



ALLIED ENGINEERING CONSULTANTS (PVT.) LIMITED
OFFSHORING ARCHITECTURAL- ENGINEERING AND
CAD/CAM SERVICES

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ALLIED ENGINEERING CONSULTANTS (PVT.) LIMITED

19-A GULBERG II, LAHORE

PROFILE

Being a well-recognized design & consultancy firm in Pakistan for the last 58 years, Allied Engineering Consultants (Pvt.) Ltd. is now fully prepared and organized to compete the International market with respect to design and technology in all aspects of Electrical, Civil and Architectural Engineering designs. Allied Engineering Consultants AEC (Pvt.) Ltd has full spectrum design teams of Civil, Electrical, Mechanical, Environmental, Industrial, HVAC, Public Health, LAN, Landscaping Design and Supervision Engineers, Architects, City Planners, Sociologists, Economists, Medical and Education Planners and Information Technology Professionals. One attribute of the company is its unique ability to marry technology and expertise from a wide range of disciplines to its solutions, designs, products and services. In the fields of IT, telecommunication and Firefighting, Allied Engineering consultants (Pvt.) Ltd. provides services and solutions.

It is a leading consulting and engineering company which is led by a team of professionals which are fully experienced and talented, thus ensures to support the clients with the best level of responsibility and commitment. Allied Engineering consultants (Pvt.) Ltd. has acquired the necessary skills and confidence with the collection of hundreds of projects and expanding for more than 58 years. It is capable of handling the most demanding tasks and challenges. The external process does not reflect the quality of work does by Allied Engineering consultants (Pvt.) Ltd. but is found internally throughout our operations and organizational structure. Allied Engineering Consultants (Pvt.) Ltd. is continuously assigned by government ministries and private sector to participate in the most challenging and exciting projects.

We have successfully accomplished a vast experience being a leading consultant agency in the field of construction and designs maintaining our best standards technology wise and introducing creative ideas from canvas to an actual ground.

ARCHITECTURE DESIGN

Architecture is both the process and the product of planning, designing, and constructing buildings and other physical structures. Architectural works, in the material form of buildings, are often perceived as cultural symbols and as works of art. Historical civilizations are often identified with their surviving architectural achievements.

ARCHITECTURAL SCALES AND MODELS

Architectural models are being constructed at much smaller scale than their 1:1 counterpart

The scales and their architectural use is broadly as follows:

- 1:1 Full (or real) size for details
- 1:2 Details
- 1:5 Details
- 1:10 Interior spaces/furniture
- 1:20 Interior spaces/furniture
- 1:50 Interior spaces/detailed floor plans/different floor levels
- 1:100 Building plans/layouts
- 1:500 Building layouts/site plans
- 1:1000 Urban scale for site or location plans

- 1:1250 Site plans
- 1:2500 Site plans/city maps

We Allied Engineering Consultants as a lead architecture, engineering and planning firm consider all these models and scales which are now a days being used worldwide.

DESIGNING SOFTWARES

Microstation, Sketchup, Revit Architecture, Softplan,,Vectorworks Architecture, AutoCAD Architecture, Punch Software, Chief Architect and ArchiCAD are some of the software used by Allied Engineering Consultants (Pvt.) Ltd. for the purpose of 2D and 3D designing.

INTERIOR DESIGN

Interior design is the art and science of enhancing the interiors, sometimes including the exterior, of a space or building, to achieve a healthier and more aesthetically pleasing environment for the end user. An interior designer is someone who plans, researches, coordinates, and manages such projects. Interior design is a multifaceted profession that includes conceptual development, space planning, site inspections, programming, research, communicating with the stakeholders of a project, construction management and execution of the design.

DESIGNING SOFTWARE’S AND TECHNOLOGY

Software has fundamentally changed the way we design as a profession through design technology—AutoCAD, Autodesk 3dsMax, BIMLink, Google SketchUp, Revit, Rhino, Trelligence Affinity—and all the plugins and personalization that makes these programs the most helpful. The software available today has become increasingly intuitive and has unleashed the potential of the designer to express and achieve those ideas, Technology, can bring about efficiency. “Architects and project teams use various tools throughout the building lifecycle to accomplish different tasks.

TOWN PLANNING

Town Planning is the art and science of ordering the use of land and siting of buildings and communication routes so as to secure the maximum practicable degree of economy, convenience, and beauty. An attempt to formulate the principles that should guide us in creating a civilized physical background for human life whose main impetus is thus foreseeing and guiding change.

