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Nota di contenuto	Cover -- Title Page -- Copyright Page -- Contents -- Acronyms & Symbols -- Foreword by Tom Glover -- Preface -- Acknowledgements -- About the Authors -- Chapter 1 Introduction -- Chapter 2 What Drives the Need and the Various Types of Data Centres -- Data Demand versus Compute Efficiency -- Workload Placement -- The Core Components of a Data Centre -- Types of Data Centres -- Enterprise Data Centre -- Colocation -- Public Cloud -- Urban or Edge -- Chapter 3 Site Selection -- Climate -- Access Roads and Airports -- Air Quality -- Likelihood of Natural Disasters -- Ground Conditions -- Communications Infrastructure -- Latency -- Proximity to Subsea Cable Landing Sites -- Density of Fibre Telecommunication Networks Near the Data Centre -- Geopolitical Risks, Laws, and Regulations -- Availability and Cost of Electrical Power -- Natural Resources -- Airport Flight Paths -- Electromagnetic Interference -- Taxes, Regulations, and Incentives -- Incentives -- Know the Stakeholders -- Expect the Unexpected -- Traditional Due Diligence -- Retrofitting Commercial Buildings for Data Centres -- Clusters -- Qualitative Analysis -- Quantitative Analysis -- Chapter 4 IT Operations and the Evolution of the Data Centre -- Beginning of IT Infrastructure -- Bringing Enterprise IT to Maturity -- IT Applications as Standalone Products - The Digital Economy -- Second Iteration of the Internet -- Key Ingredients for Digital Products -- Difference Between Enterprise IT

Infrastructure and Hosting Infrastructure -- Commoditisation of IT Infrastructure -- Virtualisation: Servers and Data Centres as Generators for Digital Resources -- Software-as-a-Service: Digital Natives Entering the Enterprise -- Great Outsourcing of Enterprise IT and the Growth of the Colocation Model -- When Digital Products Scale - or the Invention of Hyperscale.

A Change in Architecture - The Rise of Cloud Infrastructure -- Origin of a Market for Digital Resources -- When Cloud Infrastructure Became Cloud Services -- When Microsoft and Google Joined the Party -- Kubernetes and the Next Layer of Abstraction -- How Traditional Hosting Companies Have Been Left Behind -- How the New Paradigm of Cloud Infrastructure Is Changing How Data Centres Are Built -- Central Role of Connectivity in the Future of Data Centre Architectures -- Problem of an Old IT Philosophy -- Chapter 5 Overview of Infrastructure -- Power -- Cooling -- BMS -- Fire -- Security -- Chapter 6 Building a Data Centre: Stakeholders, Design, Construction, and Commissioning -- Stakeholders and Project Stages -- Pre-project -- Pre-design -- Design -- Bricks and Mortar versus Modular Build -- Procurement -- Construction -- Commissioning -- Handover (see also Chapter 7) -- Operation -- Chapter 7 Operational Issues -- Handover -- Legacy Facilities -- Operations Team -- Uptime and Failures -- Maintenance Processes and Procedures -- Managing Change -- Capacity Management -- Training -- Performance Optimisation - Beyond Reactive Maintenance -- Chapter 8 Economics, Investment, and Procurement of Data Centres -- Enterprise -- Colocation -- Retail Colocation -- Wholesale Colocation -- Retail versus Hyper-scale Data Centres -- Retail Data Centres -- Hyper-Scale Data Centres -- Investment and Procurement -- Investment in Colocation Facilities -- Power Supply Arrangements -- Other Complexities -- Valuation -- Colocation Leases -- Wholesale Colocation -- Retail Colocation -- Service-Level Agreements (SLAs) -- Managed Hosting and Cloud Services -- Total Cost of Ownership (TCO) -- Merger and Acquisition -- Chapter 9 Sustainability -- Corporate Sustainability -- Energy Consumption and Energy Efficiency -- Renewable Energy -- Generators -- Water Usage -- Heat Recovery.

Life Cycle Impacts -- Green Building Certifications -- Policy and Regulation -- Conclusion -- Chapter 10 The Importance of Planning to Avoid Things Going Wrong -- Introduction -- Acquisitions and Investments -- Operating Models and Commercial Contracts -- Funding Investment -- Construction -- Choice of Contract -- Technical and Pricing Schedules -- Risk Allocation -- Usual Suspects -- Infrastructure Provision and Project Rights -- Construction -- Moving to Low Carbon Solutions -- What Are Data Centre Operators Doing to Transition to Low Carbon? -- Corporate Power Purchase Agreements (CPPAs) -- On-site Generation and Electricity Supply -- Backup Power -- Where Could Other Efficiencies Be Made? -- Ensuring Resilience -- Intellectual Property Rights -- Data and Cyber/Regulatory Compliance -- Disputes -- Conclusion -- Chapter 11 Around the Corner, What Could Happen Next -- Glossary -- Index -- EULA.

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## Sommario/riassunto

Understand the design, construction and operation of data centres with this easy-to-use reference. Data centres are spaces where computer systems, physical network technology and associated components are housed, operated and monitored, and any industry or business that employs computer systems or networked systems at any scale will interact with data centres. Data centres are complex and expensive to build and operate, and successful project delivery requires a wide range of specialised knowledge and skills. This accessible reference lays out the requirements for creating these essential facilities.

Essentials is a comprehensive survey of the essential principles of data centre design, construction and operation. It is designed to provide those involved in a data centre project or providing professional service deliverables to the data centre industry but do not have a technical background or deep sector experience with the understanding required to participate in such projects. The non-technical language and thorough engagement with key considerations make it ideal for anyone looking to understand one of the pillars of a digital society. Data Centre Essentials readers will also find: An authorial team with decades of combined experience in engineering and construction consultancy Detailed information about every stage in the process, including securing investment and the building process Working lexicon of key data centre terminology Data Centre Essentials is a must-own for contractors, engineers and construction project managers involved in data centre projects and will be invaluable for professionals such as lawyers, financial and insurance advisors, surveyors, engineers and architects who do not necessarily have deep domain experience but find themselves involved in or are interested in engaging in, data centre projects.

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2. Record Nr.	UNICAMPANIAVAN00208104
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