

Why QbeL:

QbeL provides comprehensive design-build solutions to the industrial, commercial and institutional Pre-fabricated Structure. The company has the in-house capabilities to develop an any project from conception through construction until completion.

Quality and Reliability	Professional Approach	Sustainability	Prestige
During the design process	Competent and responsible steel contractors	At the construction stage	Aesthetically pleasing
During construction	Advice and support	After completion	A structure that reflects the clients ambitions
Relating to cost	Integrated electronic transfer of information	Environmentally friendly	
After occupation			

How steel helps to achieve this:

Value for money

STEEL AS AN ECONOMIC CONSTRUCTION MATERIAL

- Increased productivity in steel manufacture and design, fabrication and erection has made steel a low cost way of building.
- Steel usage allows new low cost approaches to fire and corrosion protection.
- Steel building fabrication costs have fallen in real terms

CONTINUOUS DEVELOPMENT IN TECHNOLOGY

- By investment in IT and CAD/CAM technology for engineering and production

A SHORT CONSTRUCTION PERIOD

- Earlier possession of the building for use or rent.
- Lower financing costs
- Better site utilization
- Earlier access for following trades

COST SAVINGS THROUGHOUT THE WHOLE PROJECT

- Early involvement of the steelwork contractor in the design process
- Large unsupported spans
- Smaller site footprint
- Steel represents a durable form of construction which meets the building life requirements
- Steel construction allows slender columns resulting in maximizing floor area.
- Steel advantages include excellent strength to weight ratio resulting in lower foundation costs
- Offsite structural steel fabrication facilitating lower site costs during construction
- Prefabricated steel building construction allows greater independence from the weather
- Low cost and efficient approaches to fire protection
- Easy integration of services
- Prefab steel buildings allow greater flexibility in accommodating changes to the building

Flexibility

IN DESIGN

- IT and software.
- Steel's excellent strength to weight ratio creates an attractive and economic use of space when beams and columns have small profile areas.
- New rolled and prefabricated steel section shapes.
- Economic methods for shaping and curving.
- Standardized solutions for floor systems and connections.
- Opportunities to integrate large openings, for doors and windows
- Enhanced Fire engineering.

DURING CONSTRUCTION

- Complementary structural components can easily be accommodated, curtain walling readily and efficiently connected to the structure, and other modularized elements such as toilet pods, dry-casing, M & E items easily fitted.
- Easy adaptation – during the construction period the client may wish to alter installations and this can readily and rapidly be achieved.
- Steelwork connections, particularly bolted ones, can easily be released or re-made in whatever form necessary.

IN USE

- The client may need to extend, to change the use of the steel framed building, to absorb changes in loading requirements, and to incorporate new installations.
- Should an increase in loading requirements occur, then the structural steel elements can easily be individually strengthened, or additional members introduced or altered to suit.
- Steel's relative lightness in weight allows adaptation in the future to be easily accomplished.
- New connections can easily be introduced by bolting or welding enabling alterations for services or changes of use.

Speed

PRE-ENGINEERED STEEL BUILDINGS

- The construction preparatory phase enables the steel structure to be planned and connections to be selected for speed of erection.
- Pre-engineered steel buildings can take advantage of Just-in-Time manufacturing techniques.
- The steel frame of the building is designed and manufactured from computer models directly linked to the CNC machines thus ensuring high dimensional accuracy and speed of erection.
- Quick drying coatings technologies are available.

SHORT CONSTRUCTION PERIOD

- Economical foundations – steel's excellent strength to weight qualities result in small foundations which then take minimum time to construct.
- Off-site manufactured elements, with steel components ready for immediate erection upon arrival on site, with no subsequent delays. This means following trades can carry out their work in parallel.
- New erection techniques, e.g. use of mobile working platforms.

Safety

DURING DESIGN AND FABRICATION

- Extensive research and development by the steel construction industry into accident prevention.
- Wide ranging Health and Safety guidance documents and procedures

DURING CONSTRUCTION

- Pre-fabricated steel frame buildings allow off-site manufacture resulting in less site activity.
- Regulatory monitoring of machinery.
- Risk assessments.
- Use of mobile elevating working platforms.

