

INNERWORKS was founded to meet a critical need for attentive, pro-active and imaginative Design and Project Management consultancy. Good engineering is vital; but without creativity, experience, exposure, and ownership, it is not much more than drafting. Innerworks looks at your project as our own: how can we make it better, more cost effective, more durable and easy to maintain? How can we improve efficiency and thus viability? How can one company provide one, great, integrated design solution?

Innerworks looks forward to bringing that vision to you.

- One Company. Multiple Solutions –



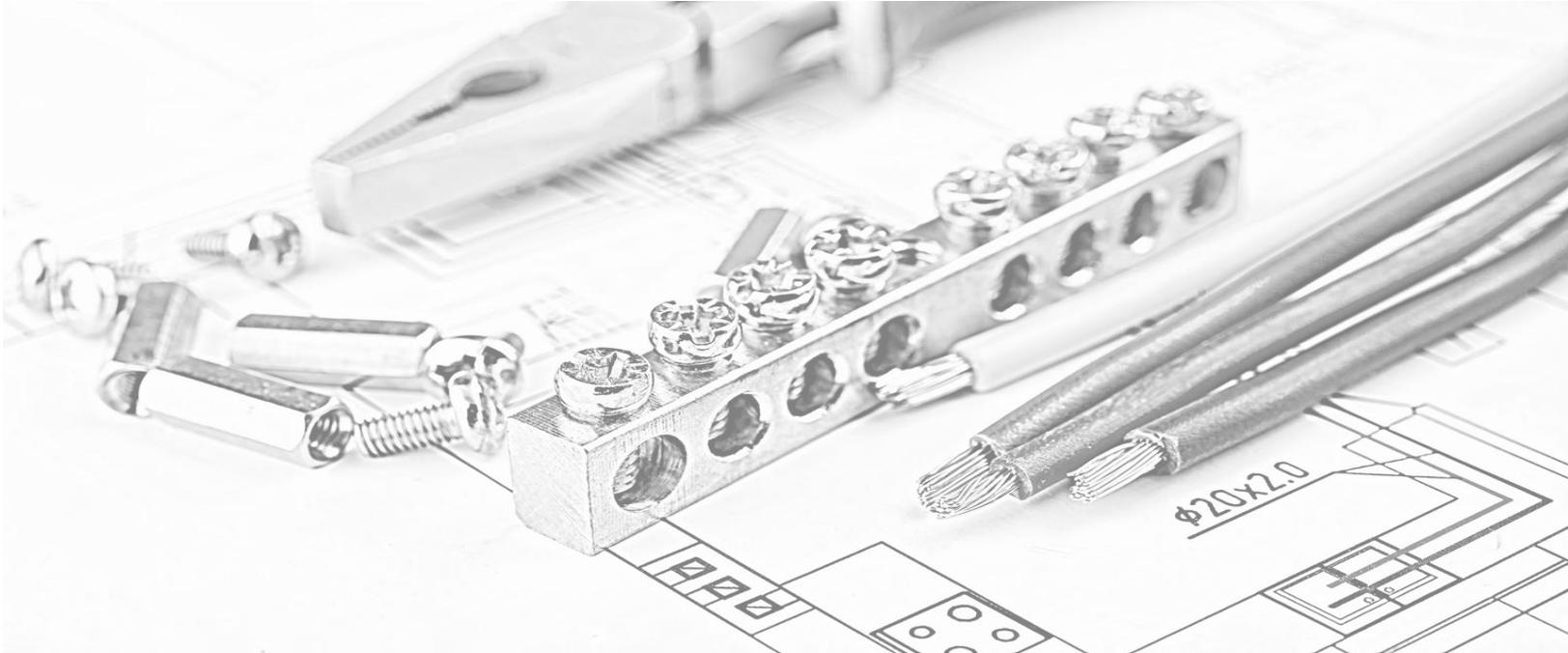
Structural Design Services

Innerworks is able to provide structural designs that conform to Indian Building Code Standards and requirements, while still seeking the greatest efficiencies in steel and cement consumption, building material types, unobstructed floor plans, installed plant layout, and more. When structural design is considered simultaneously with MEP services, the client benefits through better coordination, more effective designs, and faster design turnaround.

