

The Facility Managers Guide To Finance And Budgeting

"If you are involved in church facilities through vocation or volunteerism...then this book is for you." (from the Foreword by Josh Patterson, Lead Pastor of The Village Church - Flower Mound, TX) Since the days of Moses, the people of God have had instructions on how to best care for the house of the Lord. Now church facility consultant and former minister James D. Jordan guides facility managers and team members through the process of managing church facilities from a modern, practical, spiritual, and Biblical perspective. Written in a unique, down-to-earth style, this book is filled with best practices and real-life examples that will put readers at ease as they are encouraged to be good stewards of the house of worship.

Loaded with procedures, checklists, guidelines, samples, and templates, The Facilitator's Fieldbook covers all the key areas of successful team management, including establishing ground rules, planning meetings and agendas, brainstorming, resolving conflict, making decisions, and helping groups optimize their time. The completely revised third edition of this longtime go-to resource for novice and experienced facilitators provides new team-building exercises as well as updated information on virtual meetings, mediation, strategic planning, and much more. You'll also gain tips on maintaining the tone and flow of meetings, and will learn to determine when to delegate projects to individuals rather than assembling a group. Collaborative projects have become an increasingly prevalent feature of modern business strategies and workplace dynamics. But intentional, strategic facilitation is essential to making sure these groups and teams are effective. The Facilitator's Fieldbook provides readers the comprehensive tools and knowledge they need to help their teams--and, ultimately, their organizations--succeed.

Facility Integrity Management: Effective Principles and Practices for the Oil, Gas and Petrochemical Industries presents the information needed to completely understand common failures in the facility integrity management process. By understanding this more comprehensive approach, companies will be able to better identify shortcomings within their respective system that they did not realize existed. To introduce this method, the book provides managers and engineers with a model that ensures major process incidents are avoided, aging facilities are kept in a safe and reliable state and are operating at maximum levels, and any gaps within the integrity management system are identified and addressed, such as the all too common fragmented reliability programs. The book approaches oil and gas facility management from a universal perspective, effectively charting out existing oil and gas facilities and their associated work processes, including maintenance, operations, and reliability, and then reconstructs them in order to optimize the way integrity is managed, creating a synergy across the various elements. Easy to read, packed with practical applications applied to real process plant scenarios such as key concepts, process flow charts, handy checklists, real-world case studies and a dictionary, provides a high quality guide for a breakdown free facility, maximizing productivity and return to shareholders. Helps readers gain a practical and industry specific approach to facility integrity management supported with real-world case studies from oil, gas, and petrochemical facility locations Presents a facility integrity excellence model, a holistic approach for oil and gas companies to drive towards integrity assurance unit monitoring, creating a failure-free environment Identifies and addresses failure of facility processes and equipment before the onset of performance degradation, keeping equipment maintenance costs low and reliability high

In the course of their work, the facilities manager will face a range of complex and often challenging tasks, sometimes concerned with a single business premises, often across an entire property portfolio. To help with those tasks, the Facilities Manager's Desk Reference provides the facilities manager with an invaluable source of highly relevant, practical information on all the principal facilities management services, as well as information on legal compliance issues, the development of strategic policies and tactical best practice information. With a clear practitioner perspective the book covers both hard and soft facilities management issues and is presented in an easy to read, concise format. The Facilities Manager's Desk Reference will be a first point of reference for all busy facilities managers and will save them time by providing access to the information needed to ensure the safe, effective and efficient running of any facilities function. It will also serve as a useful overview for students studying for their professional and academic qualifications in facilities management.

A guide for facility managers of varying types of facilities including, apartment buildings/complexes, office buildings, retail stores, educational facilities (schools), restaurants, and countless others. It will look specifically at the physical similarities inherent in all buildings/facilities and delve into the operational/maintenance needs, access control, audit procedures and emergency procedure requirements. It provides procedures and policy direction in facilities that are lacking such formalized doctrine and gives a starting point to run their facilities in a consistent manner with a focus on safety and security, as well as keeping control of liability risk.

