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Construction

Project Management Services

Eagle Space Group

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Eagle Space Group provides Construction Projects with implementation of IMS building technology**.**

IMS building technology is an advanced system for accelerated construction with precasted elements of the skeleton. This unique system based on the prestressed connection of the structure elements was developed by prof. Branko Zezelj at the IMS Institute in Belgrade, Serbia. It was first implemented in 1957 and is since constantly being upgraded.
Numerous buildings and apartment factories have been built – more than 150.000 apartments in former Yugoslavia, Italy, Angola, Philippines, Egypt, Ethiopia, Cuba, Hungary, Russia, Georgia, Ukraine, Bulgaria etc.
Prefabricated prestressed skeleton has been tested in theory and experimentally, under all kinds of possible loads (static, dynamic, seismic, impact, fire..) and it always showed, without exception, high safety coefficients.
IMS Building Technology is used for virtually any type of buildings: residential, office, industrial, school, hospitals, houses, garages etc.

Benefits:

- ✓ Significantly reduces building costs and accelerates investment turn over time.
- ✓ Enables flexible solutions, greater space-planning capabilities and wider range of possibilities for building interior design.
- ✓ Prestressed construction dissipates kinetic energy caused by seismic activity and resists to earthquakes up to 9 degrees of Richter's scale.
- ✓ Enables extraordinary architectural solutions, increased technical performance and efficient organization.
- ✓ Minimizes the use of concrete and steel.
- ✓ Accelerates building and diminishes construction time.
- ✓ Increases building durability and reduces building envelope repairs.
- ✓ IMS building technology is a high return investment.
- ✓ Local materials or procedures can be applied on façades, roofing and interior surfaces, in order to obtain sustainable, energy-efficient and cost-efficient housing.

Works and facilities:

PRECAST ELEMENTS (our product)

If we look at the construction of any building as realization of **three basic sub-systems**: a) structure, b) façade and partition walls, and c) finishing works and installations (doors and windows, surface finishes, water and electrical installations, elevators etc.), the IMS Building Technology in the presentation deals with the production and assembly of **precast structure elements** (the most important), consisting of columns and floor slabs. Once assembled and joined using post-tensioning, they form the skeleton structure of the building.
Optionally, if applicable and justified in actual projects, it is also possible to implement prefabricated reinforced concrete façade panels and even prefabricated inside partition walls or shafts. In general, our structure can accept any kind of façade, partitions or finishes, prefabricated and modular or traditional, while open floor plan without structural walls enables free organization of space.

Basically, we use only the **following materials:** concrete, reinforcement steel and steel tendons and anchors for post-tensioning.

PRODUCTION FACILITY FOR PRECAST ELEMENTS

We have designed this technology to be simple for use anywhere. Facility for production of elements of the structure requires certain **technology-specific equipment** along with usual, **non-specific equipment and machinery**, plus specific **know-how** of our experts.

Every serious construction company that might be the client practically already has the most part of the required non-specific equipment. If a client wants, we can supply non-specific equipment as well.

Non-specific equipment and machinery are standard in construction, and they include (depending on actual production volume and other conditions):

- a concrete batching plant (with concrete testing laboratory);
- concrete mixer trucks;
- mobile cranes;
- tower cranes;
- trucks for transport of precast elements.

Production and stockpiling of precast elements requires certain space, usually in one flat elongated plot, open-space or in a hall.

Technology-specific equipment (that **only we provide** in order to meet the required quality standards) includes:

- equipment for production of precast elements (steel moulds);
- equipment for assembly of the structure (temporary steel supports and other elements);
- post-tensioning equipment (hydraulic pumps and jacks).

Moulds are made in accordance with our drawings and specifications and are certified by our experts. Once delivered and set-up, these robust steel moulds can be used for making thousands of precast elements (almost indestructible, if anything can be called that). Precast elements are usually produced at a rate of one element per day from each mould.

Assembly equipment is a set of tools and temporary supports used for the assembly of the elements of the structure.

Post-tensioning equipment is used for post-tensioning of steel tendons. Although this is standard construction equipment, used generally in construction of bridges and other larger structures, we can provide optimal and functional post-tensioning equipment and material under best conditions.

Technical know-how includes activities of our experts in:

- Preparing architectural and structural designs or re-designing existing plans in accordance with technology requirements.
- Design of concrete for specific project requirements and site conditions.
- Set-up of specific and non-specific equipment and operation of the production facility.
- Supervision and control of production and assembly processes.

- Training of client's personnel in production and assembly of precast elements.
- Technical support (on site and at distance) to the client if they decide to continue production and assembly on their own.

In more detail, our services will include:

Design and consulting services – Preparation of technology designs for production and assembly of precast concrete structures, including design and consulting services in preparation of preliminary and final architectural and structural designs for buildings or adaptation of existing architectural plans.
Provision of turnkey solutions, including supply, delivery and set-up of production equipment, set-up, (initial) operation, and supervision of the production facility for precast concrete elements; supply and delivery of assembly equipment and supervision, training and control of the assembly of building structures and supply and delivery of post-tensioning equipment and initial quantities of post-tensioning material and supervision, training and control of post-tensioning works.
Technology transfer of the IMS Building Technology, including quality control and final acceptance of production and assembly equipment; training of personnel for production and assembly of precast elements as well as execution of post-tensioning works; supervision and quality control of the process of production and assembly of elements, as well as post-tensioning works.

Approach: ESG is looking for : a) strong partner from construction industry, or b) partner with strong financial position and ability to identify and win construction projects, with the aim of joining together in a consortium that would participate and work on infrastructure construction projects.