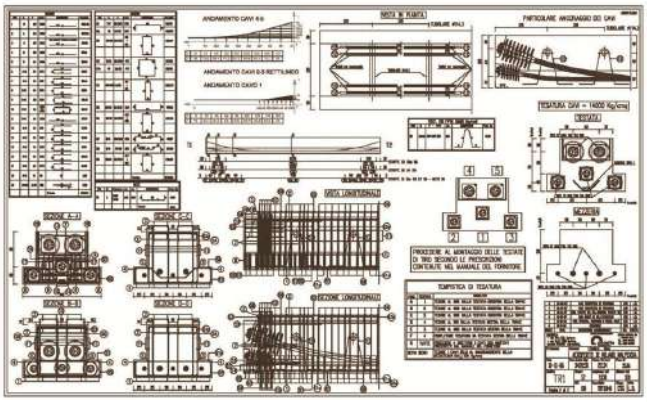
Welcome to our World:
the Precast Concrete Technology

New Building Systems

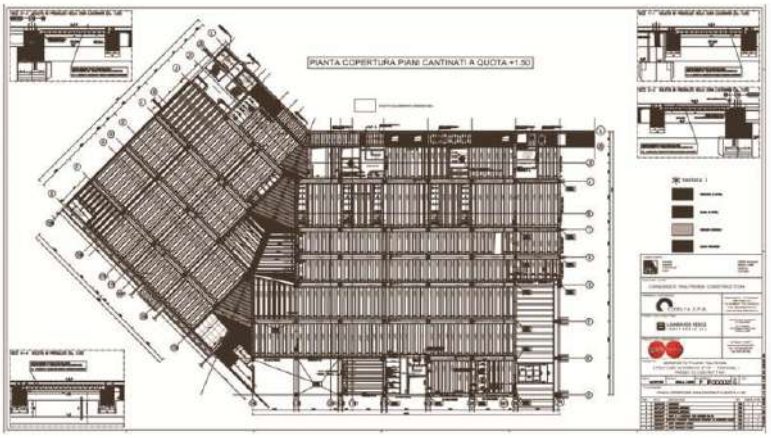
Design and Startup of Precast Plants

Automation

BIM LegoCad
ERP P2000



Design, Engineering and Drafting



Technical Mission to Italy

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CSG Engineering

Expertise on Precast at your Service

CSG Engineering is an engineering, consulting and software company, with significant experience in design, production, planning, automation, cost control, new precast construction systems, new factories.

The founding members started their professional career in precast companies, covering different company roles.

We propose ourselves as a reliable point of reference for those who already work - and for those who want to enter - in the precast business. Being at their side and helping them to face all their needs.

Our initial Customers, more than 30 years ago, are still with us. From time to time we focus on their new needs.

All this because we were lucky enough to start professionally in the italian precast industry, which is one of the most advanced in the world by type and quality of products, production automation, effectiveness of the whole business process.

Design Engineering Drafting

The engineering expertise gained in several Countries, and the knowledge of production, transport and installation processes, allows CSG to realize well-optimized projects on production cycles, quality and pieces typology. This, with the better use of materials available on site, and all enhancing the architectural and environmental aspect.












The application of precast can find space in industrial, commercial, residential buildings, schools, hospitals, public buildings, agricultural, railways, stadiums, sports centers, car parks, bridges, airports, infrastructures ...

New Precast Building Systems

Depending on the type of construction, the volumes and the Country, CSG, through the design/engineering of a typical project, can design an effective and functional building system, with the detailing of each precast piece, connections, any MEP (Mechanical, Electrical, Plumbing) predispositions, finishing.

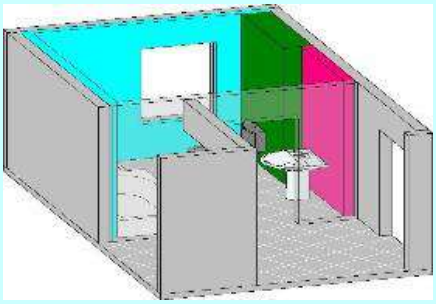
INDUSTRIAL

PC MULTISTOREY BEAM & COLUMN

The Building System is the set of rules, gathered in a Technical Manual, that guide the design, production, storage, transport and installation of a family of buildings.
Once defined, the “Building System” is applied in the execution of all the projects of that family.

