



Profile

(Civil & Structural Engineering)



(Mechanical Engineering)



MANTRA UDYOG

#1090, (First Floor), Main Road
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MANTRA SERVICES:

Civil and Structural Engineering:

Topographic Survey:



- Study of Topo Sheet in connection to actual surface condition.
- Preparation of Contour Map and Site Map.
- Level Survey
- Calculation of Earth Volume for cutting and Filling.

Soil Investigation:



- Conducting boring Test up to 15m to 30m depending upon the structure.
- Calculation of Soil Penetration Test (SPT), Soil Bearing Capacity (SBC), California Bearing Ratio (CBR)
- Conducting Laboratory Test of soil such as Grain Size Analysis, Atterberg's limit, moisture Content and Field Dry Density (FDD)
- Preparation of Soil Report showing details of soil classification in different level.



Land Development:

- Consultancy on Land leveling as per contour map obtained from topographic survey.
- Preparation of Layout plan showing built up area, approach road, drainage, sewerage and water supply.
- Preparation of Lighting Layout in the specified layout plan.
- Planning for Gardening and Plantation for balancing the eco system.

Road Designing:

- Conducting Road Survey.
- Conducting CBR Test.
- Designing of Road Crust.
- Designing of Cross Drainage work, Minor Bridges with Discharge calculation.
- Preparation of CAD Drawings, Maps, and LS, CS of Road Embankment.

Designing of Drainage & Sewerage System:

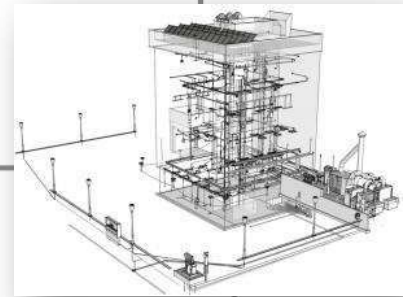
- Carrying out studies of Rainfall and Surface runoff.
- Carrying out studies of Preliminary Drainage.
- Designing of Utility and Storm drainage Plan.
- Designing of Drain Channel and sewerage pit.
- Preparation of Bill of Quantity (BOQ)



Structural Designing & Detailing:



- Calculation of different loads as per national Building Code (NBC) for Industrial, Commercial and Residential Structure.
- Designing of Water Retaining Structure (overhead and underground storage tank), scour protecting wall as per BIS
- Detailing of composite and individual section of RCC and Steel Structure as BIS.
- Development of Drawings in CAD for construction.
- Preparation Bill of Quantity (BOQ).

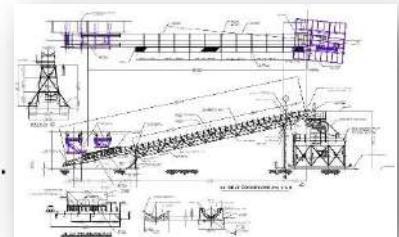


3D Modeling of Structure:

- Developing 3D models of Industrial, Commercial, and Residential Buildings for better conceptualization of the construction.

Conveyor System Design

- **Basic Engineering:**
 - Conveyor GA Drawings of conveyors with load DATA.
- **Detail Engineering:**
 - Design and detailing of Conveyors.
 - BOQ
 - Technical specifications of equipment,



NDT & Stability Certification:

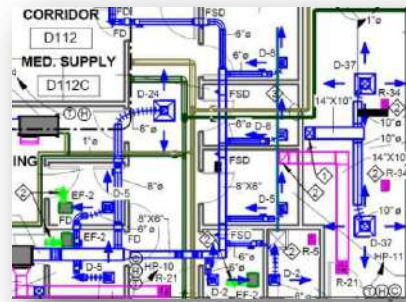
- Conducting NDT for different Civil and Mechanical structures and material used in the structure.
- Inspection and Analysis of the structure for its stability.
- Liaisoning with Boiler and Factory inspector to obtain Safety Certificate and other Approvals.



MEP Solutions:

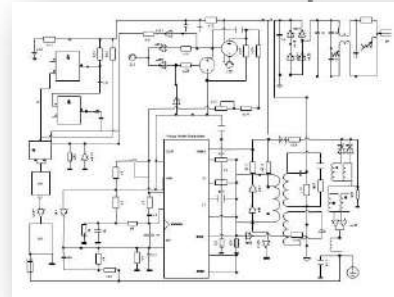
HVAC

- Preparation of Design Basis Report
- Heat Load estimation
- Space Planning in coordination with other services
- Equipment Selection as per above space planning
- Preparation of Pipe & duct routing scheme at layout
- Preparation of P&ID & Airflow
- Preparation of HVAC layout
- Preparation Bill of Quantity & Tender
- Preparation of GFC Drawings



