



BUILDING PLANNING AND DRAWING



REVISED
& ENLARGED

By

Dr. N. Kumara Swamy, A. Kameswara Rao

Edition : 9th Revised Edition : 2023 (First Reprint)
ISBN : 9789385039386
Binding : Paperback
Pages : 656 + 20 = 676
Size (mm) : 235 × 27 × 170
Weight : 830 g

Best
Seller



₹ 650.00 **BUY**

ABOUT THE BOOK

Drawing is the language of Engineers and Architects. Building Planning and Drawing is the foundation subject for Civil Engineering students. In this *Eighth Revised Edition* each topic of the text-book has been arranged in such a way that reader is empowered with an in-depth knowledge in the subject of Building Planning and Drawing.

The entire subject is canvassed in the chapters like: Fundamentals of Building Drawing; Fundamentals of Buildings; Site Selection for Residential Buildings; Climate and Its Influence on Building Planning; Orientation of Buildings; Principles of Planning Of Buildings; Building Bye-Laws; Planning of Residential Buildings; Planning of Public Buildings; Different Methods of Construction; Prefabricated Construction; Economical Measures in Building Construction; Green Buildings; Anthropometric Studies; Intelligent Buildings; Construction Management Techniques; Basic Concepts of the Building Elements; Nomenclature of Building Planning and Construction; Standard Guidelines for Building Drawing; Guidelines for Planning and Drawing of Residential Building; Drafting Materials and their Utilization; Conventional Signs and B.I.S. Code Colours; A Few Facts of the Vaastu Sastra; Perspective Drawings; Computer Aided Building Drawings; Typical Building Drawings; Question Bank. The Appendix gives University Examination Questions

The book now in its 27 Chapters and Appendix contains:

- * 409 Neatly drawn self-explanatory diagrams
- * 50 Plates of important components and different plans of buildings
- * 89 Useful Tables
- * 26 Solved Problems
- * 464 University Type questions are given for preparation of examinations.

A separate chapter as Question Bank includes:

- * 307 Short Questions with Answers
- * 123 Multiple Choice Questions
- * 97 Short Questions.

It is the fervent hope of the authors that this book will satisfy the needs of the Civil Engineering students preparing for the B.Tech/B.E. examinations of almost all the Indian Universities, Diploma examinations conducted by various Boards of Technical Education, Certificate courses as well as for the A.M.I.E., U.P.S.C., G.A.T.E. and other similar competitive and professional Examinations. It should also be of an immense help to the practising Civil Engineers.

CONTENT

- 1: FUNDAMENTALS OF BUILDING DRAWING
 - 2: FUNDAMENTALS OF BUILDINGS
 - 3: SITE SELECTION FOR RESIDENTIAL BUILDINGS
 - 4: CLIMATE AND ITS INFLUENCE ON BUILDING PLANNING
 - 5: ORIENTATION OF BUILDINGS
 - 6: PRINCIPLES OF PLANNING OF BUILDINGS
 - 7: BUILDING BYE-LAWS
 - 8: PLANNING OF RESIDENTIAL BUILDINGS
 - 9: PLANNING OF PUBLIC BUILDINGS
 - 10: DIFFERENT METHODS OF CONSTRUCTION
 - 11: PREFABRICATED CONSTRUCTION
 - 12: ECONOMICAL MEASURES IN BUILDING CONSTRUCTION
 - 13: GREEN BUILDINGS
 - 14: ANTHROPOMETRIC STUDIES
 - 15: INTELLIGENT BUILDINGS
 - 16: CONSTRUCTION MANAGEMENT TECHNIQUES
 - 17: BASIC CONCEPTS OF THE BUILDING ELEMENTS
 - 18: NOMENCLATURE OF BUILDING PLANNING AND CONSTRUCTION
 - 19: STANDARD GUIDELINES FOR BUILDING DRAWING
 - 20: GUIDELINES FOR PLANNING AND DRAWING OF RESIDENTIAL BUILDING
 - 21: DRAFTING MATERIALS AND THEIR UTILIZATION
 - 22: CONVENTIONAL SIGNS AND B.I.S. CODE COLOURS
 - 23: A FEW FACTS OF THE VAASTU SASTRA
 - 24: PERSPECTIVE DRAWINGS
 - 25: COMPUTER AIDED BUILDING DRAWINGS
 - 26: TYPICAL BUILDING DRAWINGS
 - 27: QUESTION BANK
- APPENDIX : UNIVERSITY EXAMINATION QUESTIONS
BIBLIOGRAPHY
INDEX