Discover BIM: A better way to build better buildings Building Information Modeling (BIM) offers a novel approach to design, construction, and facility management in which a digital representation of the building product and process is used to facilitate the exchange and interoperability of information in digital format. BIM is beginning to change the way buildings look, the way they function, and the ways in which they are designed and built. The BIM Handbook, Third Edition provides an in-depth understanding of BIM technologies, the business and organizational issues associated with its implementation, and the profound advantages that effective use of BIM can provide to all members of a project team. Updates to this edition include: Information on the ways in which professionals should use BIM to gain maximum value New topics such as collaborative working, national and major construction clients, BIM standards and guides A discussion on how various professional roles have expanded through the widespread use and the new

avenues of BIM practices and services A wealth of new case studies that clearly illustrate exactly how BIM is applied in a wide variety of conditions Painting a colorful and thorough picture of the state of the art in building information modeling, the BIM Handbook, Third Edition guides readers to successful implementations, helping them to avoid needless frustration and costs and take full advantage of this paradigm-shifting approach to construct better buildings that consume fewer materials and require less time, labor, and capital resources.

This book contains practical, comprehensive, and effective guidance and advice on the issue of workplace violence. It is written in plain language and in a non-theoretical, reader-friendly format for quick and easy reference. Topics include the risk factors that contribute to workplace violence, as well as the effects of violence. The book discusses procedures for assessing threat as well as strategies for preventing violence and handling the consequences when necessary. It also examines situations such as domestic violence and the workplace and racial and sexual harassment and explains the new OSHA directive on investigation workplace violence.

A new paradigm in facility management A unique, just-in-time resource from profession leader Eric Teicholz, Facility Design and Management Handbook empowers you to make your facility state of the art. Packed with tips from U.S. and international case studies from government, health care, retail, finance, manufacturing, and academia, this guide gives you access to the productivity tools, technologies, and stratagems that have revolutionized the field in the last five years, helping you to: Find the best, most cost-effective solutions for issues from “greenness” and sustainability to disaster recovery and technology integration Use new tools for space and asset allocation, project management, process coordination, and systems integration Improve accuracy in financial forecasting, budgeting, architectural and interior design planning, and market research Create cost-effective “smart” buildings with state-of-the art security, energy management, lighting strategies, and maintenance efficiency Discover innovative solutions for human resources needs Integrate the Internet into your management program Automate nearly all your tasks for major productivity gains Apply benchmarking standards and other measurements that demonstrate and assure facility management productivity Accompanying time-saving, efficiency-boosting CD-ROM is loaded with sample documents—from budgets, schedules, plans to cost-benefit analyses, checklists, forms and audits; standards for communications and database, integration, building and construction, CAD conventions; Web links and other resources.

Addressing everything from the history of the federal agencies that enforce the regulations to the requirements of the regulations themselves, this new book provides facility managers with a comprehensive instruction manual for understanding and complying with the major Occupational Safety and Health Administration (OSHA), Environmental Protection Agency (EPA), and Department of Transportation (DOT) regulations. Whether you manage a chemical facility, a warehouse, or an office building, you'll learn what your roles and responsibilities are and how to address your facility's environmental health and safety issues. In addition to discussing such legal requirements as recordkeeping, respiratory protection, hazardous waste management and training, hazard communication, and emergency response, author Brian Gallant provides practical recommendations for establishing and implementing safety and health procedures. He also provides nearly two dozen checklists, forms, and sample documents to help you establish and maintain a successful environmental health and safety program, including a safety meeting report template, a fire prevention audit checklist, a hazardous waste area weekly inspection checklist, and a Chemical Use in Facility Areas Self-Audit checklist.

A safety management program that blends management commitment with employee involvement is the key to meeting the myriad safety challenges in any organization. Joseph Gustin's Safety Management: A Guide for Facility Managers, Second Edition addresses the complexities of safety management in detail, explaining how to systematically identify, evaluate, and prevent hazards. See what's new in the Second Edition: Cross-comparison of old vs new OSHA standards Update on employer compliance requirements to ADA with reference to court decisions New ergonomic standards Explanation of revisions to OSHA workplace inspection/investigation procedures and recordkeeping rules New material on violence in the workplace, including checklists, case studies, and recommendations Keeping the focus on managing safety function, this second edition elucidates safety and health issues including liability and how to better carry out the tasks that ensure a safe working environment. It summarizes statistics examines key areas of safety management. Gustin delineates the rights and responsibilities of employer and employee and outlines the Whistleblower act and its impact. He also covers violence in the workplace, ADA compliance, conducting the safety audit, recordkeeping, safety inspections, and change management. The book highlights major aspects of safety and health management that are not well-covered in other texts, such as the written safety plan and a written hazard communication program safety plan. Gustin explains each element of written plan and how to adapt the sample plan to any organization. At the core of this second edition is the recognition that corporations and other organizations have a moral, ethical, and legal responsibility to provide a safe environment for everyone who enters their facilities.