Electrical (LV & ELV)

- Preparation of Design Basis Report
- Electrical Load estimation
- Space Planning in coordination with other services
- Equipment Selection as per above space planning
- Preparation Electrical Load List & SLD



Plumbing & Fire fighting

- Preparation of Design Basis Report
- Space Planning in coordination with other services
- Equipment Selection as per above space planning
- Drainage layout
- Water Supply layout
- Pipe Schematic for plumbing system
- Rain water Harvesting
- Plumbing layout (drainage +water supply+ rain water)
- STP & WTP pump room layout
- Plumbing external layout
- Sprinkler Layout
- Hydrant layout
- Fire Pump room layout
- Fire pipe schematic layout
- Fire external layout
- Preparation Bill of qty & Tender
- GFC Drawings

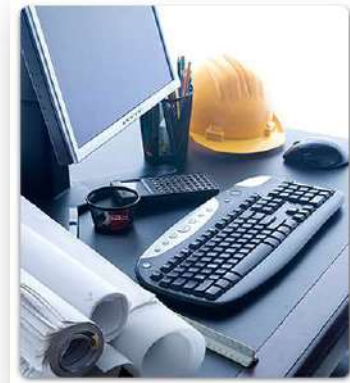


SL No	PROJECT	CLIENT	SERVICE
1	SOIL TESTING SOIL COMPACTION TESTING CPTu TESTING	1. Vedanta Ltd. Jharsuguda 2. OPGC, Banahar Palli	. Bore Drilling up to 30m at 30m interval . Back Filling, SPT and UDS collection . Soil Testing and Report Preparation.
2	STRUCTURAL DESIGNING & Detailing	1. IFFCO, Paradeep 2. Vedanta Ltd. 3. TATA STEEL, JODA 4. IMFA, Chodwar 5. PPL, Paradeep	.Load Calculation. .BOQ Preparation .Detailing with CAD GFC Drawing Preparation.
3	ROAD DESIGNING	1. NABARD assisted road project at Kendrapara, Pattamundai 2. PMGSY Road in Jagatsinghpur, Mayurbhanj, Balasore and Sundergarh, Cuttack, District of Orissa.	.Conducting Road Survey and CBR test .Designing of road crust, Cross Drain and Dischrge volume calculation .Preparation of LS,CS and road Embankment report with CAD drawing.
4	LAND SCAPING	1. BOP Area, Vedanta Limited (550Acre)	.Preparation of Layout plan showing built up area, approach road, drainage, sewerage and water supply, lighting, Gardening etc.
5	TOPOGRAPHIC SURVEY	1. ASH POND CPP, Vedanta 2. New Railway Siding, KKGM 3. POST level Survey for FOS study	. Physical Survey . Preparation of Contour Map and Site Map.
6	3D Modelling	1. 3D modeling of Structure of Lime Stone Crushing Plant of L&T, Kansbahal 2. Amrita Shopping Arcade, Bhubaneswar	. Preparation of 3D model showing all floors and sections.
7	Quality Control	1.Vedanta Ltd.	. Preparation of Mix Design . Conducting SBC and CBR testing. . Preparation of Test Record.
8	NDT & Stability Certification	1. Vedanta Ltd. Jharsuguda 2. BALCO , Korba, CG 3. IMFA, Chaudwar 4. PPL , Paradeep 5. Vedanta Ltd. (GDCL), Lanjigarh	. Conducting prescribed test for material used in the structure (Civil & Mechanical) . Inspection of constructed work at different important stages.
9	MEP Solutions	1. Apollo Hospital, Vedanta, Jharsuguda 2. SRL. Patho LAB, Vedanta, Jharsuguda 3. CPP Fire Station, Vedanta, Jharsuguda 4. Electrical Panel Building, IMFA, Sukinda	Heat Load, Duct layout and capacity design. Lighting Load Calculation, Cable distribution Layout Plumbing Layout of Drainage, Water Supply and Rain Water
10	Conveyor Designing	1. TATA STEEL 2. IMFA 3. TSM 4. AM/NS	1. Basic Engineering, GA preparation 2. Detail Engineering



Software Proficiency:

1. StaadPro
2. STRUDS
3. Revit Architectural
4. Autodesk Civil3D
5. AutoCAD
6. Revit MEP

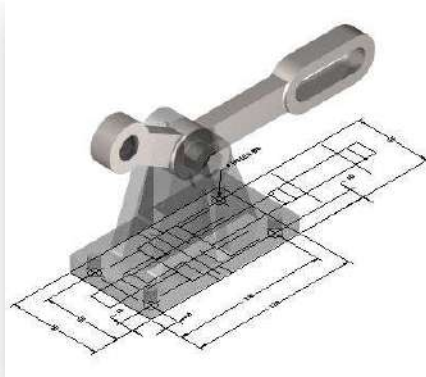


Fact Sheet:

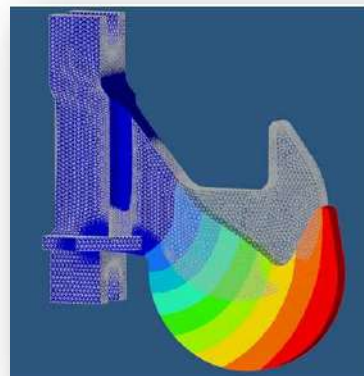
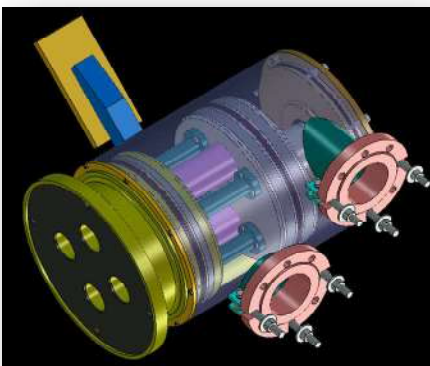
Work Experience	Above 18 years	12 – 18 years	5 – 12 years	0 – 5 years
Designer/Detailer	3	1	2	4
Field Personnel	0	0	3	2
3DModeller & CAD Operator			2	10



(Mechanical Engineering)



- Development of Manufacturing Drawing from existing components through Reverse Engineering.
- 3D modeling of components, Sub-Assemblies, Assemblies of different Machineries.
- Digitization of existing Drawings from paper medium to digitized (CAD Conversion) form to be stored as soft copy and also to retrieve to paper medium through plotting.
- Preparation of animated models from existing 2D drawings to show the actual function of the machines, plants etc. Development of Training modules.
- Analysis of the components for their wear and tear.
- Raster editing of existing scanned drawing, Descaling, Deskewing, Rubber sheeting, Edge Matching etc.



CAD (projects)

SL NO	PROJECT	CLIENT	TIME PERIOD	SERVICE
1	REVERSE ENGINEERING	NALCO TATA STEEL(FAP) VEDANTA BALCO NINL IFFCO HINDALCO	3Yrs 3 Yr 7 Yrs 2 Yrs 5 Yrs 1 yr 2 Yrs	1. Detailed Preparation of Manufacturing Drawing as per ISO Standard, of existing components, spares, sub-assemblies, assemblies. 2. Development of AutoCAD drawings from existing paper drawings.
2	REVERSE ENGINEERING THRU SOLID MODELLING	TATA STEEL (FAP) HINDALCO TSPL	1yr 1Yr 1 Yr	Detailed Preparation of Manufacturing Drawing as per ISO Standard of existing components, spares, sub-assemblies, assemblies.
3	CAD CONVERSION	TATA STEEL (FAP) TGS FACOR IFFCO	3 yrs. 2Yr 2Yr	2. Development of AutoCAD drawings from existing paper drawings.
4	DEVELOPMENT OF 3D MODELS FROM 2D DRAWINGS	L&T, KANSBAHAL	2yrs	1. Development of solid model of individual components. 2. Making assemblies of components.
5.	DEVELOPMENTS OF ANIMATED 3D MODELS	L&T, KANSBAHAL TATA STEEL(FAP) OMC, TATA STEEL (Noamundi) RUNGTA MINES VEDANTA BALASORE ALLOYS IMFA	2yrs	Preparation of animated models from existing 2D drawings to show the actual function of the machines, plants ets. Development of Training modules on SOPs.
6.	RASTER EDTING	NALCO	6 Months	Raster editing of existing scanned drawing, Descaling, Deskewing, Rubber sheeting, Edge Matching etc.
7	MAP PREPARATION	POSTAL DEPTT.	3 Yrs	Beat Map Preparation, Postal Divisional Map Preparation
8	FEM ANALYSIS	VENDATA, JHARSUGUDA	1yr	Analysis of Physical, Chemical properties, FEM Analysis, Design Optimization



Software Proficiency

7. AutoCAD
8. IronCAD
9. Pro/E
CATIA
10. Autodesk Raster Design
11. Ansys
12. Tekla



FACT SHEET:

Technical Personals in CAD Services in MANTRA UDYOG

Work Experience	Above 18 years	12 – 18 years	5 – 12 years	0 – 5 years
Engineers	1	1	3	7
CAD Personals	0	0	0	12

WE ASSURE BEST OF OUR SERVICES AT ALL THE TIME TO COME

