

CONCRETEC

INSULATED

PANELS



تقنية الخرسانة

CONCRETE TECHNOLOGY

PRECAST & PRESTRESSED
CONCRETE

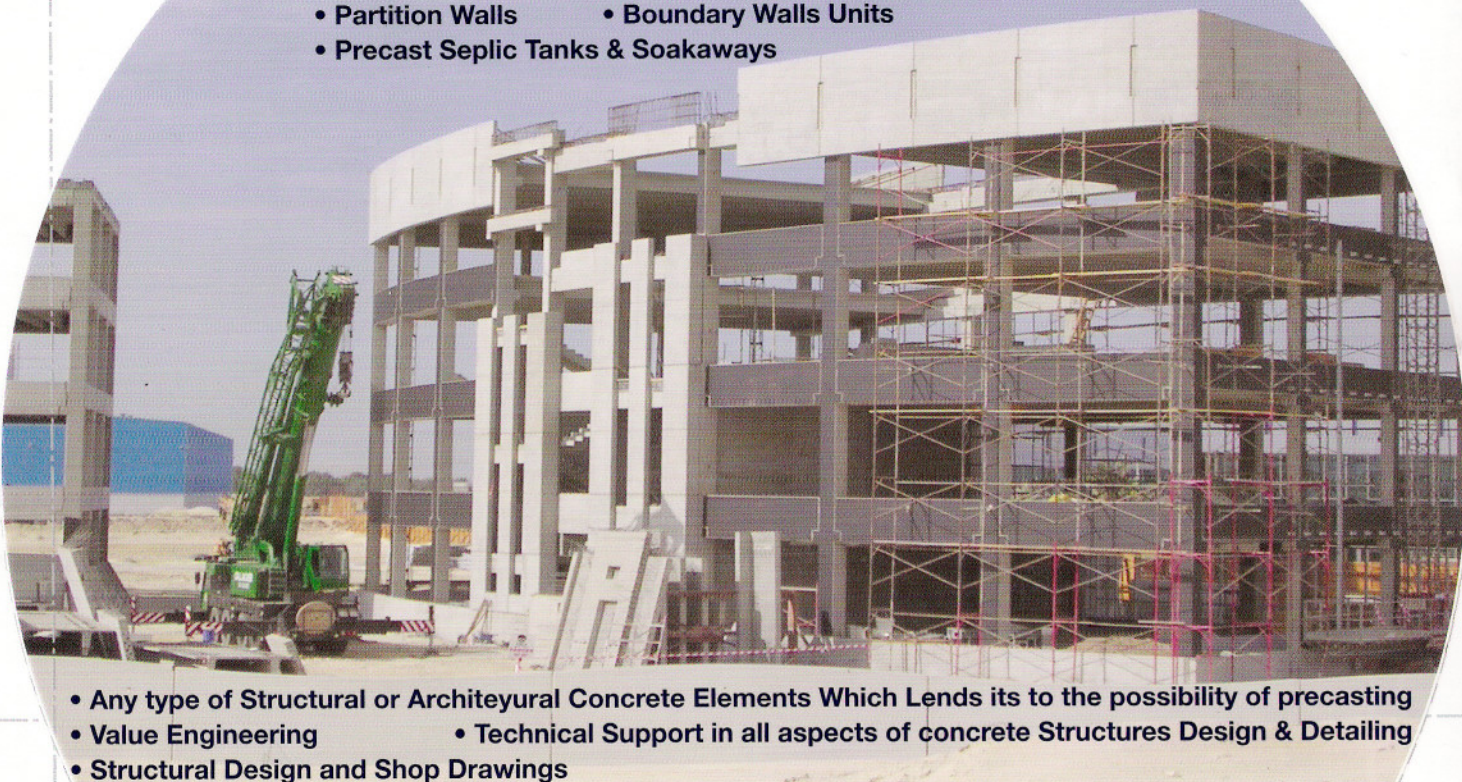
CONCRETEC

Concrete Technology LLC

Established in 1996 based in the Emirate of Dubai, a leading specialist in the field of architectural and structural precast and pre-stressed concrete construction. Our team of professional engineers, with vast experience in their relative fields, endeavors to provide our clients innovative solution to their construction problems. These solutions generally incorporate precast and/or pre-stressed precast concrete architectural and structural elements. Our dedication to the provision of these enhanced performance solutions is coupled with a dedication to quality and economy. The quality and economy are achieved through rigorous attention to the proper detailing on all the stages of construction of the works from initial stage preparing preliminary proposal, design, detailed drawings and construction method.