A practical look at extending the value of Building Information Modeling (BIM) into facility management—from the world's largest international association for professional facility managers Building owners and facility managers are discovering that Building Information Modeling (BIM) models of buildings are deep reservoirs of information that can provide valuable spatial and mechanical details on every aspect of a property. When used appropriately, this data can improve performance and save time, effort, and money in running and maintaining the building during its life cycle. It can also provide information for future modifications. For instance, a BIM could reveal everything from the manufacturer of a light fixture to its energy usage to maintenance instructions. BIM for Facility Managers explains how BIM can be linked to facility management (FM) systems to achieve very significant life-cycle advantages. It presents guidelines for using BIM in FM that have been developed by public and private owners such as the GSA. There is an extensive

discussion of the legal and contractual issues involved in BIM/FM integration. It describes how COBie can be used to name, capture, and communicate FM-related data to downstream systems. There is also extensive discussion of commercial software tools that can be used to facilitate this integration. This book features six in-depth case studies that illustrate how BIM has been successfully integrated with facility management in real-life projects at: Texas A&M Health Science Center USC School of Cinematic Arts MathWork's new campus Xavier University State of Wisconsin Facilities University of Chicago Library renovation BIM for Facility Managers is an indispensable resource for facility managers, building owners, and developers alike.

Addressing cyberterrorism and other terrorist activity including mailroom security, bomb threats, viruses, hackers and invasive programs, this book identifies known terrorists. It addresses the necessary steps needed for prevention of their attacks.

Facility management - as any profession encompassing multiple disciplines and integrating technology, people and physical space - is not only complicated but fraught with occasions to be exposed to various legal liabilities. Successful facility managers need the ability to manage risk well. They must understand the various ways the built environment can malfunction, anticipate the most likely problems and protect the owner's interest in such a way that the building can be safe for occupants yet productive for business purposes. The FM must therefore know the major tenants of risk avoidance, including knowledge of possible legal obstacles. Legal Concepts for Facility Managers informs facility managers of their legal responsibilities and helps them avoid unnecessary exposure to liability. Each major legal theory will be explained and illustrated with charts or case histories. Chapter learning outcomes and discussion questions will help students recall salient information and are also intended to be used as homework assignments or prompts for classroom discussions. As with any legal textbook expressly written for professionals who are not in the practice of law, the objective of this book is to inform students about their legal responsibilities. This text is not intended for students preparing to practice the law. It can be used in any course teaching built environment professionals how to avoid unnecessary exposure to legal liability.

Publisher Fact Sheet The first primer to teach facility managers financial skills that will help them sell their department to senior management, win funds for crucial projects, & to become fully integrated into an organization.

This book is a sincere effort by the author in collating the information's and sharing with the young facility management professionals. Author have referred a good number of BIS standards and NBC and the same is represented here for easy references. I hope this efforts will help the FM fraternity in upgrading their knowledge and it will help in enhancing their performance. This initiative will also help the corporate with an updated work force with required information radially available. I am also hopeful that the organizations shall also benefit from our efforts and this will help them in reducing their operational cost with increased efficiency of their FM team.

Written in easy-to-understand, non-technical terms, this book can be both a ready reference and a training guide. Covering each type of indoor air hazard, the author explains the basics of proper ventilation and the relationship of the HVAC system to indoor air quality. He examines fundamental procedures for maintaining good air quality, including filtration, control of humidity and moisture, and duct cleaning. A full chapter is devoted to recent developments and procedures for controlling toxic mold. Case studies, an HVAC glossary, and several helpful directories are also included. The guide provides a comprehensive account of indoor air quality hazards, their sources, and appropriate solutions. Newly revised and updated, this best-selling book devoted to exploring the complexities of disaster preparedness and business continuity, now includes the latest information on the threats associated with dirty bombs, as well as chemical and biological agents and weapons. Also updated in this edition are disaster planning and recovery issues, regulatory influences and emergency preparedness. This text speaks both to disaster prevention, as well as "controlling" the effects of a disaster on a company's operations. Statistics are presented which exemplify the outcome of past disaster/emergency declarations such as Hurricane Katrina. Other critical areas covered include statistical data on workplace violence, regulator influence, effective mitigation strategies, contingency planning, loss prevention, facility evacuation, employee training, computer and data protection, bomb threat response, standby power, self-inspection, enlisting the media's assistance in recovery planning, and more.