The study of the Building System can be followed the study of the processing cycles; the need for raw materials and labor; the optimization of the layout of the factory, and the choice of the necessary equipment.

PC PREFINISHED VOLUMETRIC



LOAD BEARING PANELS

With the Technical Manual of the Building System, the Client is totally self-sufficient in the execution of the projects.

Design & Startup of Precast Plants

Starting from the objectives of the Customer and the environment in which it operates (type of construction, market demand, prices, sales volume ...), first of all it is studied the most suitable building system (for time, cost, and quality required) followed by the factory project, start-up support, and long-term assistance to maintain profitability over time.

Initial needs

- Feasibility Study, Costs
- Building System
- Business plan

Factory plant

- Equipment
- Layout
- Complete Design
- Skilled people

Start-up factory

- Organizational Methods
- Assistance on site
- BIM+ERP Solution LegoCad-P2000

Long term Assistance

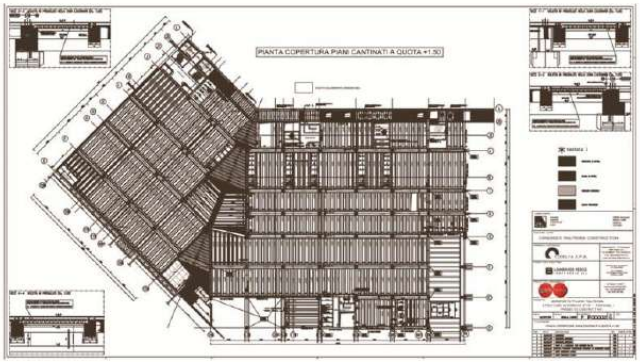
- Design and Engineering
- New Building Systems
- Business improvement plans
- New Technologies & Equipment

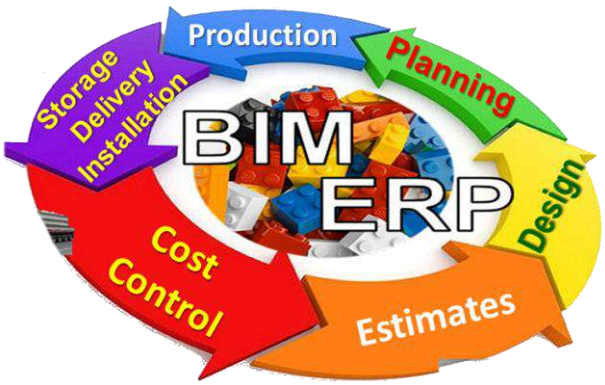
BIM LegoCad - ERP P2000

Operating for more than 30 years, with a very rich BIM library, it is the most used tool by Precasters.

The BIM LegoCad allows - like in the game of bricks - to assemble the building (eg without any limit you can put together several rectangular or circular sections with corbels, heads, holes, to make a column), then placing connections by using functions that can verify both the capacity and the correct positioning.

An integrated structural solver for the static and dynamic (earthquake) structural calculation is available.



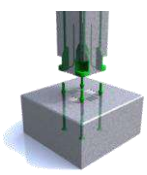


Once the project has been completed, the BIM LegoCad is able to recognize all the same pieces and automatically produce production sketches, Bar Bending Schedules, installation diagrams, production planning, estimated cost, BOQ/BOM, and the services necessary for the construction of the building.

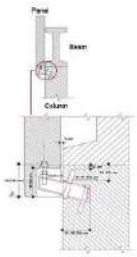
The source of information is the BIM model built for the project, and any changes to the model automatically changes everything

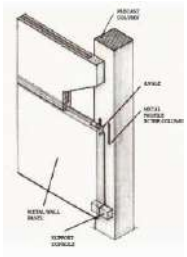
This has the following benefits:

- Quicker response time to Customer request for Design, Quotation and Alternate Design.
- Drastic reduction of errors, inefficiencies, and full control of costing and timing of the jobs.
- Connect the factory machinery to the project data.



