

1. Record Nr.	UNINA9911006812903321
Autore	Goel R. K. <1960->
Titolo	Underground infrastructures : planning, design, and construction / / R. K. Goel, Bhawani Singh, Jian Zhao
Pubbl/distr/stampa	Amsterdam ; ; Boston, : Elsevier/Butterworth-Heinemann, c2012
ISBN	9786613612175 9781280582394 1280582391 9780123977670 0123977673
Descrizione fisica	1 online resource (623 p.)
Altri autori (Persone)	SinghBhawani ZhaoJian <1960->
Disciplina	624.1/9
Soggetti	Underground construction - Planning Underground construction - Design Underground storage - Planning Underground storage - Design Underground areas - Design and construction
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di contenuto	Cover Image; Title; Copyright; Dedication; Preface; Table of Contents; Chapter 1. Introduction; 1.1 Underground Space and Its Requirement; 1.2 History of Underground Space Use; 1.3 Underground Space for Sustainable Development; 1.4 What Should Be Done?; 1.5 Future of Underground Space Facilities; 1.6 Scope of the Book; REFERENCES; Chapter 2. Classification of Underground Space; 2.1 General; 2.2 Major Classification Grouping; 2.3 Benefits and Drawbacks of Underground Facilities; REFERENCES; Chapter 3. Important Considerations; 3.1 Geological Considerations; 3.2 Engineering Considerations 3.3 Psychological and Physiological Considerations3.4 Choosing to go Underground-General Advantages; 3.5 Drawbacks of Underground Space Use; 3.6 Safety Considerations; 3.7 Ventilation; 3.8 Legal and Administrative Considerations; 3.9 Economic Considerations; REFERENCES; Chapter 4. Underground Space Planning; 4.1 Forms of

Underground Space Available and Uses; 4.2 Level-Wise Planning of Underground Space Use; 4.3 Future Forms of Underground Space Use; 4.4 Technology for Underground Development; 4.5 Conceptual Designs; 4.6 Cost Considerations; 4.7 Planning of Underground Space; REFERENCES

Chapter 5. Underground Storage of Food ItemsSection 1; Section 2; REFERENCES; Chapter 6. Underground Storage of Water; 6.1 General; 6.2 Water Storage by Recharge Methods; 6.3 Underground Rock Cavern Tank Storage; 6.4 Case Histories; REFERENCES; Chapter 7. Underground Parking; 7.1 Introduction; 7.2 Types of Parking Facilities; 7.3 Various Modern Mechanical Underground Parking Options; 7.4 Evaluation Criteria of a Site for Underground Parking; 7.5 Design of Underground Parking Facilities; 7.6 Parking Guidance System; 7.7 Parking Lot Security; 7.8 Ventilation in Underground Car Parks 7.9 Economics of Underground Parking Facilities7.10 Case Histories; REFERENCES; Chapter 8. Underground Metro and Road Tunnels; 8.1 Introduction; 8.2 Tunnel Boring Machine (TBM); 8.3 Precast Lining; 8.4 Building Condition Survey and Vibration Limit; 8.5 Impact on Structures; 8.6 Subsidence; 8.7 Half-Tunnels for Roads; 8.8 Road Tunnels; 8.9 Subsea Tunnels; 8.10 Case Histories; REFERENCES; Chapter 9. Underground Storage of Crude Oil, Liquefied Petroleum Gas, and Natural Gas; 9.1 Introduction; 9.2 Investigations and Design; 9.3 Underground Storage Technology; 9.4 Storage of Natural Gas 9.5 Tunnel-Shaped Storage Facility9.6 Multitank Storage (Polytank) Concept; 9.7 General Advantages and Disadvantages of Underground Storages; 9.8 Inground Tanks; 9.9 Cost Aspects; 9.10 Effect of Earthquake; 9.11 Carbon Dioxide Sequestration; REFERENCES; Chapter 10. Civic Facilities Underground; 10.1 General; 10.2 Sewage and Waste Water Treatment Plant; 10.3 Sports Center; 10.4 Underground Pedestrian Path; 10.5 Shopping Mall; 10.6 Underground Recreational Facilities; REFERENCES; Chapter 11. Underground Structures for Hydroelectric Projects; 11.1 Introduction 11.2 Recent Developments in Planning of Hydroelectric Projects

Sommario/riassunto

Underground facilities, such as tunnels, sewer, water and gas networks form the backbone of the economic life of the modern city. In densely populated areas where the demands for transportation and services are rapidly increasing and the construction of new roads and railways are prohibited, the construction of a tunnel might be the only alternative. Brief and readable, this reference is based on a combined 75 years of field experience and places emphasis is on simple practical rules for designing and planning, underground infrastructures. The books' begins with a clear and rigorous exposit
