

mukandu.cd



# MUKANDU®



Services and Scope of Services Brochure

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### 1.1. Paper to CAD Conversion:

**Mukandu's** team comprises of Architects and Engineers who have rich experience across various industries and are familiar with international codes of practice. We can seamlessly put together your data and sketches to give you accurate final drawings. We not only convert, but also add value by pointing out errors and correcting them whenever needed. We ensure quality not just from a conversion standpoint but also from an operational and functional perspective.

#### SERVICES:

- ▶ Site Plans
- ▶ Floor Plans
- ▶ Exterior Elevations
- ▶ Roof Plans
- ▶ Foundation Plans
- ▶ Electrical Plans
- ▶ Plumbing Plans
- ▶ HVAC Plans

## 1.2. Construction Drawings:

At **Mukandu**, we have a highly skilled engineering team with the expertise in using software such as AutoCAD and Revit to create accurate construction drawings in a cost-effective manner. When you outsource construction drawing services, we create CAD drawings including section drawings, elevation details, site plan details, as well as presentation drawings to aid our growing list of clients from the real estate and construction industry.

### SERVICES:

- ▶ Detailed Sectional Drawings
- ▶ Fabrication Drawings
- ▶ Council Approval Drawings
- ▶ Steel Construction Detail Drawings
- ▶ Re-drawing of Construction Drawings

### 1.3. Land Development Design:

Land development design is an important part of any development project. Right from single-family residential projects to industrial parks, every project requires appropriate land development plan and drafting. This is exactly where land development design services can help individuals and businesses. Outsourcing **Mukandu** your land development and design will ensure excellent civil designs that are aesthetic and utility conscious.

#### SERVICES:

- ▶ Feasibility Studies
- ▶ Commercial Site Design
- ▶ Site Analysis
- ▶ Subdivision Projects
- ▶ Residential Development
- ▶ Community Development
- ▶ Retail Projects
- ▶ Landscape Design
- ▶ Stormwater Management
- ▶ Hydrology Reports

### 1.4. Mechanical Design:

**Mukandu's** Mechanical Design services cover the whole spectrum right from concept design to detail design and analysis. Engaging in the industry's best practices, our very strong domain knowledge and expertise in leading software, in various industry verticals offers a host of services as part of our design and drafting services.

#### SERVICES:

- ▶ Heating & Cooling Equipment Selection
- ▶ Heat Loss and/or Gain Calculations
- ▶ Heating & Cooling System Schematic Design
- ▶ Underfloor Heating System
- ▶ Tunnel Ventilation
- ▶ Basement Ventilation and CFD Analysis
- ▶ Plant Room Layout Design
- ▶ Chilled Beams System
- ▶ Duct Layout Drawings
- ▶ Mechanical Design Services

## 1.5. Electrical Design:

**Mukandu's** Electrical Design and Drafting Services offer exceptional and superior electrical designs. With the simple use of geometrical information, we deliver high-quality services by syncing electric logic diagrams with electric wires using the latest software and create electrical schematic layouts and PCB designs for all electrical and electronic equipment.

### SERVICES:

- ▶ Design & Drafting
- ▶ Electrical Site Plans Lighting Systems
- ▶ Power Systems
- ▶ Power Distribution Systems
- ▶ Fire Protection Systems

- ▶ HT Line and LT line
- ▶ Electrical, Power and Lighting System plans
- ▶ Electrical One Line Diagrams
- ▶ Electrical Power and Lighting System Plans
- ▶ Electrical Diagrams/ Layouts in Industries
- ▶ Extra Low Voltage Systems (ELV)
- ▶ Access Control and CCTV
- ▶ System Integration and PA Systems

## 1.6. Plumbing Design:

**Mukandu** has highly skilled plumbing drafters and detailers who are pioneers in plumbing designing and drafting services. We provide highly effective and accurate Plumbing Engineering Solutions in adherence to worldwide industry standards. Our engineers develop accurate Plumbing designs and drafts for residential, commercial and industrial buildings to global clients.