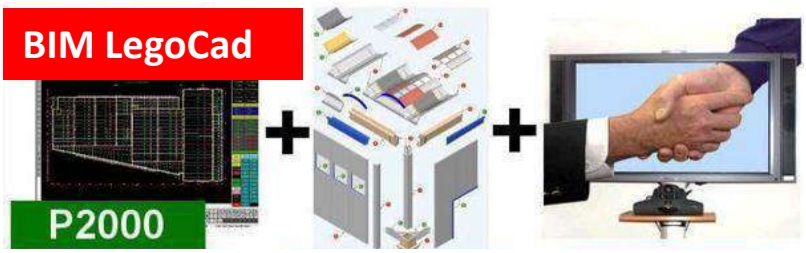
Complete BIM library
of the Connection Systems available on the Market





The Precaster's BIM Library (required in all BIM systems for their full operation) is implemented and provided by CSG Engineering.

In this way the Precaster's know-how (products, methods, costs) is included into the software system, and made available to the various Company Depts.



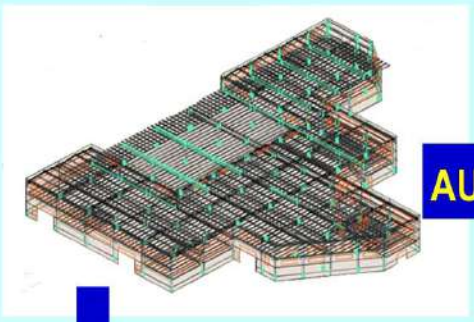
SOFTWARE | **CUSTOMIZED BIM LIBRARY** | **TRAINING & ASSISTANCE**

BIM LegoCad & ERP P2000

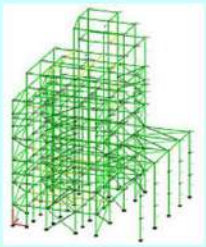
CSG Engineering

Business Management Solution for Precast

LAYOUTS

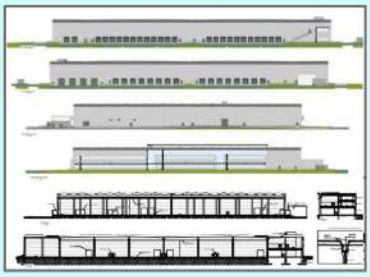


AUTOMATICALLY



Structural Calculations, Connections, Reinforcing

AUTOMATICALLY



ESTIMATE

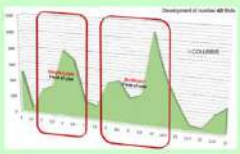
Estimates for Production (material & manpower), Transportation, Installation Costs, Proposals

3D Rendering

Preliminary Drawings

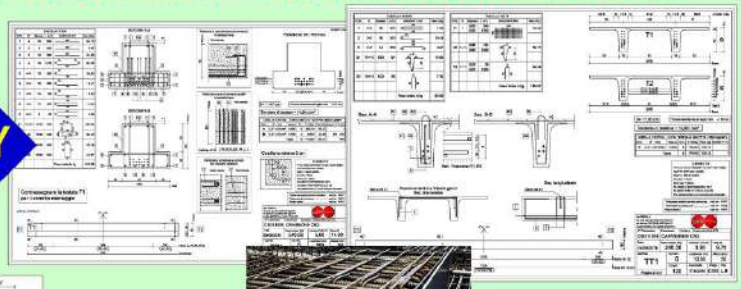
Operations Planning

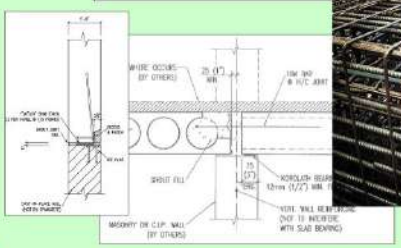
Sales Statistics

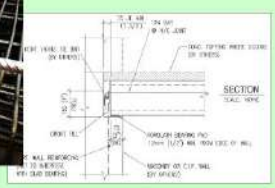


FINAL DESIGN

Shop Drawings, Installation drawings, BBS, BOQ/BOM, material & labor



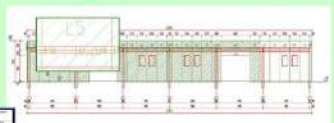


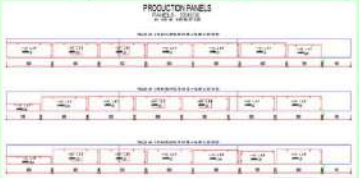


PRODUCTION MGMT.

