

1. Record Nr.	UNINA9910137599303321
Autore	Hens Hugo
Titolo	From below grade construction to cavity walls [[electronic resource] /] / Hugo Hens
Pubbl/distr/stampa	Berlin, : Ernst & Sohn, 2012
ISBN	3-433-60196-8 3-433-60197-6 3-433-60195-X
Descrizione fisica	1 online resource (278 p.)
Collana	Performance based building design ; ; 1
Disciplina	690
Soggetti	Foundations Building sites Walls Buildings - Performance Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Title; Table of Contents; Preface; 0 Introduction; 0.1 Subject of the book; 0.2 Units and symbols; 0.3 References and literature; 1 Performances; 1.1 In general; 1.2 Definitions and basic characteristics; 1.3 Advantages; 1.4 Performance arrays; 1.5 Design based on performance metrics; 1.5.1 The design process; 1.5.2 Integrating a performance analysis; 1.6 Impact on the building process; 1.7 References and literature; 2 Materials; 2.1 In general; 2.2 Array of material properties; 2.3 Thermal insulation materials; 2.3.1 Introduction; 2.3.2 Apparent thermal conductivity; 2.3.2.1 In general 2.3.2.2 Impact of the transport modes 2.3.3 Other properties; 2.3.3.1 Mechanical; 2.3.3.2 Physical; 2.3.3.3 Fire; 2.3.3.4 Sensitivity to temperature, IR and UV; 2.3.4 Materials; 2.3.4.1 Insulating building materials; 2.3.4.2 Insulation materials; 2.3.4.3 Insulating systems; 2.3.4.4 Recent developments; 2.4 Water, vapour and air flow control layers; 2.4.1 In general; 2.4.2 Water barriers; 2.4.2.1 A short history; 2.4.2.2 Bituminous membranes; 2.4.2.3 Polymer-bituminous membranes; 2.4.2.4 High-polymer membranes; 2.4.3 Vapour retarders

and vapour barriers; 2.4.4 Air barriers; 2.5 Joints
2.5.1 In general; 2.5.2 Joint solutions and joint finishing options; 2.5.3 Performance requirements; 2.5.3.1 Mechanical; 2.5.3.2 Building physics related; 2.5.4 Sealant classification; 2.5.5 Load and sealant choice; 2.5.6 Structural design of sealed joints; 2.5.7 Points of attention; 2.6 References and literature; 3 Excavations and building pit; 3.1 In general; 3.2 Realisation; 4 Foundations; 4.1 In general; 4.2 Performance evaluation; 4.2.1 Structural integrity; 4.2.1.1 Equilibrium load bearing capacity; 4.2.1.2 Settling load bearing capacity; 4.2.2 Building physics; 4.2.3 Durability
4.3 Foundation systems; 4.3.1 In general; 4.3.2 Spread foundations; 4.3.2.1 Footings; 4.3.2.2 Foundation slabs; 4.3.2.3 Soil consolidation; 4.3.3 Deep foundations; 4.3.3.1 Wells; 4.3.3.2 Piles; 4.4 Specific problems; 4.4.1 Eccentrically loaded footings; 4.4.2 Footings under large openings; 4.4.3 Reinforcing and/or deepening existing foundations; 4.4.3.1 Footings; 4.4.3.2 Wells; 4.4.3.3 Pressed piles; 4.5 References and literature; 5 Building parts on and below grade; 5.1 In general; 5.2 Performance evaluation; 5.2.1 Structural integrity; 5.2.1.1 Static stability; 5.2.1.2 Strength and stiffness
5.2.2 Building physics, heat, air, moisture; 5.2.2.1 Air tightness; 5.2.2.2 Thermal transmittance; 5.2.2.3 Transient response; 5.2.2.4 Moisture tolerance; 5.2.2.5 Thermal bridging; 5.2.3 Building physics: acoustics; 5.2.4 Durability; 5.2.5 Fire safety; 5.2.6 Soil gases; 5.3 Design and execution; 5.3.1 Basements; 5.3.2 Drainages; 5.3.2.1 In general; 5.3.2.2 Properties; 5.3.2.3 Design; 5.3.3 Waterproof encasement; 5.3.3.1 Inside; 5.3.3.2 Outside; 5.3.4 Waterproof concrete; 5.4 References and literature; 6 Structural options; 6.1 In general; 6.2 Performance evaluation; 6.2.1 Structural integrity
6.2.2 Fire safety

Sommario/riassunto

Just like building physics, performance based building design was hardly an issue before the energy crises of the 1970s. With the need to upgrade energy efficiency, the interest in overall building performance grew. As the first of two volumes, this book applies the performance rationale, advanced in applied building physics, to the design and construction of buildings. After an overview of materials for thermal insulation, water proofing, air tightening and vapour tightening and a discussion on joints, building construction is analysed, starting with the excavations. Then foundations, below a