- Structural Building Systems
- Industrial Building
- Foundations
- Beams
- Partition Walls
- Precast Septic Tanks & Soakaways
- Column Necks
- Slabs
- Boundary Walls Units
- External Cladding
- Load Bearing Walls
- Columns
- Stair Elements



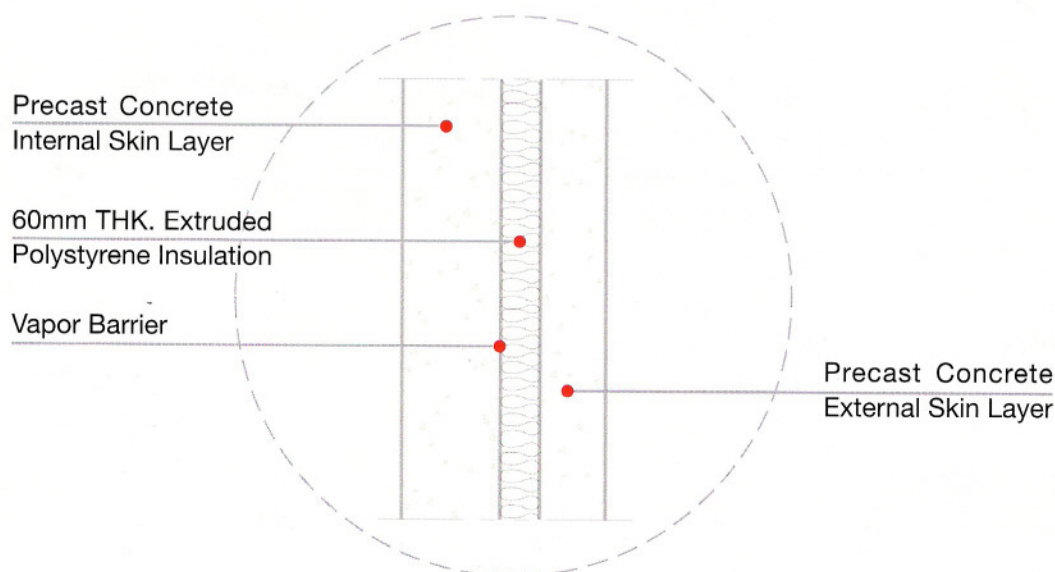
- Any type of Structural or Architectural Concrete Elements Which Lends its to the possibility of precasting
- Value Engineering
- Technical Support in all aspects of concrete Structures Design & Detailing
- Structural Design and Shop Drawings

INTRODUCTION

Concrete Technology's system provides you the fast and best insulating solution to insulate external façade and external wall, it has designed to provide thermal insulation with enough strength and aesthetic appearance. For last 8 years a lot of researches carried out by Concrete Technology to achieve the most economic and effective insulated system for the external precast insulated panels. During this time Concrete Technology was able to construct numbers of projects which became landmarks in the emirates of Dubai and Sharjah. Concretec succeed to create its own system which used in a wide range of prestigious projects such as Dubai Marina Phase I & II, Jumeirah Beach Residence, Al-Ferdan Towers, The Meadows villasetc. Our system is accepted to most of consultants and meets the international codes and standards.

SYSTEM DESCRIPTION

Concrete Technology's system was made of rigid extruded polystyrene insulated covered by two layers of concrete and provided with vapor barrier. To assure the integrity of the composite section stainless steel connecting members are provided to maintain the section dimensions and properties the same. Number and spacing between the steel connecting members will be decided according to the panel configuration. Our system offers a wide range of insulated panels sections varies from 210 mm thickness up to 360 mm. Selection of the section shall be according to the use of the precast panels.