Quality and Reliability

DURING THE STEEL BUILDING DESIGN PROCESS

- World Class companies using tried and tested solutions.
- Steel is a homogenous material and is subject to documented quality control procedures during manufacture and rolling. The Client can be assured of obtaining reliable and constant quality.
- A wide range of steel section shapes and sizes in a range of qualities offers the most efficient and economic solution for the design requirements.
- Successful use of IT.
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DURING STEELWORK CONSTRUCTION

- A qualified and trained workforce – in the fabrication shops staff are permanently employed, often for the whole of their working lives, and on site steel erection companies maintain a permanently employed labour force.
- Independent Certification of in-house quality systems gives ongoing assurance of procedures and products.
- Improved coatings technologies on structural steelwork.
- High quality surface finishes available for pre-site approval.
- Bolted and welded connections are generally exposed and therefore are simple to check for quality and safety.

RELATING TO COSTS

- Costs are predictable, which helps with a meaningful calculation of the investment and risk involved in the project.

AFTER OCCUPATION

- The steel frame is visible for ongoing inspection.
- The plastic behavior of steel provides additional security in extreme loading situations, such as explosion, impact, terrorist attack and earthquake.

COMPETENT AND RESPONSIBLE STEEL CONTRACTORS

- The steel construction industry can give assistance to the client and his professional team with technical and budgetary advice at the planning stage of the project.
- Industry standard details in design and connections offer economy in steel building construction.
- Full design can be carried out where required by the

steelwork contractor.

- Greater co-operation within the project team through partnering and the consequent improved payment profile result in benefits for all.

ADVICE AND SUPPORT

- The steel industry's advisory organizations can help the client and his team on all aspects of the design, costing, procurement, fabrication and erection process.
- The Register of Qualified Steelwork Contractors enables clients to select independently audited companies appropriate to the project.
- The National Structural Steelwork Specification can be relied upon to provide industry accepted standards.
- Continual R & D in areas such as fire design, seismic resistance, health and safety, etc provide the client with safe structures and a dynamic industry.

INTEGRATED ELECTRONIC TRANSFER OF INFORMATION

- The industry uses software for all aspects of its processes and engineering modeling tools enable the client and his professional team to interface directly with the steelwork contractor.

AT THE CONSTRUCTION STAGE

- Delivery of steelwork is relatively straightforward – requiring little space, time or inconvenience. The hours of delivery can be selected in order to reduce public nuisance.
- Because steelwork comprises prefabricated elements, there is as a result less site disruption with adjoining properties.
- Construction equipment normally used to erect steelwork is cranes and mobile platforms. These by their nature require little permanent or temporary space to operate.
- Noise when manufacturing, delivering or erecting steelwork is not a major problem.
- The speed of steelwork erection means inconvenience caused is reduced to a minimum period.

AFTER COMPLETION

- Steel can be easily maintained so that color and

appearance can always be made to suit a constant or changing environment.

Coatings developed through new technology last longer.

ENVIRONMENTALLY FRIENDLY STEEL CONSTRUCTION

- Steel is basically a clean, user-friendly material – no dust, no spillage, little waste etc. – and consequently no equipment employed to counteract such problems.
- Steel can be reused, relocated or recycled once its use has been overtaken by events. Use is therefore responsible in environmental terms.

AESTHETICALLY PLEASING

Prestige

Steel by its very nature has many advantages including:

- Clean lines
- Slenderness
- Large spanning
- Architectural possibilities

It appeals to the client and his designer in terms of attractiveness as well as economy.

Color, through paint, can easily and economically transform a steel building to satisfy the designer's options.

A STRUCTURE THAT REFLECTS THE CLIENT'S AMBITIONS

Steel has exhibited consistently great architectural beauty – steel suspension bridges, tall towers and high buildings, for example, the world over are magnets for tourism. Many steel structures worldwide are viewed as amongst the greatest achievements of mankind.