MODELS

Garden city by Ebenezer Howard, Survey before plan by Patrick Geddes, CUL-DE-SACS by Clarence Stain, Radburn’s concept, Concentric zone model by Ernest Burgess, Sector model theory by Homer Hoyt, Multiple nuclei model by Chauncy Harris and Edward Ullman.

TECHNIQUES AND SOFTWARE

The most commonly used software for town planning are ArcGIS, AutoCAD, Adobe Design Creative Suit, Sketchup, Rhino, Maya or 3D Studio Max, Google Earth, SPSS, Esri City Engine, Primavera.

EKISTICS

Ekistics is the study of human settlement, which examines not only built forms, but also the interface of time, movements and systems in the built environment. Doxiadis saw ekistics as an intellectual approach to balance the convergence of the past, present, and future in human settlements as well as a system for creatively coping with the growth of population, rapid change and the pressures of large scale, high density housing. Ekistics logarithmic Scale consists of 5 Ekistics units ranging Man, Nature, Society, Shell and Network. These are classified under 4 major types which are minor shells, micro settlements, meso settlements, macro settlements,

ENERGY EFFICIENCY IN TOWN PLANNING

Urban Design and Urban Planning plays a great role in achieving energy efficiency. Planning of towns and cities is an extremely important aspect in order to achieve energy efficiency. A town planner has to take into consideration various amenities and facilities that are to be incorporated in a town.

STANDARDS

For resolving the problem of energy consumption, “Polycentric urban structure” has to be designed. The shape and form of the town and the road network should be so designed that the walking distance from any point in town is not more than 7minutes to 10 minute walk. Technologies:

EECITIES applies technologies based on the SEMANCO platform. These technologies can help to improve decision making regarding energy efficiency in your city.

Urban energy modeling, energy assessment of buildings, cluster analysis, multi-criteria decision tools and data mining analysis are some other technologies which are used by our prestigious firm, Allied Engineering Consultants (Pvt.) Ltd.

CIVIL ENGINEERING

PUBLIC HEALTH ENGINEERING (PHE)

PHE rests under the shadow of Civil Engineering. Two very basic jobs of Public Health Engineering are Water Supply System and Sewerage System. Water Supply System includes the supply of fresh water for Domestic, Commercial and Industrial use. We at Allied engineering Consultants Private Limited (AEC Pvt. Ltd.) make sure that we follow the Approved International Standards so our users can get the best out of it.

International Plumbing Code (IPC) 2009, under International Code Council provides us the strict guidelines to follow for the design of Water supply and Sewerage System.

General Regulations provide us a detailed guideline to be followed. This covers almost every aspect of design keeping in view every possible problem we may encounter. This covers Material, Rodent Proofing, Protection of Pipes and System, Trenching, Excavation, Bed, Slope/Gradient, Backfill, Structural Safety and Piping Support. Latest Softwares i.e. EPA NET are used for the Design and Analysis.

STRUCTURAL DESIGN

Structural Engineering is important than any other Engineering. This is with respect to the Amount of Risk associated with people's lives. AEC as in any other branch never compromises on the integrity and stability of the Structural Design. Load and Resistance Factor Design (LRFD) and Allowable Stress Design (ASD) are globally accepted and are currently in use at AEC. Moreover, ETABS is the software we use here for the analysis of the designed structure. This has simulations and one can very easily detect the mistakes.

QUALITY CONTROL

Our Prestigious firm is registered with Quality Assurance and UKAS Management System under ISO 9001 Quality Management Systems. AEC Pvt. Ltd. has a valid registration with the department till November 18, 2017.

CONSTRUCTION MANAGEMENT

AEC uses Primavera P6 for high performance Project Management. This software has an ability to efficiently manage projects up to 100000 activities. The basic objective of our firm is to deliver a quality project with best possible efficiency in terms of time and money.

MATERIAL TESTING

Material testing is done at the private or government laboratories as per the client's requirement. It is made sure that our relevant qualified team is present at the stage of sample collection, mobilization and testing of the material in the laboratory. This Three-step procedure ensures the credibility of the test reports. This further helps us to understand the ground dynamics and design the structure in a better way. American Standards of Testing Materials (ASTM) and American Association of State Highway and Transportation Officials (AASHTO) codes are used in accordance with the relevancy to the project.