Typical Cross Section

SYSTEM SPECIFICATIONS



External concrete skin:

External concrete skin will be of concrete with minimum thickness of 75 mm. Gray or white exposed aggregate concrete will be used according to the use of the precast panel. Minimum concrete strength will be 40 MPa. And the aggregate size varies from 3mm up to 20 mm. Concrete Density will vary from 24.0 to 25.5 KN/m³. Reinforcement steel mesh will be provided; size will be according to the structural design.

Internal Concrete Skin:

Internal concrete skin will be of concrete with minimum thickness of 75 mm. Only gray concrete will be used for both load bearing panels or external façade cladding panels. Minimum concrete strength will be 40 MPa. And aggregate size 20 mm. Concrete Density will vary from 24.0 to 25.5 KN/m³. Reinforcement steel mesh will be provided; size will be according to the structural design.

Extruded Polystyrene Insulation:

Extruded polystyrene insulation used will be one of the approved materials by Dubai Municipality.

Density will be 32-35 Kg/m³, thermal conductivity $k = 0.208 \text{ Btu.in/ft}^2.\text{hr.}^\circ\text{F}$

Compression strength at 10% deflection = 300 kPa

Stainless steel Connecting Members:

Stainless steel of grade A4 will be used. A truss will be formed in order to connect the two concrete layers, diameter of truss members will be 6 mm.

Stainless steel of $f_y = 275 \text{ N/mm}^2$, will be used.

Reinforcement:

Steel reinforcement mesh of $f_y = 460 \text{ N/mm}^2$ will be used in each skin separately. A standard steel mesh or custom made mesh to be used according to the panel type and panel configuration.

SYSTEM PROPERTIES

No	Section Description	Thickness		Uvalue	Rvalue	Kvalue
		in	mm	Btu / °F ft ² h	12	BTU IN /h.ft ² .F
340	8.27 in CTCL1 precast insulated sandwich panel 5 cladding wall	8.27	210	0.092	10.8696	0.8320
341	9.25 in CTCL2 precast insulated sandwich panel 5 cladding wall	9.25	235	0.092	10.8696	0.9306
342	10.27 in CTCL3 precast insulated sandwich panel 5 cladding wall	10.25	260	0.091	10.9890	1.0190
343	11.22 in CTCL4 precast insulated sandwich panel 5 cladding wall	11.22	285	0.090	11.1111	1.1020
344	12.20 in CTCL5 precast insulated sandwich panel 5 cladding wall	12.2	310	0.090	11.1111	1.1983
345	10.24 in CTW1 precast insulated sandwich panel 5 load bearing wall	10.24	260	0.091	10.9890	1.0180
346	11.22 in CTW2 precast insulated sandwich panel 5 load bearing wall	11.22	285	0.090	11.1111	1.1020
347	12.20 in CTW3 precast insulated sandwich panel 5 load bearing wall	12.2	310	0.090	11.1111	1.1983
348	13.19 in CTW4 precast insulated sandwich panel 5 load bearing wall	13.19	355	0.089	11.2360	1.2798
349	14.18 in CTW5 precast insulated sandwich panel 5 load bearing wall	14.18	360	0.089	11.2360	1.3759
350	15.15 in CTW6 precast insulated sandwich panel 5 load bearing wall	15.15	385	0.080	12.5000	1.3094
351	13.18 in CTW7 precast insulated sandwich panel 5 load bearing wall	13.18	335	0.089	11.2360	1.2789
352	14.18 in CTW8 precast insulated sandwich panel 5 load bearing wall	14.18	360	0.089	11.2360	1.3759

Section No as per Dubai Municipality approved material list
Published on DM website. www.dm.gov.ae

SYSTEM USE

External façade cladding:

Concretec's insulated panels are widely used for the external façade cladding. Where it saved time and money where it used.

Jumeriah Beach Residence,
Dubai Marina Phase one and
Dubai Marina Phase two are good examples.



External Insulated Load bearing wall:

Concretec's insulated load bearing walls are widely used for the external walls in low rise buildings and labour accommodation.



External Insulated Warehouses wall:

Concretec's insulated panels can be used for the external warehouses walls to provide the required thermal insulation.