In the current climate of terrorism, the facility manager is in a more critical position than ever before. Protecting the organization's building and its occupants from chemical, biological, and radiological (CBR) attacks that are designed to disrupt and/or destroy business operation is becoming an increasingly important priority for facility managers using practice management. Bioterrorism: A Guide for Facility Managers provides a rationale for systematically identifying and evaluating the key areas of practice management. The book is unique in scope, focusing upon the awareness of terrorist threat. It addresses CBR attacks, as well as other forms of terrorism concerns, such as mailroom security, bomb threats, etc., along with the necessary steps for prevention, how to assess vulnerability, how to improve emergency preparedness, and how to assure optimum response and recovery in the event of an attack. It also presents examples of "lessons learned" and mistakes to avoid. By focusing on practice management, the text turns the challenges of facility management into opportunities for the facility manager. These opportunities are manifested in an enhanced productivity that aligns itself with ensuring the safety of building employees, occupants and tenants, as well as with business operations.

Museum facility management is a vital part of running a museum, but can involve special challenges that even knowledgeable facility managers have not encountered before. Museum administrators who need to learn more about facility management and facility managers who are stepping into the museum environment for the first time will find this book is a wealth of information. The Care and Keeping of Cultural Facilities: A Best Practice Guidebook for Museum Facility Management fills provides best practices guidance that can be used to increase efficiency, save money, and improve the guest experience. First published in 2004. This practical guide is designed for facility and maintenance managers who are facing "repair or replace" decisions for their buildings. Filled with useful information and resources to aid in the decision process, this hands-on reference shows readers how to accurately rate the condition of existing equipment and components, effectively assess their options, and avoid making costly mistakes. Detailed step-by-step instructions are provided, along with forms listing specific criteria identified for rating each building component. Topics include the assessment process; building site, shell, and interior; HVAC, plumbing, electrical, transportation, and safety systems; and more.

From the moment it was first published, Facility Management became the ultimate reference for facility and design professionals who want to create a productive workplace that corresponds to the short- and

long-term goals of their corporation. This Second Edition provides complete, fully up-to-date information and guidance on the evolving facility management profession that will help facility professionals and their service providers meet and exceed these goals.

The Facility Manager's Guide to Finance and Budgeting Amacom Books

Shows that the management of a company's facilities, from boiler room to board room, can maximize productivity and profits. The entire facility management area - planning, leadership, managing the design process, managing finances, leasing, operations, maintenance and benchmarking - is covered.

Governments across the globe are setting targets for reducing their carbon emissions. For example, the UK Government has committed to an eighty per cent reduction by 2050, when twenty-eight million buildings that currently exist will still be standing; this represents a challenge to improve the energy efficiency of more than one building per minute between now and 2050! This is a problem that needs tackling worldwide and is a challenge to both the refurbishment sector of the global construction industry and to those who own and operate existing buildings. Sustainable Retrofit and Facilities Management provides comprehensive guidance to those involved in the refurbishment and management of existing buildings on minimizing carbon emissions, water consumption and waste to landfill, along with enhancing the long term sustainability of a building. Practical guidance is provided on measures that can be used to improve the efficiency and sustainability of existing buildings, through both good management and refurbishment. Also explored is the relationship between the refurbishment of existing buildings, facility management and the wider community infrastructure. The book looks at management tools such as post occupancy evaluation, building health checks, energy management software, green building management toolkits and green leases. Illustrated throughout with case studies and examples of best practice, this is a must-have handbook for engineers, architects, developers, contractors and facility managers.

Now in this fourth edition, the Facilities Management Handbook has been fully updated from the acclaimed previous editions, continuing its status as an invaluable resource to those working in facilities management, whether just starting out or as seasoned campaigners and practitioners. Information is presented in a clear and logical way, offering easy-to-find advice and best practice information that's essential in guaranteeing the safe, efficient and cost-effective running of any facilities function. Many sections have been completely revised, such as the chapters on complying with health and safety and property law. Other information on workplace facilities has been brought completely up to date in line with legal compliance and strategic policies to create a reliable and accurate overview of the role of today's facilities manager. This up-to-date and revised handbook will be a key guide for the changing times that are ahead.