The Consultancy Services shall consist of design of engineering services for:

- Foundation engineering
- Structural Engineering
- Civil works related to other services including landscape and external Development
- Recommendation of water proofing treatment for basement, podium, toilets, terraces and balconies

Design Considerations: Study the site and existing contours; consideration of utilities, client requirements; assisting in conducting soil investigation and setting norms for the same; design guidance, design information, and design document requirements.

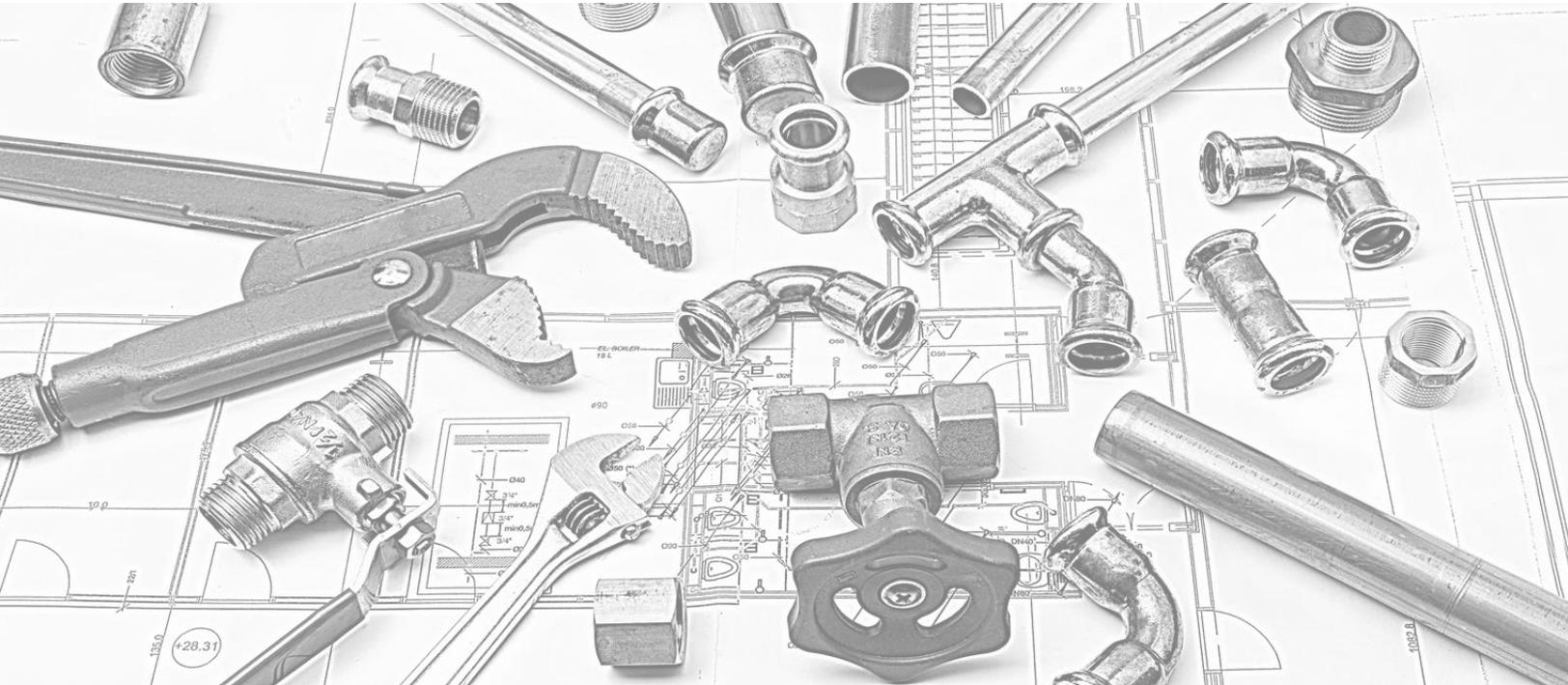


Electrical Design Services

Innerworks has a talented and experienced team for design and value-engineering of high performance, high-efficiency electrical solutions. From Hospitals, Hotels, Industrial, Commercial Offices buildings, Commercial Kitchen, Residential buildings, private homes, educational facilities, to office interior space, we have the team and experience to provide the most effective designs:

- Comprehensive electrical load calculations
- Light and power for all internal and external areas
- Lightning protection system
- Telephone systems - including EPABX
- Power generation for full standby power supply
- Earthing systems
- CCTV system
- VDP system
- Solar power system

Design Considerations: Substation layout; HT and LT single line diagram; HT/LT panel room layout; electrical distribution system comprising of Transformer, RMU,LT Panels, APFC Panel, distribution boards, cables and cable trays layout, Floor Raceway layout; lighting with circuiting; convenience power; DG room layout along with panel details; earthing and lightning protection systems; UPS power and battery backup calculation as per design demand load factor; Security systems including perimeter for CCTV system, access controls and VDP system infrastructure design.

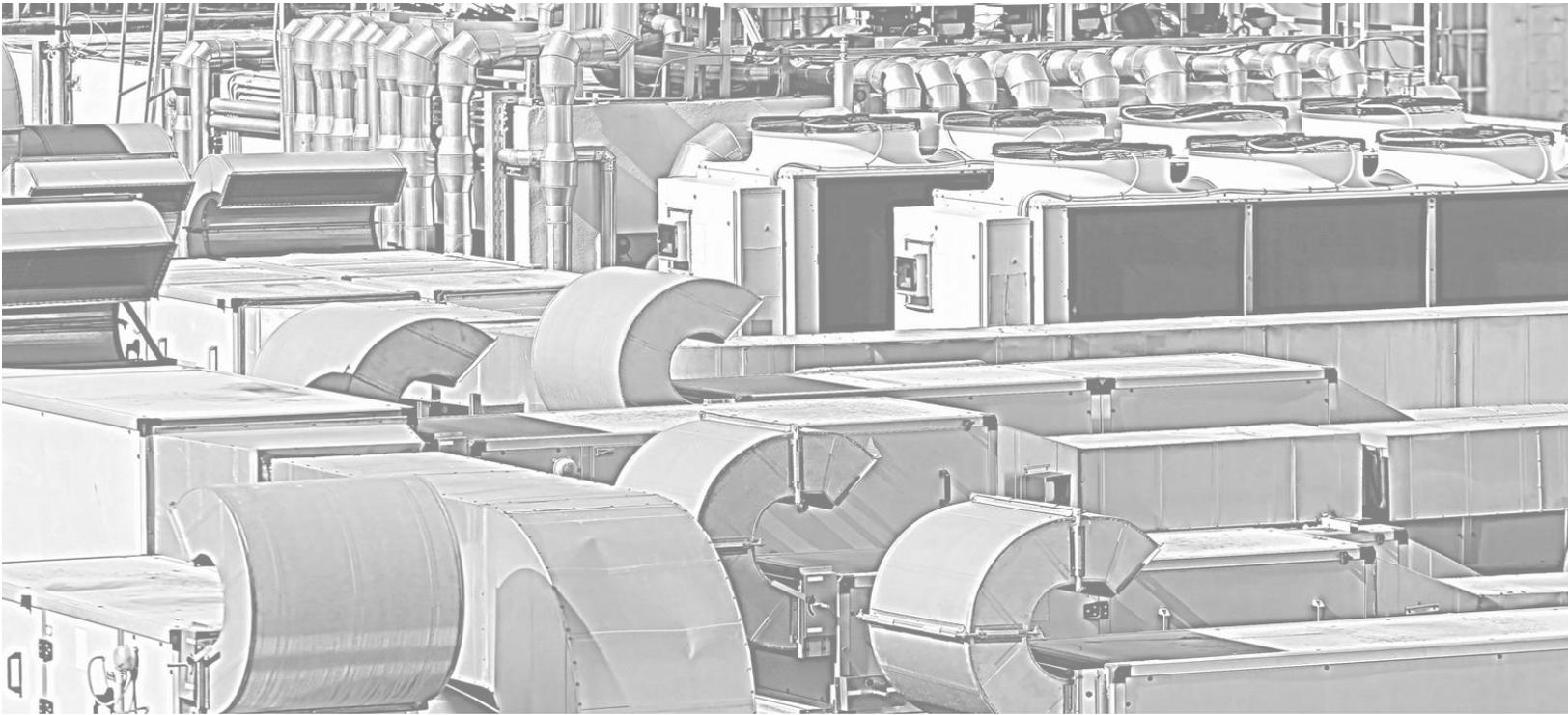


Public Health and Fire Fighting Design Services

Public health Engineering requires not only a knowledge of operational design, but environmental regulations - and even aesthetics. Innerworks understands design requirements for a wide variety of building types, knows the best vendors and contractors, and shares an appreciation of what products would best suit the needs of your project, including:

- Water supply collection, pumping and piping distribution system
- Central hot water generation like boiler, heat pump and solar water system
- Hydro pneumatic system for distribution of treated water
- Storm water harvesting, disposal system and irrigation system
- Soil and waste drainage system
- Water treatment, sewage treatment plant and RO water system
- Fire Hydrant, hose reel system and sprinkler system
- FM 200 gas suppression system
- Fire alarm and public address system
- LPG Reticulated and LPG LOT and gas leak detection system

Design Considerations: Comprehensive water demand calculations, along with design of water tanks and pump room layout; hot and cold-water distribution; steam boilers; heat pump and Solar hybrid system, soil and waste, and storm-water system; sewage treatment plant, water treatment and RO plant design calculation and layout; firefighting pump rooms and systems; sprinkler systems; FM 200 gas suppression design calculation and layout system gas bank, LPG gas piping design and layout with gas leak detection system.



HVAC Design Services

HVAC solutions require careful consideration of many more factors than cooling: flexibility, efficiency, maintenance, LEED, coordination with BMS, and more. Innerworks understands these needs, and is positioned to provide solutions that take your CAPEX and OPEX objectives as far as possible for:

- Air Conditioning and Refrigeration System
- Ventilation and Smoke Extraction system
- Lift and Staircase pressurization System
- VAV / VRF and Package AC

Design Considerations: HVAC (Heating Ventilation and Air Conditioning) systems: Comprehensive HVAC including design calculations, Schematics. Preparation of drawings internal services integrating with Plant room, AHU rooms, Cooling towers, ventilation fan rooms etc. Design Solutions, which are based on energy competent drawing and methodical approach towards equipment sizing by considering various factors such as climate, building configuration, orientation, space usage, zoning to optimize energy utilization. Offering design solutions that comply to ASHRAE, CIBSE guidelines, National Building Code (NBC-2016), Local Building By-laws and Energy Conservation Act.



Project Management Services

Innerworks is a recognized name in project management in India, with a reputation for success, integrity, and thoroughness. Innerworks' team has provided its expert project management services for corporate office buildings, hotels, schools and universities - as well as interiors of many of the same. Innerworks has honed its processes and developed the human resources necessary to succeed in this challenging role. Whether you are interested in building a high-rise residential building, a university campus, a hotel refurbishment, or an IT office interior, our template and process-driven services will ensure that your project is executed to the highest standards.

Innerworks's project management services include

- Design Team selection
- Design Management
- Program Management
- Quantity Survey and Cost Management
- Pre-Contract Commercial Management
- Post Contract Management
- Construction Man Management
- Bill Certification Management
- Post Construction Management

Considerations: development of detailed project schedule for breakdown of pre, live, and post project time stages; use of "all factors" grading process for designers, vendors and contractors to select best value partners vs only best price; safety as leading factor in all selections, non-negotiable; value engineering to provide cost savings and future-proofing; using template-driven process to ensure all stake-holders are aware of expectations and responsibilities from bid to win to execution; focus on total transparency.



Commercial Kitchen Design Services

Innerworks has an extensive exposure and experience in Commercial Kitchen, Industrial Kitchen, Educational Institution, Restaurants and Bars, Food Courts and Fast Food projects. In terms of functional design and MEP requirements, our team is both capable and accomplished.