### SERVICES:

- ▶ Plumbing Cost Estimation
- ▶ STP (Sewage Treatment Plant) Design
- ▶ Plumbing Material Estimation
- ▶ Plumbing Modeling

- ▶ Plumbing Shop Drawings
- ▶ Plumbing Section Drawings
- ▶ Plumbing Isometric Diagrams
- ▶ Piping Modeling and Drafting
- ▶ Waste Water Collection System Drawings
- ▶ Pipe Fabrication Drawings
- ▶ Fire Fighting Systems Design Services
- ▶ Piping Cost Estimation and Measurement
- ▶ Commercial Plumbing System Drawings
- ▶ Industrial Plumbing System Drawings
- ▶ Runner Riser Diagrams

## 1.7. HVAC Design:

**Mukandu** provides design and drafting of HVAC (Heating, Ventilation, and Air Conditioning) needs across global projects. We provide HVAC designs to architects, builders, contractors, and suppliers, using the latest tools and technologies. Our services also include sizing, scheduling, schematics, creating legends, details, and control diagrams, mechanical equipment layouts, elevation drawings, coordination drawings, shop drawings, and heat load calculations which comply with worldwide civil engineering standards.

### SERVICES:

- ▶ Drafting and design services for HVAC system construction plan drawings
- ▶ Duct sizing and design layout plan drawings
- ▶ Equipment piping, sizing, and design layout plan drawings
- ▶ Schedules, schematics, legends, detail, and control diagrams
- ▶ Mechanical equipment layouts, elevation drawings, and submittals
- ▶ Addendum's, coordination drawings, specifications, shop drawings, and as-builts
- ▶ Piping layout, duct design, heat load calculations and plant sizing
- ▶ BoQ and equipment scheduling

## 2.1. Project Inception: (Pre-Design Phase)

### SERVICES:

- ▶ Facility Programming
- ▶ Space Relationships/ Flow Diagrams
- ▶ Project Development Scheduling
- ▶ Life Cycle Cost Studies
- ▶ Economic Feasibility Studies
- ▶ Agency Consulting/ Review/Approval
- ▶ Site Selection/Analysis utilization
- ▶ Environmental Studies
- ▶ Energy Studies
- ▶ Existing Facilities Surveys

- ▶ Client-Supplied Data Coordination
- ▶ Services Related to Project Management
- ▶ Presentations
- ▶ Marketing Studies
- ▶ Special Studies
- ▶ Re-Zoning Assistance
- ▶ Project Promotion

### Special Consultant's Services:

- ▶ Legal Survey
- ▶ Geotechnical Analysis
- ▶ Project Financing

## 2.2. Project Assessment: (Schematic Design Phase)

### SERVICES:

- ▶ Client-supplied Data Coordination
- ▶ Program and Budget Evaluation
- ▶ Review of Alternative Design Approaches
- ▶ Architectural Schematic Design
- ▶ Schematic Design Drawings and Documents
- ▶ Statement of Probable Construction Costs
- ▶ Client Consultation
- ▶ Interior Design Concepts
- ▶ Special Studies (Future Facilities, Environmental Impact, etc.)

- ▶ Special Submissions or Promotional Presentations

- ▶ Special Models, Perspectives or Computer Presentations

### Special Consultant's Services:

- ▶ Structural Design Concepts
- ▶ Mechanical Design Concepts
- ▶ Electrical Design Concepts
- ▶ Statements of Probable Costs
- ▶ Civil Design Concepts
- ▶ Landscape Concepts

### 2.3. Concept Approval: (Design Development Phase)

#### SERVICES:

- ▶ Client-supplied Data Coordination
- ▶ Design Coordination
- ▶ Architectural Design Development
- ▶ Design Development Drawings and Documents
- ▶ Statement of Probable Construction Costs
- ▶ Client Consultation
- ▶ Interior Design Development
- ▶ Special Studies or Reports (Planning Tenant or Rental Spaces, etc.)
- ▶ Promotional Presentations