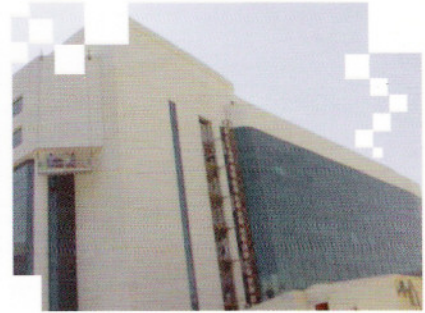
Dubai Humanitarian City is a good example



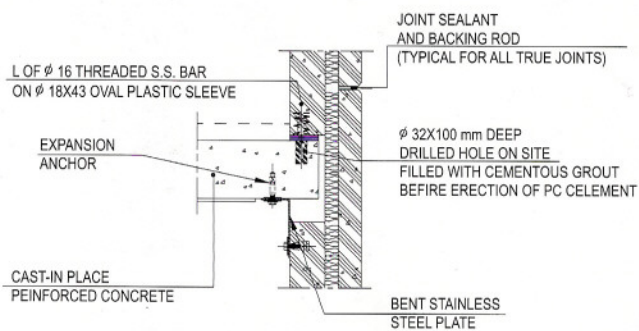
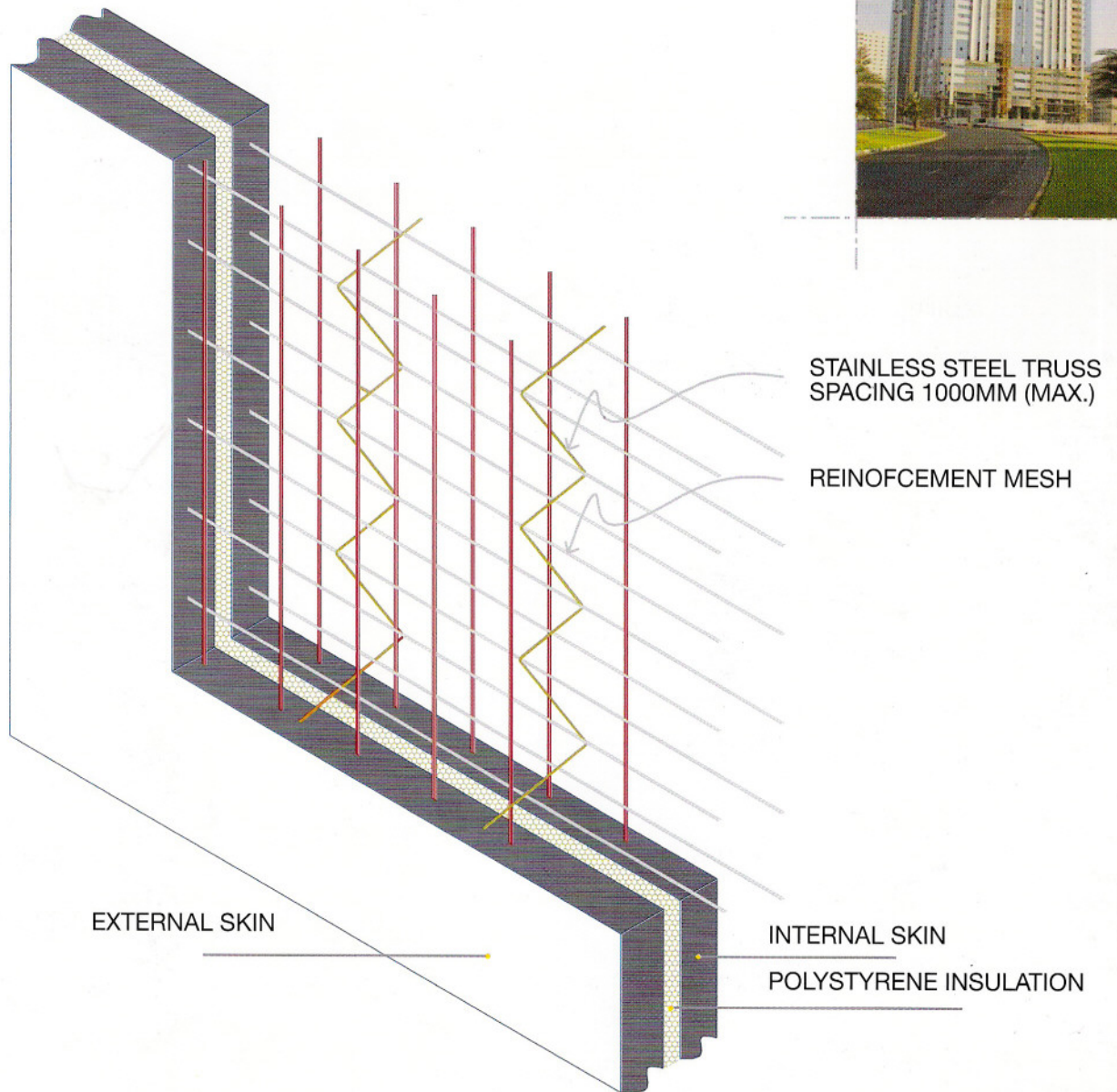
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SYSTEM ADVANTAGES