Strong commercial kitchen design requires knowledge of food preparation processes; work flow; equipment requirements; food-type segregations; and air, water and electrical performance and safety requirements. Our services in kitchen design and delivery includes:

- Space planning: functional and operational use of spaces
- Concept and detail drawings: flooring, lighting, ceiling, kitchen equipment layout and furniture, hood and ventilation systems, water/sewerage, and electrical plans
- Plumbing layout including hot and cold water via boilers, heaters, solar and heat pump
- Steam system layout
- LPG gas bank VOT and LOT gas system along with gas leak detection system
- Garbage refer, organic waste converter, chute plans with odor control and compactor
- Cold room and laundry equipment planning
- Hygiene

Design Considerations: Survey, traffic flow; service volume; cuisine types/equipment requirements; budgetary requirements; comprehensive hot and cold water distribution with sizing equipment and drain along with grease trap; electrical load calculation as per equipment; lighting for space; gas consumption and designing of LPG gas bank and system including gas leak system; ventilation system design calculation for supply and exhaust hood and ducting (kitchen Vs public area) including AC; cold room and garbage room sizing including odour control; organic waste converter; grease trap; laundry space management and planning for equipment; safety equipment access and replacement; durability.



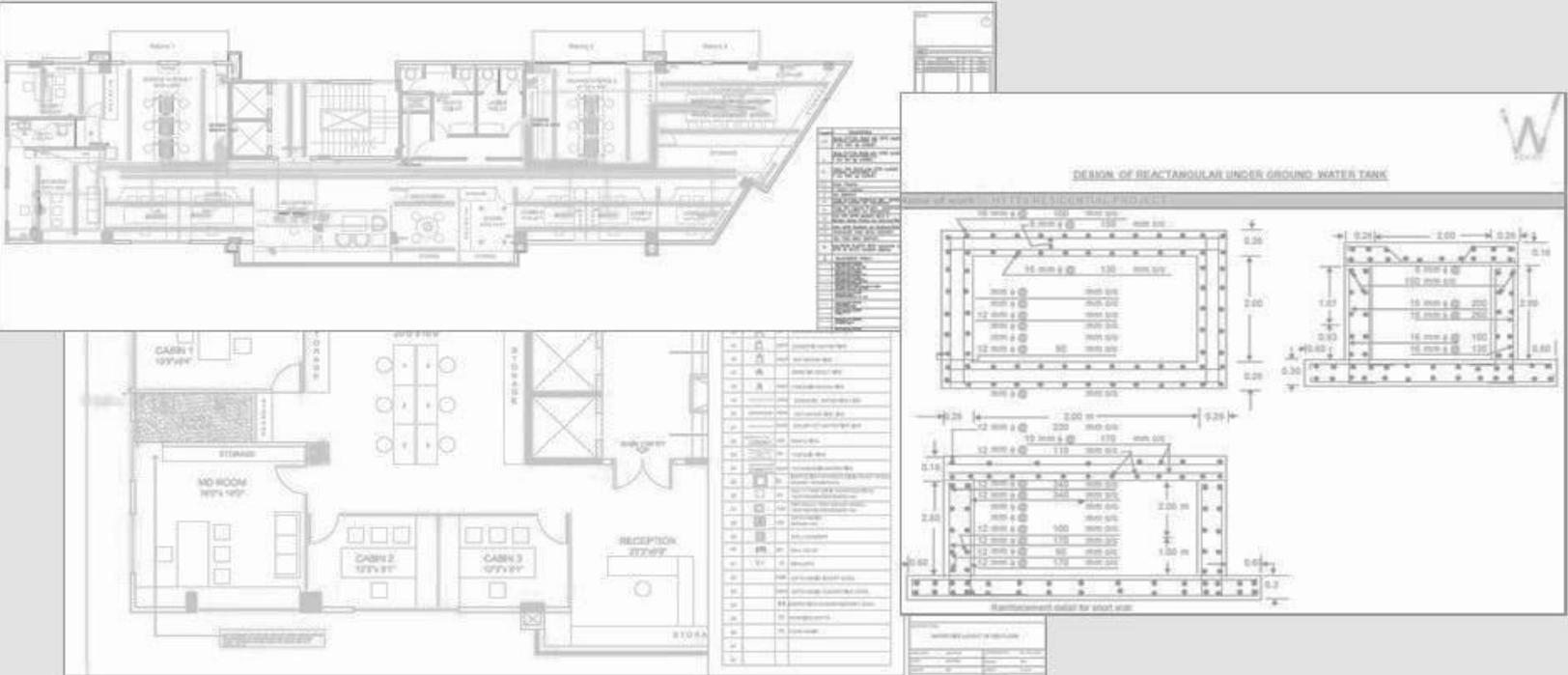
Value Added Services: Technical Due Diligence

Innerworks recognises that, as an investor or lender in an Indian real estate project, you have a financial exposure that is measured by technical aspects on site which are far different from a balance sheet. As a project management and MEP firm in our own right we apply relevant technical knowledge and experience to our audit process, guiding you through the details.