- ▶ Models, Perspectives or Computer Presentations
- ▶ Project Management
- ▶ Agency Consultation

#### Special Consultant's Services:

- ▶ Structural Design Development
- ▶ Mechanical Design Development
- ▶ Electrical Design Development
- ▶ Statements of Probable Costs
- ▶ Civil Engineering Design Development
- ▶ Landscape Development
- ▶ Detailed Construction Cost Estimates or Quantity Surveys

## 2.4. Approvals from Authorities: (Construction Documents Phase)

### SERVICES:

- ▶ Client-supplied Data Coordination
- ▶ Project Coordination
- ▶ Architectural Construction Documents  
(Working Drawings, Form of Construction Contract and Specifications)
- ▶ Document Checking and Coordination
- ▶ Statement of Probable Construction Costs
- ▶ Client Consultation
- ▶ Interior Construction Documents
- ▶ Alternative Bid Details and Special Bid Documents

- ▶ Project Management
- ▶ Agency Consultation

### Special Consultant's Services:

- ▶ Structural Construction Documents
- ▶ Mechanical Construction Documents
- ▶ Electrical Construction Documents
- ▶ Statements of Probable Costs
- ▶ Civil Engineering Construction Documents
- ▶ Landscape Documents
- ▶ Detailed Construction Cost Estimates or Quantity Surveys

## 2.5.1. Construction Contract: (Bidding or Negotiation)

### SERVICES:

- ▶ Client-supplied Data Coordination
- ▶ Project Coordination
- ▶ Issue Bidding Documents
- ▶ Issue Addenda
- ▶ Bid Evaluation
- ▶ Construction Contract
- ▶ Client Consultation
- ▶ Separate Bids or Negotiated Bids
- ▶ Services Related to Bidders' Proposals

- ▶ Project Management

### Special Consultant's Services:

- ▶ Issue Bidding Documents
- ▶ Issue Addenda
- ▶ Bid Evaluation
- ▶ Issue Bidding Documents
- ▶ Issue Addenda
- ▶ Bid Evaluation

## 2.5.2. Construction Contract: (Construction Contract Administration)

### SERVICES:

- ▶ Field Review
- ▶ Progress Reports and Evaluation
- ▶ Process Certificates for Payment
- ▶ Interpretation of Contract Documents
- ▶ Review of Shop Drawing Product Data/Sample
- ▶ Change Orders
- ▶ Substantial Performance Report and Certification
- ▶ Client Consultation
- ▶ Interior Construction review
- ▶ Full-time Project Representation

- ▶ Administration of Separate Contracts
- ▶ Project Management
- ▶ Promotional Material
- ▶ Record Drawings
- ▶ Agency Consultation

### Special Consultant's Services:

- ▶ Structural review and Reports
- ▶ Mechanical review and Reports
- ▶ Electrical review and Reports
- ▶ Record Drawings
- ▶ Certification of Progress
- ▶ Civil Construction review
- ▶ Landscape Inspection
- ▶ Detailed Cost Accounting

## 2.6. Substantial Performance of Construction or Occupancy Permit: (Post-Construction)

### SERVICES:

- ▶ Field Review
- ▶ Deficiency Assessment
- ▶ Review of Warranties
- ▶ Total Performance Inspection and Certification
- ▶ Client Consultation
- ▶ Start-up Assistance
- ▶ One-year Warranty Inspections

### Special Consultant's Services:

- ▶ Fine Arts, Crafts and Graphics

- ▶ Non-building Equipment Selection
- ▶ Building Analysis and Reports
- ▶ Services Related to Alterations and Demolition
- ▶ Life Cycle Cost Monitoring
- ▶ Environmental Monitoring
- ▶ One-year Warranty Inspections
- ▶ Start-up Assistance
- ▶ Systems Performance Review
- ▶ Non-building Equipment Selection
- ▶ Life Cycle Cost Monitoring
- ▶ Services related to Alterations and Demolition