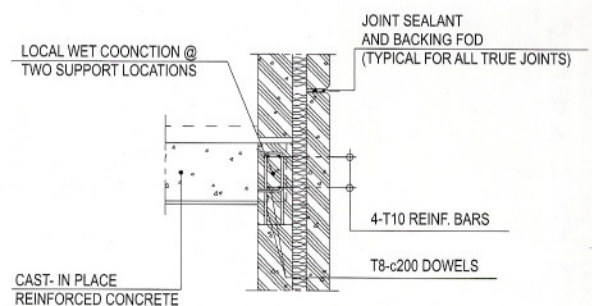
- Energy saving.
- Cost saving.
- Time Saving.
- High Quality.
- Stability.
- Easy Installation.
- Easy for maintenance.
- Environmentally Safe.
- Dubai Municipality approved.
- Functional guarantee for 60 years.
- Panel can be designed to any size and shape.
- Panel is totally harmless to human and environment.
- Panel is good resistant against shocks and beats up to 40 N/mm^2 .



SYSTEM DETAILS



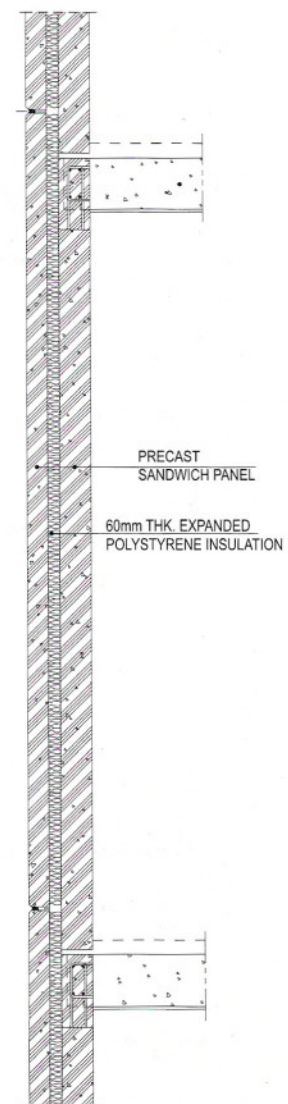
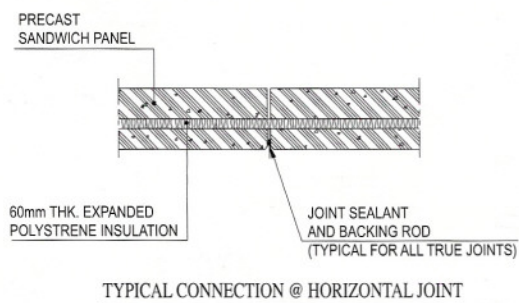
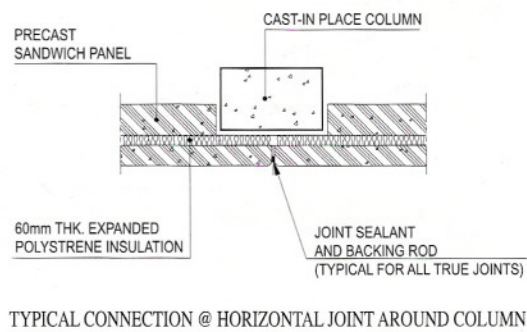
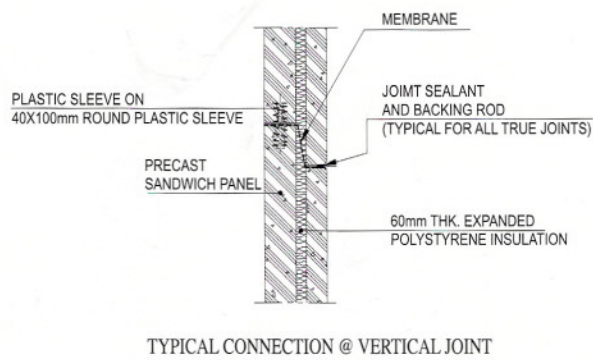
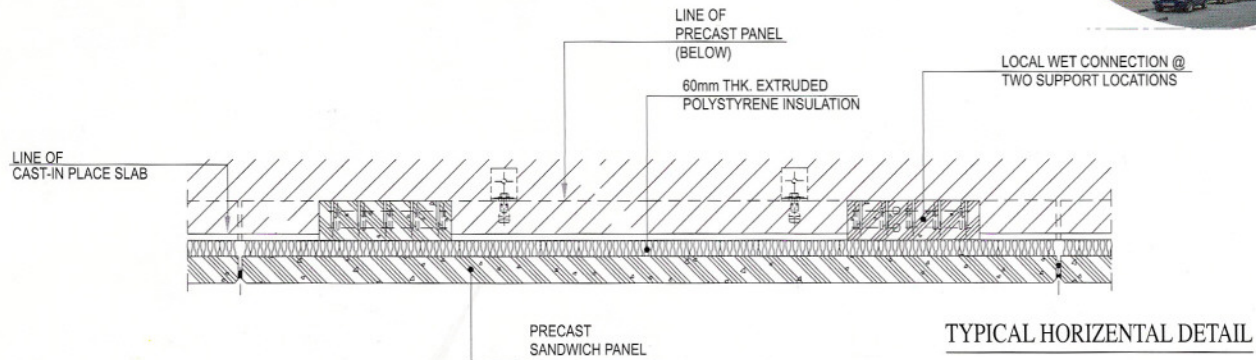
TYPICAL DETAIL-1