This easy-to-read, informational text presents a current, impartial and comprehensive look at how Information Technology (IT) and Facility Management (FM) have become inextricably bound together in the modern workplace. Exploring the evolving relationship between Information Technology and Facility Management, this book is a text that can be used by students, novice facility managers and as well experienced facility managers. As a result, the authors intend the text to be used as both a teaching and a reference tool for educational organizations and corporations alike. This text will also cover the latest advancements in facility management automation and provide a guide for implementing them successfully.

Recreation Facility Management: Design, Development, Operations, and Utilization presents a comprehensive introduction to the field of facility design, management, and maintenance for practicing or future recreation professionals.

This book will provide the student with core managerial knowledge and foundation in facility management and general services and, serves as a reference guide. The book concentrates on essential industry areas of facility management needed in order to institute effective property management and comprehend the many facets of the job. It indoctrinates application, theory and renders scientific knowledge in pertinent areas of facility management that elucidate duties and responsibilities. Facility Management and General Services is a programmed reference book that promotes learning and contains extensive resources on safety particularly, in emergency/contingency planning; general workplace safety; hazard communications; life safety; emergency evacuation; preparedness and planning. Also, a comprehensive section included in the "workplace safety guide" delineates fire suppression equipment, common memorable emergency phrases, workplace accidents/injuries and how to avoid them; blood borne pathogens; infectious control; and use of good body mechanics. This book highlights cumulative trauma disorders (human environmental factors) in the workplace and instills a sense of knowledge of concepts, causes and corrective action. Risk management and behavior based methods will aid the Facility Manager (FM) in a decision making process to address concerns, implement appropriate training to staff and be sensitive to ergonomic issues. Human Resource has always been -and will always be - an important resource to the FM. General competencies in this area are outlined to focus on comprehension of general issues and concerns in the workplace. Some of these doctrines include; health & safety; security; violence in the workplace; performance appraisals; disciplinary action; workplace diversity; training; illicit drugs; and confidentiality of records (HIPAA). Facility Management is often merged with general/office service functions that encompass yet another arena of tasks that will challenge the FM. Some of the topics included are asset management, purchasing, inventory control, shipping & receiving, mail services, telecommunications, fleet management; recycling, and more. Environmental services (custodial services) are discussed with some detail upholding safety and outlining standard practices in service application and equipment use. Some of the topics include floor care procedures, maintenance logs, preparing schedules, equipment care and standard cleaning procedures. This book will also enlighten the FM in scientific areas that will flourish to be invaluable information to assist in your efforts. Facility Management is an industry of vast areas of control. This book delivers core managerial knowledge and foundation and will undoubtedly; serve as an effective guide for the neo-FM as well as the seasoned professional. It contains the answers to review questions in each of the 15 sections to further the educational process. The answers are there for you to learn and know, so indoctrinate yourself and continue to grow!

Get longer, safer system operating life for every facility maintenance dollar! How do you efficiently manage facility infrastructure? You turn to this hands-on, answer-packed, time- and money-saving guide designed for every facility manager who has to do more with less. It shows you how to conduct seamless facility condition inspections that provide an overall snapshot of the current condition of your facility, generating enormous amounts of priceless information that will help you reduce or eliminate downtime and keep your facility humming. This comprehensive, portable toolkit packs everything you need to: * Continually assess the condition status of every aspect of a building: all of its systems and equipment, components and subcomponents * Identify deficiencies before they become major problems * Get better performance from every system

First published in 2004. Green Lights lighting specialist Damon Wood takes you step-by-step through upgrading a lighting system, in either a retrofit or complete redesign scenario, for the

purpose of increasing both energy efficiency and productivity. This guide is designed for use by anyone who needs to understand the principles of lighting and light's impact on conservation, productivity and safety. Readers will find valuable discussion of lighting quality, upgrade strategies, applications, technologies, economics, maintenance, project implementation and methods for assessing specific opportunities. This fully illustrated guide addresses these issues in lay terms and in an easy-to-understand, logical style.