Catalogue Checklist

BUILDING PLANNING AND DRAWING
DETAILED CONTENTS

Chapter 1 FUNDAMENTALS OF BUILDING DRAWING

- 1-1. Introduction to building drawing
- 1-2. Brief history of building drawing
- 1-3. Preparation of drawings
- 1-4. Working drawings
- 1-5. Interpretation of drawings
- 1-6. Building plans approval procedure as per NBC 2005
- Questions 1

Chapter 2 FUNDAMENTALS OF BUILDINGS

- 2-1. Building
- 2-2. Classification of buildings based on nature of occupancy
- 2-3. Classification of buildings based on their fire resistance
- 2-4. Classification of building based on built-in environment and naturality
- 2-5. Classifications of residential buildings
 - 2-5-1. Detached house
 - 2-5-2. Semi-detached house
 - 2-5-3. Row houses or chawls
 - 2-5-4. Block of flats or terrace houses
 - 2-5-5. Duplex type house
- Questions 2 27

Chapter 3 SITE SELECTION FOR RESIDENTIAL BUILDINGS

- 3-1. General
- 3-2. Factors affecting the selection of site
- Questions 3 35

Chapter 4 CLIMATE AND ITS INFLUENCE ON BUILDING PLANNING

- 4-1. Introduction
- 4-2. Elements of climate
 - 4-2-1. Solar radiation
 - 4-2-2. Temperature of air
 - 4-2-3. Wind
 - 4-2-4. Humidity
 - 4-2-5. Precipitation
 - 4-2-6. Topography
- 4-3. Climatic zones of india
- 4-4. Climate and comfort
- 4-5. Earth and its motion
- 4-6. Directions and their characteristics
- 4-7. Landscaping
- Questions 4

Chapter 5 ORIENTATION OF BUILDINGS

- 5-1. General
- 5-2. Orientation
- 5-3. Factors affecting orientation
- 5-4. Sun
- 5-5. Wind
- 5-6. Rain
- 5-7. C.B.R.I.: Suggestions for obtaining optimum orientation
- 5-8. Orientation criteria for Indian conditions
- Questions 5

Chapter 6 PRINCIPLES OF PLANNING OF BUILDINGS

- 6-1. Aspect
- 6-2. Prospect
- 6-3. Privacy
 - (1) Internal privacy
 - (2) External privacy
- 6-4. Furniture requirement
 - 6-4-1. Drawing room
 - 6-4-2. Dining table and dining chairs
 - 6-4-3. Bed room

- 6-4-4. Kitchen
- 6-5. Roominess
- 6-6. Grouping
- 6-7. Circulation
- 6-8. Sanitation
 - 6-8-1. Lighting
 - 6-8-2. Ventilation
 - 6-8-3. Cleanliness
- 6-9. Flexibility
- 6-10. Elegance
- 6-11. Economy
- 6-12. Practical considerations
- Questions 6

Chapter 7 BUILDING BYE-LAWS

- 7-1. Introduction
- 7-2. Building bye-laws
- 7-3. Objectives of building bye-laws
- 7-4. Principles underlying building bye laws
 - 7-4-1. Minimum plot sizes and building frontage
 - 7-4-2. Open spaces
 - 7-4-3. Minimum standard dimensions of building elements
 - 7-4-4. Provisions for lighting and ventilation
 - 7-4-5. Provisions for safety from fire and explosions
 - 7-4-6. Provisions for means of access
 - 7-4-7. Provisions for drainage and sanitation
 - 7-4-8. Provisions for safety of works against hazards or accidents
 - 7-4-9. Requirements for off street parking
 - 7-4-10. Requirements for green belt and landscaping
 - 7-4-11. Special requirements for low income housing
 - 7-4-12. Sizes of structural elements
- 7-5. Applicability of the bye-laws
- Questions 7

Chapter 8 PLANNING OF RESIDENTIAL BUILDINGS

- 8-1. Introduction
- 8-2. Rooms meant for the various activities
- Questions 8

Chapter 9 PLANNING OF PUBLIC BUILDINGS

- 9-1. A school
- 9-2. A library
- 9-3. A hospital
- 9-4. A cinema building
- 9-5. A hostel
- 9-6. A hotel
- 9-7. An office building
- 9-8. A post office
- 9-9. A bank
- 9-10. A bus station
- 9-11. A Church
 - 9-11-1. Components of A church
 - 9-11-2. Recommended design criteria
- 9-12. A Mosque
- Questions 9