TYPICAL DETAIL-2

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SYSTEM DETAILS



For guidness only

SAMPLE PROJECTS

**Jumeirah Beach Residence
Sector 07**



**Jumeirah Beach Residence
Sector 07**



Dubai Humanitarian City



SAMPLE PROJECTS

**Dubai Marina
Phase II**

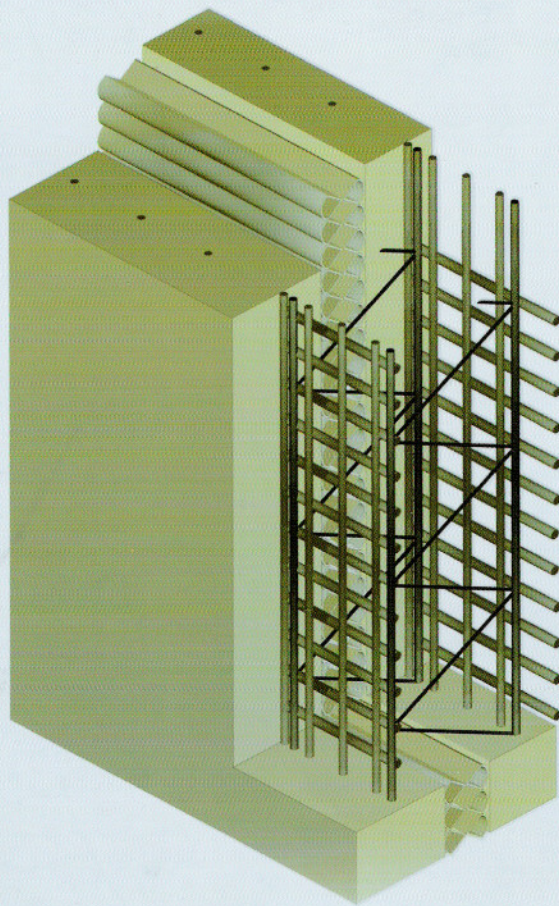


**Dubai Marina
Phase II**



**Dubai Marina
Phase I**





PRECAST SANDWICH PANEL DETAILS

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