The "bricks and mortar" issues of facility management - HVAC, lighting, electrical, plumbing, space allocation, security and grounds maintenance - continue to be at the core the facility manager's role. However, the processes involved in addressing these areas have become more complex. The proliferation of regulatory mandates, worker compensation issues, increased employee litigation, and violence in the workplace have redefined the role of the facility manager beyond "gatekeeper" to that of full-scale operations manager. Today's corporations, organizations, and business partnerships invest heavily in their physical plants. It naturally follows that they expect to maximize the return on their investment. Facility managers are seen as the catalysts for ensuring that optimal return. The Facility Manager's Handbook addresses all of these issues, and provides a multitude of tested ideas, procedures and examples for successfully and cost-effectively managing facility operations. Written in a plain-language, reader-friendly style, it provides a panoramic view of the process by isolating the key areas the facility manager must address, including real estate, space and change management, indoor air quality, emergency preparedness and response planning, communications systems, regulatory mandates and more.

The Complete Guide to Facility Management explains exactly what is required of a practicing facility manager in today's built environment. Through personal stories and examples, Dan Lowry teaches the four FM knowledge domains of Operations & Maintenance, Project Management, Business Finance, and Leadership to aspiring and practicing facility management professionals of all backgrounds and education levels. This guide will enable you to understand not only what you need to learn, but how to develop as an FM in a way that brings maximum value to your organization. Through learning how to prove this value to senior management, Dan illustrates key things you can do in order to achieve maximum effectiveness in your FM career.

Book intended for FMs in small- to medium-sized companies.

This book provides comprehensive coverage of issues that facility managers in the property industry need to understand and apply in the pursuit of value for money over the life span of built facilities. The authors introduce the fast-growing discipline of facility management, examine the core competencies that facility managers should possess and study different contemporary drivers of change. The book emphasises the need to consider facilities management issues at the pre-design stage of the construction process, rather than only when the building is completed, in order to maximise value for money. Managing Sport Facilities, Third Edition, provides students with the vital information and vocabulary to make smart decisions in all areas of facility management. This edition includes a new chapter on green facility management.

The current state of the facility management world is dynamic and evolving. More and more facility managers are participating in the design and construction of the buildings that they will eventually operate. Technologies such as building information modeling (BIM) offer ways to bridge the gap between the design and construction phase and the operation of buildings by making much more information available than existed in the past. We are also starting to see the emergence of the importance of a properly educated workforce in facility management. Emerging trends and issues include the effective utilization of performance management tools, Corporate Social Responsibility, and the Triple Bottom line. This book captures, in a practical and utilitarian way, information, best practices, and processes that will assist facility managers in addressing these trends as well as ongoing challenges. It provides a set of benchmarks, reference points and guidance that will enable the facility management community to be better informed and prepared in the execution of its mission. It serves as a great resource for those who are veterans in the community as well as those who are new entrants to or are examining the career opportunities within.

An Updated Guide to Establishing Cutting-Edge Operations and Maintenance Procedures for Today's Complex Facilities An essential on-the-job resource, Facility Manager's Maintenance Handbook presents step-by-step coverage of the planning, design, and execution of operations and maintenance procedures for structures, equipment, and systems in any type of facility. This career-building reference provides the tools needed to streamline facility management processes...reduce operational costs...and ensure the effective utilization, maintenance, repair, and renovation of existing physical assets. Now with 40% new information, this Second Edition includes brand-new chapters on emergency response procedures...maintenance operations benchmarking...capital and operational budgets management...boiler and steam plant operations... and other vital topics. The only book of its kind to cover both operations and maintenance, the updated Facility Manager's Maintenance Handbook features: Updated information on mechanical equipment and systems maintenance The latest fire protection procedures A comprehensive account of building codes Guidance on hazardous materials handling Excellent preparation for the IFMA Certified Facility Manager (CFM) qualification Inside This State-of-the-Art Facility Management Resource • Part 1: Organizing for Maintenance Operations • Part 2: Facility Operations and Maintenance • Operations Plans • Maintenance Plans • Part 3: Equipment and Systems Operations • Maintenance o Part 4: Facilities Emergency Preparedness o Part 5: Capital Investment

This book was written specifically to provide the facility manager with virtually all information needed to build and manage an effective security system for any type of facility. Topics include facility layout, distances and separation, fencing, access control, intrusion detection systems, pass key and key control systems, locks, hasps, gates, etc. Also explored are more sophisticated systems such as closed circuit TV, microwave transmitters, lasers, lighting, clear zone, computer access control, thumbprint and retinal scan access control, voice print analysis, and hand geometry. In addition, non-hardware aspects of security are examined, including security clearances and background checks, guards, rounds, shift work, training, and procedure development.

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