

# A Brief History of Precast Concrete

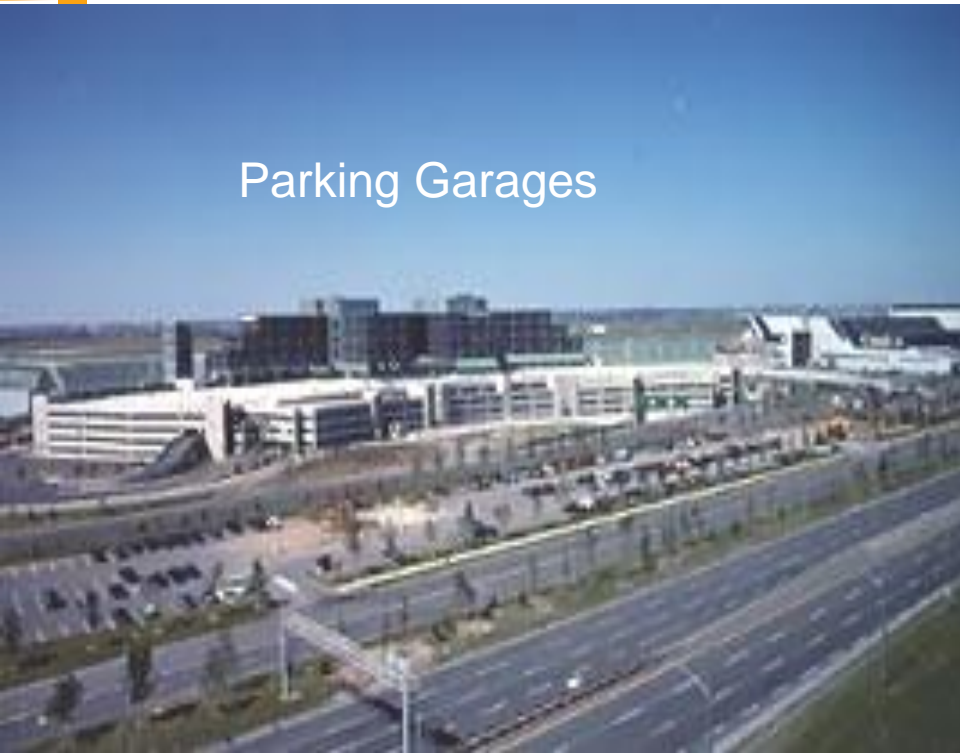


CANADIAN PRECAST/PRESTRESSED CONCRETE INSTITUTE

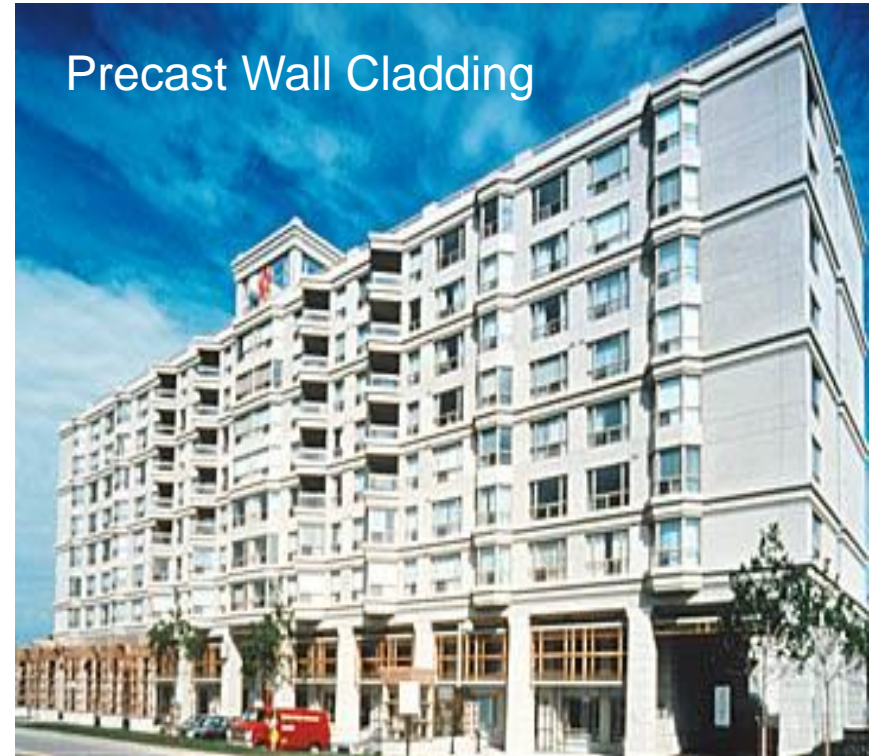
## **This program is registered with CPCI for continuing professional education.**

- CPCI's continuing-education program emphasizes on learning for architects, engineers and other construction professionals. It helps those in the construction industry to keep current, master new knowledge and skills, plan for the future, and responsibly meet the role society entrusts to a professional. In doing so, it has the potential to be one of the primary forces in the improvement and revitalization of the construction industry.
- CPCI provides and numbers of seminars and presentations administered by CPCI representatives and CPCI members. Please contact CPCI for more information at (877 )937 2724 or email [info@cpci.ca](mailto:info@cpci.ca)

Parking Garages



Precast Wall Cladding



Bridge Girders



# The History - Precast Concrete



- Roman Empire - 2,000 years ago
- Pozzolana cement
- Concrete technologies lost dark ages
- Portland cement invented in early 19th Century

# The History - Precast Concrete

- Technology and engineering improved
- First use of reinforced concrete for bridges.
- Same advances in technology and engineering brought first use of precast concrete.





