timber Products .....                                     | 44 |
| A.4     | Openings .....                                            | 44 |
| A.5     | Fittings and Furniture .....                              | 44 |
| Annex B | (Informative Annex) As-built drawings .....               | 45 |
| Annex C | (Normative Annex) Design compliance supervision .....     | 46 |
| C.1     | Architecture .....                                        | 46 |
| C.2     | Interior Design .....                                     | 46 |
| C.3     | Structures .....                                          | 46 |
| C.4     | Services .....                                            | 46 |
| Annex D | (Normative Annex) Operation and maintenance manuals ..... | 47 |
| Annex E | (Informative Annex) Assembly drawings .....               | 48 |

## PREFACE

This standard defines the contents of building design documentation.

Estonian Standard EVS 811:2002 was compiled in 2002 by the Estonian Association of Architectural and Consulting Engineering Companies (EPBL). A revised standard based on EVS 811:2002 was developed in 2006 on behalf of EPBL.

The recommended scope of the individual elements and stages of building design are presented in this standard. The scope of building design to the current standard depends on the particular building and its specific requirements and may be described more thoroughly and in greater detail or to a lesser extent.

## 1 SCOPE

The standard deals with technical documentation describing the technical solutions for a planned building's architecture, services and utility networks, on-site structures, ways and grounds.

This standard does not cover documentation describing the management of construction work.

This standard does not cover technology design. It is assumed that building designers obtain the necessary details and source data for spatial, environmental and technical system design from the client at every stage of design development.

Preliminary work to clarify the source data for design (needs analyses, economic analyses, cost effectiveness studies, location comparisons, concept sketches) is not considered to be within the scope of this standard's concept of building design.

The standard does not cover the drafting of technical drawings.

## 2 NORMATIVE REFERENCES

This standard includes dated and undated references to other published articles. These normative references are cited at the appropriate places within the text and listed below. Later revisions of dated references and new publications are applicable to this standard only through its revision or new publication. The latest publications of undated references are applicable.

**EVS 865-1:2006** Specification of building design. Part 1: Specification of preliminary design

**EVS 865-2:2006** Specification of building design. Part 2: Specification of basic design

## 3 TERMS AND DEFINITIONS

The terms in this standard are used with the following meanings:

### 3.1

**Building Design** (*hoone ehitusprojekt*)

The entirety of documentation necessary for building erection, extension, reconstruction, demolition or the alteration of building services in accordance with the details specified in this standard

### 3.2

**Design** (*projekteerimine*)

The architectural and structural design of a building or part thereof. The design of building services

### 3.3

**Concept** (*eskiis*)

The plan prior to the development of the integrated building design, with free-form sketches and all their supporting documentation

### 3.4

**Preliminary Design** (*eelprojekt*)

The first stage of building design which incorporates all aspects of design, consists of explanatory notes and drawings and enables co-ordination, the building permit application process and the issuance of a building permit