- At the technical due diligence level, we offer comprehensive and professional analysis
- At the pre-investment stage, we assess a potential project and evaluate its feasibility. Our comprehensive advisory report looks at an investment from all angles - location, market conditions, roadwork and power plans, water availability, and more - so that you are able to make an informed decision about the investment.
- For live projects, we offer continued services into the pre-construction and construction stages, with regular supervision and assessments that track progress, costs and cash flow forecasts, quality, and any additional information requested by the lender/investor.

Innerworks 's technical audit services include:

- Advisory reports prior to investment
- Time to complete/cost to complete
- Budget/BOQ validation
- Contract peer review
- Site inspections: quality, progress, safety
- Costing validation/bill checking



Value Added Services: Design Management

Everyone wants a smoothly delivered project. But if the focus on an accountable process only begins at the execution stage, the battle may be lost before it even begins. Unchecked drawings coming to site at the last moment, from each respective agency - this is the reality of a great many projects, and it leads to chaos and lack of transparency - not to mention stress and financial uncertainty - until the end of the project.

Smooth design management is thus critical to a successful project. Planning, sequencing, and organisation allows for up front agreement and coordination by all design participants on drawings, design styles, templates, fonts and integrated numbering. It enables clear agreement on drawing delivery dates. Good design management also provides time for identifying mistakes and value engineering.

Innerworks's design management consists of:

- Assistance in developing the design brief
- Development of pre-project flow chart (drawings package dates)
- Team selection via RFP/RFQ: architectural, structural, cladding, ID, electrical, plumbing, HVAC, lighting, landscape
- Design kickoff: induction and sign off on common design format, common project numbering system, drawing lists for design packages, and delivery commitment dates
- Regular design review meetings and drawing follow up
- Value engineering

Key considerations: selection of the most appropriate designers/consultants for the type of project planned; relevant experience; willingness to work as part of a consultant-led team.



Value Added Services: Quality Assurance/Quality Control

It should seem an obvious dilemma: the team doing the construction work - penalised for defects - may not be the best candidate to identify those defects. Just as you use an auditor to review a company's books, Innerworks's quality assurance services serve as an oversight to ensure the best possible quality sight. And while it is easy to point out errors and omissions of others, such flaws means time and cost to you: a small amount of precise prevention is more valuable than a large amount of correction. Thus, Innerworks calls upon our long experience in project management to provide training, guidance, and our own pre-execution checklists to help the contractors prevent costly and time-consuming quality failures. Such steps may not prevent every matter, but is more in your interests than repeating problems without solutions.

Innerworks's quality assurance and quality control services include

- A review of the design and BOQ for design issues that can lead to quality challenges
- Review of integrated schedule to determine if sequence is optimum for quality
- Regular visits
- Checklists for quality concreting, plastering, electrical work, water pipe fitting, etc.
- Training in use of checklists and other quality assurance procedures and practices
- Weekly/monthly reports, with photographs, of quality issues, solutions, and preventions

Considerations: review of site, review of design and BOQ, review of contractor and their QA processes; review of contract and its responsibilities - and penalties for missing them; review of project sequence schedule.



Value Added Services: Quantity Surveying (QS) and Cost Management

When you are considering building options, solid cost information is your key driver. You need accurate estimates of consultant rates, material quantities and rates – even updated costs of labour and equipment. Every item, no matter how small, matters when it is multiplied by a million or more square feet. Innerworks is able to provide cost analysis from the experience base of a company that executes projects, not just estimates them. Our practical and up to date experience in sourcing the very best rates, factoring in accurate wastage, and estimating realistic consultant time requirements are just a few of the capabilities Innerworks can offer that a typical QS agency cannot, thus saving you money and helping you forecast more accurate cash flows.

And, of course, only a company that actually manages the design process of projects can value engineer your project to help make sure that the quantities estimated are the lowest volume requirement; that the items are the most suitable; and the design is the most appropriate. Finally, by being a part of the design and project management process, the flow from QS and actual cost management remains transparent, pro-active, and responsible.