# The History - Precast Concrete



- Explosion of technologies after the Second World War
- Further experiments with new products
- Quality steel allowed development of prestressing and design innovations
- Made precast concrete girders and factory wall panels
- High strength concrete was developed
- Admixtures increased concrete's performance
- Specialty trucks cranes evolved
- Many new design ideas.

# The History - Precast Concrete

- Prestressed concrete started in Canada in 1952.
- Research and more accurate design methods
- Better understand the behavior and performance of prestressed concrete
- Prestressing materials and technology developed rapidly worldwide.
- Host of outstanding bridges, buildings and building systems, stadiums, arenas and other structures constructed between 1952 and today.



Bromley Place  
Calgary, AB  
31 stories tall

# The History - Precast Concrete

- Architectural precast concrete more popular
- Building sciences evolved
- Wall designs included understanding of vapour transmission through the building envelope
- The rain screen system, modified rain screen system became common practices in '70's.
- Best Practice Guide – Architectural Precast Concrete Walls published by CMHC.
- Future trends - non metallic reinforcement, composites, ultra high strength concretes and sustainable construction.



Insulated Wall Panels



# Our Industry

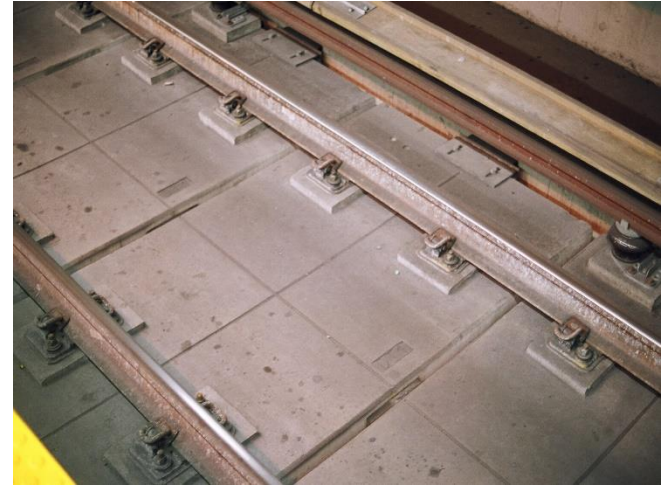
Different industry segments:

- Structural precast / prestressed concrete (represented by CPCI)
- Architectural precast concrete (represented by CPCI)
- Standard products (inventory precast)



# Our Industry

- CPCI members custom manufacture precast products:
  - each piece unique and custom engineered, manufactured shipped and erected as integral part of total building solution
- Manufacturers of custom precast concrete products + systems represented by CPCI



Subway  
Tunnels

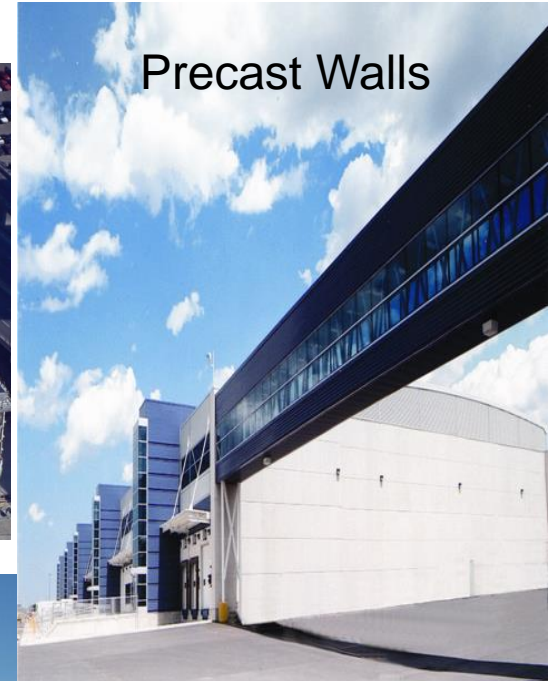


# Our Industry

Air Canada Centre  
Structural Precast Buildings



Precast Walls



Precast  
Floors



CPCI is an national association whose members manufacture precast concrete products and are located all across Canada.

In North America precast concrete is a \$6 billion industry



# Precast Concrete

- structural
- architectural



Precast Concrete ...

Sustainable Structures For Tomorrow!

# Contact CPCI for more information

Web:

[www.cpci.ca](http://www.cpci.ca)

Members:

[www.precastsearch.com](http://www.precastsearch.com)

CPCI email:

[info@cpci.ca](mailto:info@cpci.ca)

