

The CSG network



CSG Engineering - History

The **CSG founders** have initially worked in **Precast Concrete Companies**, founding CSG in the 90s and started working with some of the best Italian Companies.

CSG has become a recognized Company for the technical support of the Precast Concrete Industry, **doing studies and research on materials and proposing new construction systems.**

CSG works for about 20 years in Europe; **about 10 years ago began its process of globalization** becoming a reference for many Companies and Professionals.

CSG arranges Technical Seminars in different Countries; starting in 2014 it has organize the **Technical Mission to Italy**, a one week event focused on visiting both Precast Concrete Companies during production stages, and to construction sites during installation.

These events **allow you to meet and discuss with industry professionals coming from all over the world**, a network that CSG Engineering aims to maintain and expand over time.



Long Lasting Cooperation

Initial needs

- Feasibility Study, Costs
- Building System
- Business plan

Factory plant

- Equipments
- 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 plan
- New Technologies & Equipment

High-Quality Design & Engineering Services

Study the best solution for the optimization of precast products, materials and production cycles.

It is a **variable cost** associated with the actual production, effective in case of overload too. Also, for **Complex or Special Projects**, savings of time and money thanks to the help of previously completed similar projects.

Use of powerful BIM Design tool for Precast (Legocad). **CSG Professional staff available on site** if needed.

Consulting

Sharing Precast Concrete knowledge collected over many years in different countries with many Precasters:

- **Business Improvement Plans**
- **New factory layout and startup**
- **New Building Systems**
- **Long term Assistance** (new production lines, new building systems, new projects)

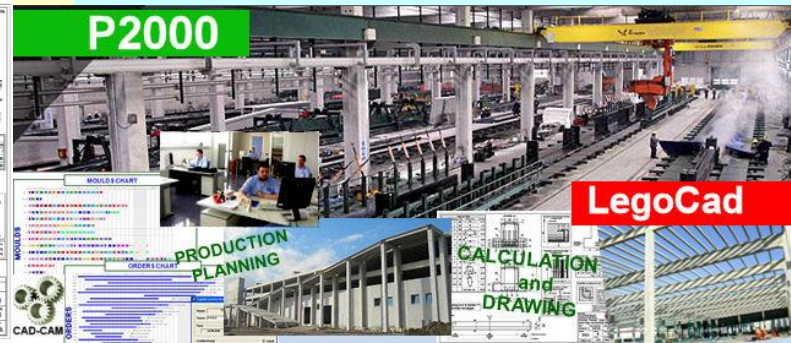
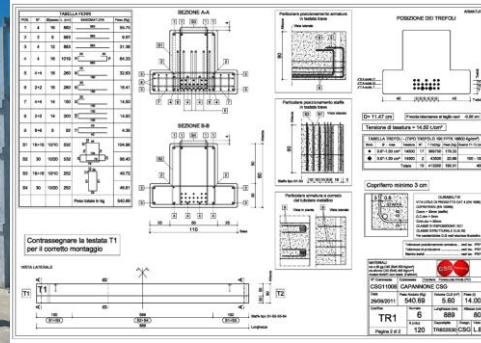
Our initial Clients, are still with us: over time we focus on their new needs

Organizational Methods and IT tools

Implementation of the BIM ERP system LegoCad-P2000 for Precast, with **the full integration btw. Sales, Design, Production Mgmt. and Planning, Cost control.**

- **Quicker response time vs. Client's request** for Design, Offer, Variants.
- **Full control of Cost, Time, information flow.**
- **Run the Factory through the System** (eg. Automated Rebar Processing etc.)
- **Cost Control: online comparison between Estimated, Design, Production and Balance Costs, by piece, by job and by product line.**

CSG Engineering ensures the end result by leading the implementation



Precast Concrete Projects



Industrial - Heavy structural
Commercial - Warehouses



Public works
(hospitals, schools,
metro station,
airports etc. ..)