Some of the important value-adds Innerworks brings to QS includes:

- Building and maintaining a National Vendor List to provide a wide, competitive and constantly updated database of potential bidders for every package
- Building and maintaining a material cost database of the latest costs we are experiencing first-hand across our projects, nationwide
- A trained team, with first-hand, practical project execution experience

- Our continuous worldwide search for architects, contractors, technologies and techniques to bring in fresh design concepts, value engineer designs, and improve efficiency, speed – and savings

After building value-engineered BOQ's, Innerworks can stay engaged for the duration to handle total project cost management:

- Tender Management - To help identify, negotiate and bring aboard the right contractors and vendors who will provide product and service at the estimated rate.
- Bill Certification - To measure incoming materials, usage, and wastage to provide bill certification to ensure costs stay aligned with estimates and work orders and present the same

Innerworks value-adds for Cost Management:

- Market knowledge of contractors and vendors
- Strong leverage, as a regular selector of vendor and contractor services, to push for best rates
- Template-driven process for legally-vetted tender documents, work orders
- “All Factors” selection process to ensure best value work orders and purchase orders
- Trained engineers and excellent site processes for bill certification
- Cost and cash flow tracking documentation
- Integration of project management skills to provide accurate estimates of costs to finish and future cash flow forecasts



Value Added Services: Safety (HSSE)

Innerworks's experience and template-driven excellence goes beyond our construction management capabilities; we are a leader in on-site safety, a crucial aspect of any project. Innerworks sets and maintains the highest standards in order to ensure that all construction days are safe days. Whether it is refurbishing a 15,000 square foot office space or building a multi-million sft greenfield project, Innerworks has the expertise to make monitor, advise, and conduct on-site training in order to actively prevent incidents.

Our unique safety process begins at the start of any project: by drafting all levels of safety requirements and tailoring them to the project. From fundamental requirements like housekeeping, precautions against fire, explosion, and electrical shock, to broad requirements - like ensuring first aid facilities, clean drinking water, and malaria prevention - our safety consultants and safety process make sure that the work place is safe and everyone on-site is well-trained.

In order to make sure that every hazard is prevented, innerworks provides:

➤ **Training**

Innerworks – whether as an external safety inspector or as part of full-scope project management services - provides initial safety training as well as conducts bi-weekly fire, safety, and first-aid training sessions, ensuring each worker is aware of the safety requirements and risks - and whom to contact in case of an emergency and/or for precautionary action.

➤ **Facilities:**

We make sure adequate health, hygiene, welfare, and first aid facilities are provided.

➤ **Procedures**

We proactively enforce our documented safety procedures for pcc, footing, raft concreting, slab concreting, scaffolding, etc., in order to anticipate and remedy anything that might put the site personnel in jeopardy.

➤ **Planning**

We ensure that the electrical and mechanical aspects of the project are fully planned and installed to the highest safety standards, keeping in mind the safety of those on site and those who will be using the building upon its completion.

➤ **Documentation**

Tracking of all training sessions, precautions, violations and implemented procedures, to audit-able standards.

➤ **Audits**

We conduct monthly safety audits to ensure that the project site is compliant. Innerworks sends the reports to all stakeholders in the project on a real time basis for corrective action.

Innerworks's team has guaranteed safety for dozens of companies in civil, hospitality and corporate interior spaces. Our managers know and understand safety and have the right experience to make sure that your project is safe one

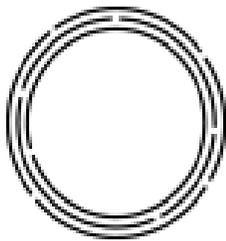
Innerworks's safety processes are automatically available as part of our full-scope project management services; whereby dedicated safety personnel are placed on site and report directly to the safety head.

Additionally, Innerworks safety offers:

- **Safety Management**, with a team at site, using Innerworks safety documents and processes
- **Stand-alone Safety Audits**, with regularly scheduled visits and comprehensive reports



CALIFORNIA
BURRITO



THE CIRCLE



INNERWORKS DESIGN AND CONSULTANCY

16 A.R. PLAZA ROBERTSON ROAD

BANGALORE 560005 INDIA

T: +91 80 42437000 / 41527862

WWW.INNERWORKS.IN