Chapter 10 DIFFERENT METHODS OF CONSTRUCTION

- 10-1. General
- 10-2. Differences between load bearing walled structure and framed structure
- Questions 10

Chapter 11 PREFABRICATED CONSTRUCTION

- 11-1. General
- 11-2. Advantages of prefabricated construction
- 11-3. Disadvantages of prefabrication construction
- Questions 11

BUILDING PLANNING AND DRAWING
DETAILED CONTENTS

Chapter 12 ECONOMICAL MEASURES IN BUILDING CONSTRUCTION

- 12-1. General
- 12-2. Economy of land
- 12-3. Economy in material of construction
- 12-4. Economy in labour
- 12-5. Economy of time
- 12-6. Economy in money spending
- Questions 12

Chapter 13 GREEN BUILDINGS

- 13-1. General
- 13-2. Green building or sustainable building
- 13-3. General principles of green buildings
- 13-4. Benefits of green buildings
- 13-5. Social benefits
- 13-6. Disadvantages of green buildings
- 13-7. Design criteria for green building
 - 13-7-1. Site sustainability
 - 13-7-2. Water use efficiency
 - 13-7-3. Energy efficiency
 - 13-7-4. Indoor environmental quality
 - 13-7-5. Green building materials
 - 13-7-6. Occupant health and safety
- 13-8. Cost of construction
- 13-9. Green building compared with conventional building
- 13-10. Assessment and evaluation of green building
- 13-11. Green building certification
- 13-12. Green buildings in India
- Questions 13

Chapter 14 ANTHROPOMETRIC STUDIES

- 14-1. Introduction
- 14-2. Golden section
- 14-3. Engineering anthropometry
- 14-4. Design criteria – for anthropometric data
- 14-5. Types of human body dimensions
- 14-6. Anthropometric design principles
- 14-7. Principles
- 14-8. Application of anthropometric data in design of residential building components
- 14-9. Drawing room
- 14-10. Dining room
- 14-11. Kitchen
- 14-12. Bed room
- 14-13. Stair
- Questions 14

Chapter 15 INTELLIGENT BUILDINGS

- 15-1. Imagine
- 15-2. Introduction
- 15-3. Development of intelligent buildings
- 15-4. What is an intelligent building?
- 15-5. How buildings become intelligent
- 15-6. Benefits of intelligent buildings
- 15-7. Limitations of intelligent buildings
- 15-8. Intelligent buildings in india
- 15-9. Intelligent building design
- 15-10. Access control – CCTV system
- 15-11. Light control systems
- 15-12. Control and optimization of air-condition systems
- 15-13. Fire alarm system
- 15-14. Burglar alarm and intrusion prevention system
- 15-15. Elevators
- Questions 15

Chapter 16 CONSTRUCTION MANAGEMENT TECHNIQUES

- 16-1. Introduction
- 16-2. Construction management functions
- 16-3. Objectives of construction management
- 16-4. Managing construction projects
- 16-5. Stages of a construction project and construction management team
- 16-6. Nomenclature
- 16-7. Methods of evaluation of the project
- 16-8. Network technique
- 16-9. Network technique in construction management
- 16-10. Programme Evaluation and Review Techniques
- 16-11. Three-time estimates for PERT
- 16-12. Critical path method
- 16-13. Definition
- 16-14. Applicability
- 16-15. Difference between CPM and PERT
- 16-16. Advantages of CPM
- 16-17. Time estimation for CPM
- Questions 16

Chapter 17 BASIC CONCEPTS OF THE BUILDING ELEMENTS

- 17-1. General
- 17-2. Components of a building
- 17-3. Foundations
- 17-4. Foundations in clayey soils
- 17-5. Masonry walls
- 17-6. Doors
- 17-7. Window
- 17-8. Lintels and arches
- 17-9. Stairs
- 17-10. Roof
- 17-11. Flooring
- 17-12. Plastering
- Questions 17

Chapter 18 NOMENCLATURE OF BUILDING PLANNING AND CONSTRUCTION

Chapter 19 STANDARD GUIDELINES FOR BUILDING DRAWING

- 19-1. Drawing sheet
- 19-2. Dimensioning
- 19-3. Lettering
- 19-4. General
- Questions 19