TOPOGRAPHIC SURVEY

Topographic Survey can be conducted with the following equipment keeping in view the scope and extent of the work.

Auto-Level, Theodolite, Total Station and Glass Prism, GPS (Global Positioning System), Drones (2D and 3D).

ELECTRICAL ENGINEERING

Electrical Engineering now covers a range of sub-disciplines including those that deal with power, optoelectronics, digital electronics, analog electronics, artificial intelligence, control systems, electronics, signal processing and telecommunications. Allied Engineering consultants (Pvt.) Ltd make sure that all the criteria follows international standards from the copper quality of a wire to the energy efficiency requirements.

Categorical explanations, details and IEEE standards regarding different features of Electrical technologies are as follow:

- HVAC
- Networking
- Building Management Systems
- Energy Efficiency

HEATING VENTILATION AND AIR CONDITIONING (HVAC)

When it comes to heating and air conditioning in the home, advancements within the components themselves are making units more energy efficient than ever. The systems also run quieter and are easier to use with touch screen, programmable thermostats with multiple settings and we at Allied Engineering consultants (Pvt.) Ltd chases the best quality work through proper ISO and IEEE channels scoring expertise in respective field. ASHRAE standard 189.1 for the design of high-performance green buildings provides total building sustainability guidance for designing, building, and operating high-performance green buildings.

NETWORKING

A network or data network is a telecommunications network which allows nodes to share resources. Our victorious firm, Allied Engineering Consultants (Pvt.) Ltd pursue IEEE 802 family standards dealing with LAN, MAN, SONET, SDH, ATM and Wireless Networks.

BUILDING MANAGEMENT

One of the most considerable arenas in Electrical Engineering is BMS, also known as a building automation system (BAS) is a computer based control system installed in buildings that controls and monitors the buildings mechanical and electrical equipment such as ventilation and air-conditioning (HVAC), lighting, power systems, fire alarm systems, lift, elevator and security systems. Allied Engineering Consultants (Pvt.) Ltd has covered viable amount of time to investigate and apply latest technological amendments in BMS for the ease and comfort of our Clients.

People Counter, Smart Energy Meter, Lyric security system, Automatic Electric Panels and MCU's are just a few specimen of BMS revolution. Systems linked to a BMS typically represent 40% of a building's energy usage; if lighting is included, this number approaches to 70%. Allied Engineering Consultants (Pvt.) Ltd illustrate the benefits of BMS as:

- Possibility of individual room control
- Effective monitoring and targeting of energy consumption
- Effective response to HVAC-related complaints
- Save time and money during the maintenance.

ENERGY EFFICIENCY

Energy-efficient buildings are designed to use as little energy as possible. Buildings can be made energy-efficient by using quality building and insulation materials which help prevent heat loss and make the building airtight which Allied Engineering Consultants (Pvt.) Ltd envisions the most important factor in Electrical designs.

As ISO 50001 is a framework to establish a more structured and formalized energy management system, we at Allied Engineering Consultants (Pvt.) Ltd developed a policy for more efficient use of energy:

- Fix targets and objectives to meet the policy
- Use data to better understand and make decisions about energy use
- Measure the results
- Review how well the policy works, and
- Continually improve energy management.

Energy Efficiency depending upon the load demand and design factors classify buildings into 5 categories:

- Type 0: Standard Building
- Type I: Low Energy Building
- Type II: Passive Energy Building
- Type III: Zero Energy Building
- Type IV: Plus Energy Building

Having a perception of today's technology and future requirements of our Clients, expertise in load management by using LED illumination system, Invertors and Solar systems is a set of tasks Allied Engineering is ideal for.

OFFSHORING SERVICES

1. EMERGING INDUSTRY

AEC is proving to be a very attractive destination for engineers and CAD/CAM design offshoring. Engineering Services offshoring is an area that encompasses outsourcing of engineering services largely involved with operations linked to the pre-manufacturing stage such as designing, prototyping etc. and analyzing scope for process improvement. Secondly, in the built-environment field engineering design and architectural design are also being offshore to competent firms with a reputation for expertise, quality and delivery. Every business entity understands the advantages of outsourcing. With ever increasing business demands, companies want to stay focused on their core business activity and outsource support services to save time and energy. To remain competitive they want to reduce costs and enhance employee productivity. Wide range of engineering support services has been outsourced for many years, but most of these outsourcing assignments have typically been with onshore or near-shore partners. Offshore outsourcing of Architectural Engineering service is a relatively recent phenomenon and growing at a very fast pace - examples are CAD outsourcing for a variety of design intensive industries as well as various types of professional design services in built environment space. While each has different perspective and objective, the common benefits that companies can make are following:

- Decrease in overall cost
- Higher quality of service
- Efficient use of resources
- Focus more on core business line
- Plans to expand globally and get closer to new markets
- Speed of project and design delivery
- Ability to expand project portfolio at lower cost

2. TYPES OF DESIGN SERVICES

- Architectural Design
- Urban Design and Master planning
- Smart cities design
- Design for Sustainability
- Civil Design
- Road Design

- Structural Design
- Landscaping Design
- Mechanical Design
- Environmental Design
- Electrical Design
- Industrial Design
- Public Health Design
- Fire Fighting Design
- HVAC Design
- Interior Design
- Exterior Design

3. TYPES OF DRAFTING SERVICES

- As-built drawing
- Assembly drawing
- Bill of quantities
- Building information modeling
- Component drawing
- Elevations
- Engineering drawing
- General arrangement drawing
- Installation drawings
- Manual drafting techniques
- Measurement of existing buildings
- Notation and symbols
- Projections
- Scale drawing
- Section drawing
- Shop drawings
- Specification
- Symbols on architectural drawings
- Technical drawing
- True Vision
- Working drawing
- Location drawings
- General arrangement drawings
- Preliminary drawings
- Sketch drawings
- Architectural Drawing
- Structural Drawing
- Plumbing and Sanitary Drawing
- Electrical Drawing
- Finishing Drawing
- Reinforcement Drawings
- Record Drawings
- Furniture Drawings
- Completion Drawings
- Walk through views
- Animations
- 3D drawings
- Model Space Views
- Views and Constructs
- Walk through views

- 3-D Architectural views
- Flyovers

4. TYPES OF QUANTITY SURVEY WORKS

- Cost Estimate
- Bill of Quantity
- Tender Documents
- Bidding Documents
- Evaluation Bidders
- Progress Reports

5. MANUFACTURING RELATED CAD/CAM SERVICES

a) 3D MODELS

- Manufacturing and Fabrication Models
- Fabrication Fixture Models
- Photo-Realistic Renderings

b) 2D DRAWINGS

- Fabrication Drawings
- Shop Drawings and Cut Sheets
- Record Drawings
- Shipping Drawings
- Assembly and Maintenance Manuals
- Diagrams and Schematics
- CAD Conversions

6. DETAILS OF OUR TEAM

AEC at present has a vast team of resources to facilitate and manage the entire designed and drafting offshoring needs of large to medium organizations. Our team includes:

- Three teams of 20 CAD technicians, every 5 CAD technicians have one senior CAD manager.
- Pool of senior resources like Architects, Civil, Electrical, Mechanical, Environmental and Public Health Engineering and so on.
- Quantity surveyor and Estimators for the management of all projects costing.
- We are also working to get global professional certification for our resources such as member ICE for Civil Engineers, member IET for Electrical Engineering etc, Engineering Council UK for various Engineering certifications as well as Chartered Engineer status, AIA and RIBA for Architects certification, as well as appropriate Quantity Surveyor certification.

7. GLOBAL TECHNICAL RECRUITING

AEC provides quality technical workforce solutions to our clients, matchmaking the right talent with the right skills to our client's exact needs. We continually hire skilled talent and also have access to a large sustainable talent pool with which we influence our global reputation as our team fulfills the client organization's needs as well as the qualifications specified by the client. Our recruitment activities are conducted for the hiring of executive and capable

talent that strengthens up our highly skilled team. Our recruiting section provides fully vetted and sourced services that include:

- Civil Engineers
- Electrical Engineers
- Mechanical Engineers
- CAD Draftsman
- Quality Estimators
- Arch-Engineers
- Planning Engineers
- Urban Planners
- Industrial Engineers

SUMMARY

“Projects we have completed demonstrate what we know future projects decide what we will learn”. Allied Engineering Consultants (Pvt.) Ltd has emerged as catalytic organization that is ready to unlock innovative Engineering ideas and techniques in construction and consultancy with certifications/ credentialing operations activities spanning across the globe. Maintaining healthy relationship with our Clients and focusing on areas necessary to complete the project in the shadow of perfection are the all marks of our corporate strategy.