Design to Production automation (operate factory machine)

Barcode labels





Production Tracking

Storage

Delivery

COST CONTROL

Online comparison between Estimate, Design, Production and Balance costs by piece, by job, by production line

“Design to Production” Automation

In addition to the BIM design data for every piece, LegoCad also has the information on the molds. So, even the "decision to produce" (when, in which formwork or carousel, position or sequence) is managed directly in the BIM LegoCad, and then files are transmitted to the factory machinery

BIM LegoCad

Design data

Piece, shape, size, materials, insulation, finishing, embeds, reinforcing

Beds / Carousels

Drag and drop pieces for Production, **creation of files eg UNITECHNIK, BVBS (or other formats) to operate factory machinery**

Factory Machinery

Automatically mould preparation, embeds positioning, reinforcing cutting and bending, casting, finishing etc.

By knowing the installation sequence (*), it is possible to plan the procurement of materials, production, storage, transport and installation in the same sequence; in such a way human errors can be eliminated, communication times between company depts can be reduced, real time changes requested by the customer can be easily managed.

(*) in the BIM LegoCad the designers can “release for production” the verified elements (and not subject to changes), moreover they can assign installation priorities due to constructive constraints, or to the installation sequence.

Precast Technical Events by CSG

Our cooperation with Universities and Trade associations gives CSG the possibility to organize Technical Events for years, with the aim of creating a network of precast professionals from different Countries, to exchange information, experience, business opportunities and human relationships.

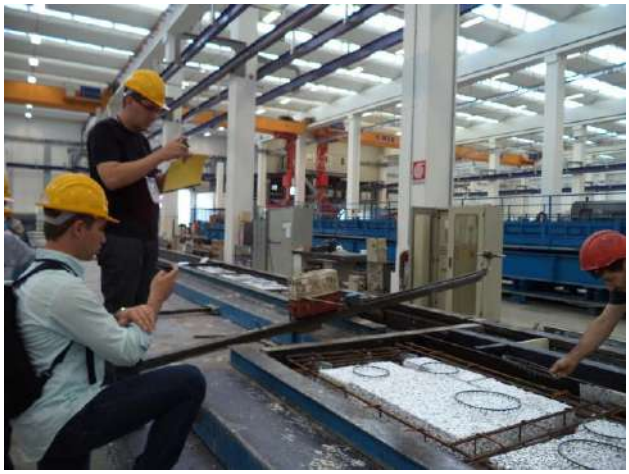
Some of them are:

- the "Technical Mission in Italy", which offers foreign precast professionals the opportunity to visit the Italian plants, and collect new ideas for their business.

- The "Seminario - Projeto de Estruturas Pre-Fabricada", which are held annually in Brazil, and which have become an important reference for precast in Brazil and South America.

Precast Concrete Technology

PCT



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Precast Concrete Technology features

One of the best way **TO BUILD RAPIDLY** **for industrial buildings, commercial, housing, schools, hospitals, public buildings, agricultural, railways, stadiums, sport centers, parkings, bridges, airports, infrastructures** etc. with the higher *productivity* and the higher *quality* (set at industrial level)

A CLOSE LINK BETWEEN "PROJECT" AND "PRODUCTION, TRANSPORT AND INSTALLATION" IS ESSENTIAL CONDITION FOR THE SUCCESS of any project with the Precast Concrete Technology

WITH COSTS SIMILAR TO "CAST IN SITU", PRECAST CONCRETE PROVIDES THESE KEY BENEFITS:

- Shorter construction time, (1/3 – 1/5 compared to cast in situ),
- Quality defined at industrial level, that means static reliability, durability, dimensional accuracy, ability to produce architectural elements of great quality,
- The potentiality about insulation, thermal inertia and fire resistance,
- Possibility of integration with MEP (Mechanical, Electrical, Plumbing) from the beginning

Italian precast industry is one of the most advanced in the world by type and quality of products, production automation, effectiveness of the whole business process