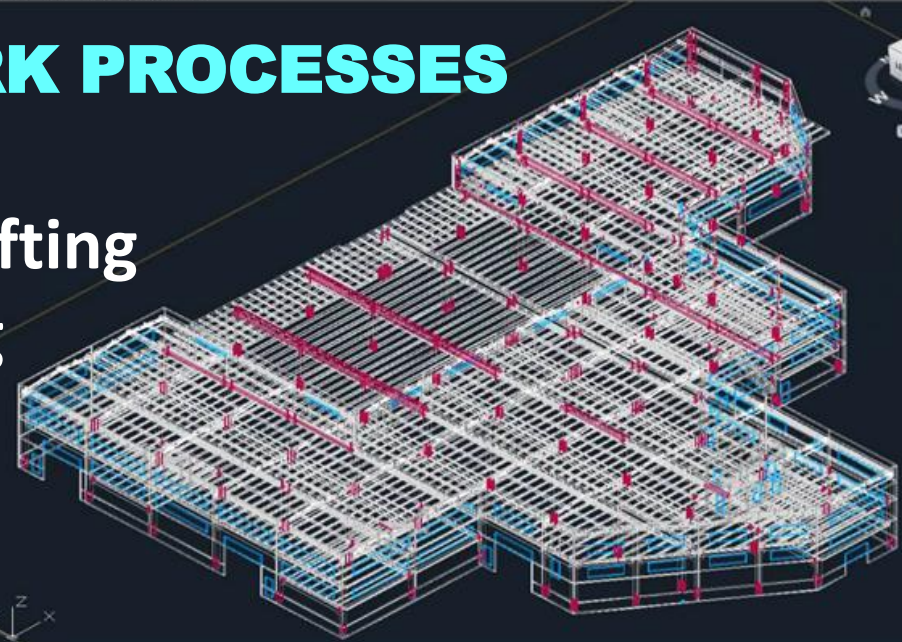
Multistory parking,
office centres



LegoCad-P2000 BIM for Precast

AUTOMATION OF ALL WORK PROCESSES

- Estimation & Proposals
- Engineering - Design and Drafting
- Production Mgmt & Planning
- Cost Control



**CSG Engineering ensures success
by leading the implementation**

Presentation topics list

- 1. Outsourcing Engineering - Design and Drafting Services**
- 2. Customized Business Improvement Plans**
- 3. New Building Systems**
- 4. Automation of work processes with LegoCad-P2000**

1. Outsourcing Engineering – Design and Drafting Services- 1

Why use CSG Engineering?

- a) **Effective way to help with “peak” workload** and to minimize internal overhead; **Engineering and Drafting** are based on percentage cost of Projects.
- b) **For Complex or Special Projects** savings of time and money with the help of our experience for similar Projects.

1. Outsourcing Engineering-Design and Drafting Services - 2

Why CSG Engineering?

a) ATTENTION TO DESIGN CHOICES

Review the best solution with each Customer to **optimize products, materials and production cycles** (*reinforcement cutting and bending, interferences, high percentage use of beds' capacity, transport and erection optimization*).

b) USE OF A POWERFUL BIM DESIGN TOOL FOR PRECAST (LEGOCAD)

Fast response time is ensured, with **high-quality and completeness of the drawings**. **BOQ/BOM data** available for *Estimation, Production Mgmt. & Planning, Cost Control*. Integrated Business Mgmt. with ERP P2000.

c) CSG PROFESSIONAL STAFF AVAILABLE ON SITE

(Structural Engineers, Production Engineer, Erection Specialist).

d) HIGH-QUALITY PROFESSIONAL SERVICE WITH HIGH COMPETITIVE COST

Over 30 years of experience with 80+ staff of specialized precast concrete engineers.

2. Customized Business Improvement Plans

Topics

Production

- **Rebar processing:** methods, equipments, bending, welding.
- **Automation** by loading design data to rebar equipments via CAD/CAM.
- **Concrete mix design, casting phases**
- **Handling and storage** optimization
- **Design to Production Automation** with CAD/CAM: element shapes (cutting, plotter), automated placement of embeds

Design

- **Design Service:** find the best solution for optimization of product, materials and production cycles.
- **Rapidity and Quality:** drawing standardization, automated generation of drawings for Production and Installation, with BOQ/BOM/BBS and Costs.