Chapter 20 GUIDELINES FOR PLANNING AND DRAWING OF RESIDENTIAL BUILDING

- 20-1. Planning
- 20-2. Plan
- 20-3. How to prepare the plan of a residential building?
- 20-4. Section
- 20-5. Elevation
- 20-6. Standard dimensions for various building units
- 20-7. Fixing the position of various building components and justification

Chapter 21 DRAFTING MATERIALS AND THEIR UTILIZATION

- 21-1. Tracing paper
- 21-2. Vellum
- 21-3. Polyester film
- 21-4. Sketch paper
- 21-5. Prints and prints making
- 21-6. Drawing pens and ink
- Questions 21

BUILDING PLANNING AND DRAWING
DETAILED CONTENTS

CHAPTER 22 CONVENTIONAL SIGNS AND B.I.S. CODE COLOURS

- 22-1. Conventional signs and conventional symbols
- 22-2. B.I.S. recommended colours for building materials
- Questions 22

Chapter 23 A FEW FACTS OF THE VAASTU SASTRA

- 23-1. Introduction
- 23-2. Shape of the site
- 23-3. Directions
- 23-4. Orientation
- 23-5. Level differences
- 23-6. Main entrance
- 23-7. Number of doors and windows
- 23-8. Number of columns and beams
- 23-9. Number of steps
- 23-10. Well
- 23-11. Colours
- 23-12. Position of stairs
- 23-13. Roof
- 23-14. Characteristics of sub soil
- 23-15. Basic rules of Vaastu construction
- 23-16. Relevance of Vaastu today
- Questions 23

Chapter 24 PERSPECTIVE DRAWINGS

- 24-1. Necessity of perspective drawings of building
- 24-2. Principle of perspective projection
- 24-3. Characteristics of perspective
- 24-4. Perspective elements
- 24-5. Classification of perspective projection
- 24-6. Distance points
- Questions 24

Chapter 25 COMPUTER AIDED BUILDING DRAWINGS

- 25-1. CAD hardware
- 25-2. CAD software
- 25-3. AutoCAD
- 25-4. Application of AutoCAD
- 25-5. Operation of AutoCAD package
- 25-6. Function keys
- 25-7. AutoCAD 2010 screen layout
- 25-8. Hardware requirement for AutoCAD 2010
- 25-9. Planning for a drawing
- 25-10. Methods to generate building drawings in AutoCAD
- Questions 25

Chapter 26 TYPICAL BUILDING DRAWINGS

- 1. Conventional signs
- 2. Symbols for electrical installations
- 3. Conventional symbols
- 4. Stretcher and header bonds
- 5. English bond
- 6. Flemish bond
- 7. Stone masonry

- 8. Cavity walls (1)
- 9. Cavity walls (2)
- 10. Door frame
- 11. Types of panelled doors
- 12. Lugged, braced and battened door
- 13. Panelled door
- 14. Glazed and panelled door
- 15. Collapsible steel door
- 16. Types of doors (1)
- 17. Types of doors (2)
- 18. Hollow core or framed flush door
- 19. Window frame
- 20. Panelled window
- 21. Glazed window
- 22. Carpentry joints (1)
- 23. Carpentry joints (2)
- 24. Lean to roof
- 25. Types of roofs (1)
- 26. Types of roofs (2)
- 27. King post truss
- 28. Details of king post truss
- 29. Queen post truss
- 30. Steel roof truss
- 31. Stair cases
- 32. Straight stairs with two flights
- 33. Details of stairs
- 34. Foundations
- 35. Model drawing showing projection of section over plan (1)
- 36. Model drawing showing projection of section over plan (2)
- 37. A building
- 38. An office building
- 39. A home
- 40. A dwelling
- 41. L.I.G. House
- 42. M.I.G. House
- 43. A residential house
- 44. A cottage
- 45. Two storeyed residential building
- 46. Semi detached house
- 47. Plan of a secondary school
- 48. Primary health centre
- 49. Post office

Chapter 27 QUESTION BANK

- 27-1. Short questions with answers in building drawing
- 27-2. Short questions with answers in building planning
- 27-3. Multiple choice questions
- 27-4. Answers of multiple choice questions
- 27-5. Short questions

Appendix UNIVERSITY EXAMINATION QUESTIONS
BIBLIOGRAPHY

INDEX