Management

- **Estimation:** improve rapidity in issuing Estimations, and precision of Estimated cost.
- **Production Mgmt. & Planning:** arrange production according to the installation sequence and job priority; traceability of pieces (production status, storage, shipping, installation).
- **Cost Control:** online comparison between Estimate, Design, Production, Direct/Indirect Costs, project and product lines.

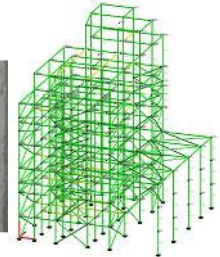
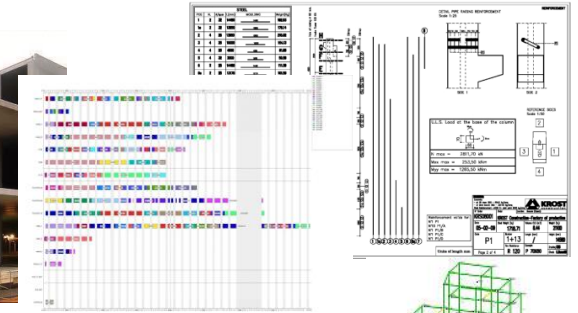
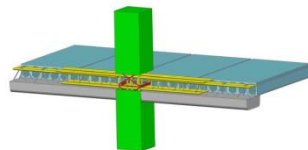
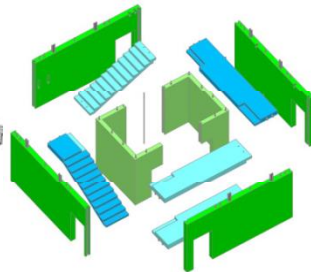
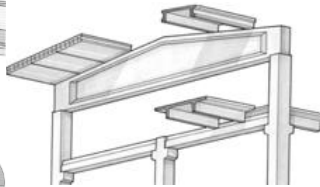
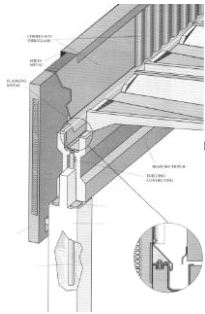
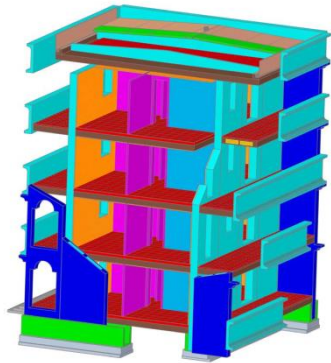
3. New Building Systems

Environment

Market demand, Market prices, Volume of Sales, Architectural, Local Rules, Conditions, Costs; Short term / Long term objectives.

CSG Engineering has experience with a variety of innovative Building Systems, optimizing all the processes in terms of *Simplicity, Speed and Economy*, considering:

- Architectural and functional aspects.
- Structural performances
- Connections
- Costs
- BOQ/BOM
- Factory Layout / Equipment
- Production Issues
- Transport and Erection



LegoCad-P2000 - key points:

- 1. Estimation:** improve speed of Estimates, and precision of Estimated cost.
- 2. Design:** automated generation of drawings for Quotation, Production and Installation, automatic generation of BOQ/BOM/BBS and Costs.
- 3. Planning & Production:**
 - **Arrange production according to the installation sequence** and job priority; traceability of pieces (production status, storage, shipping, installation).
 - **Run the Factory through LegoCad-P2000:**
 - ***Automated Rebar Processing*** (Data transfer of BBS from Design data to Rebar Equipment).
 - ***Data transfer - from design data directly - to the production equipment:*** shape of the elements (cutting, plotter), placement of inserts (CAD/CAM).
- 4. Cost Control:** online comparison between Estimated, Design, Production and Balance Costs, by piece, by job and by product line.

The added value from CSG Engineering

1. CSG Engineering ensures success by leading the implementation



2. **Implementation Method:** ONE STEP AT A TIME, starting from the Clients priorities (Estimation, Design, or Production Mgmt. & Cost Control)



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