



Light Gauge Steel Framing (LGSF) Prefab Building Technology

Ideal alternative construction technology for:

- Hotels and resorts
- Farmhouse or mountain retreat
- Commercial buildings
- Hospitals, schools & colleges
- Rooftop extensions
- Pods and cabins
- Portable structures
- Warehouses

Smarter way to build



Delivering Simplicity

About LGSF

Light Gauge Steel Framing (LGSF)

LGSF is a construction technology using cold-formed steel produced by highly advanced and precise machinery. This method is highly efficient and can be adopted to practically any building type. It is also environmentally sustainable and produces a strong, high performing structure

LGSF Delivers:

- A viable alternative to traditional construction
- Fast and predictable outcomes
- Energy efficient and environmentally friendly

LGSF Design

- **LGSF Typical profiles:** 89mAm/150mm (Thk 0.7 to 2.0mm)
- **Possible configurations:** 100% LGSF or HR/LGSF Hybrid



Wall Cladding Materials

- Fiber Cement Board / Planks
- Cement Particle Board (Bison)
- Knuf Aquapanel
- Aluminium Composite Panel (ACP)
- Many other cladding options are available



Roof Options

Pitched:

- Fiber Cement Board & galvalume sheet or Shingles
- PUF Sandwiched panel

Flat Roof:

- Decking with concrete



Floor Options

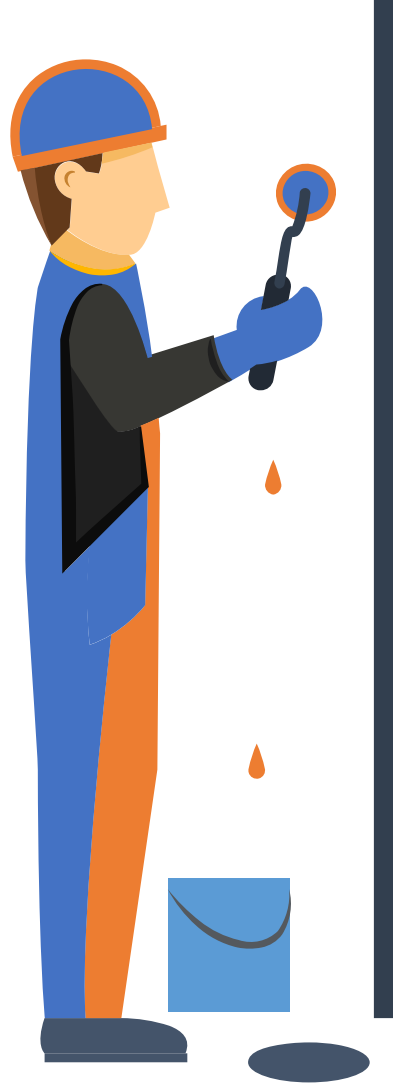
- Floor joists and decking sheet with concrete
- Fiber cement board (18 or 24mm)



Insulation

- Rockwool or Glasswool

Advantages



Faster Construction – upto 50% savings in time



Long building life – uses galvanized steel



Environmentally friendly



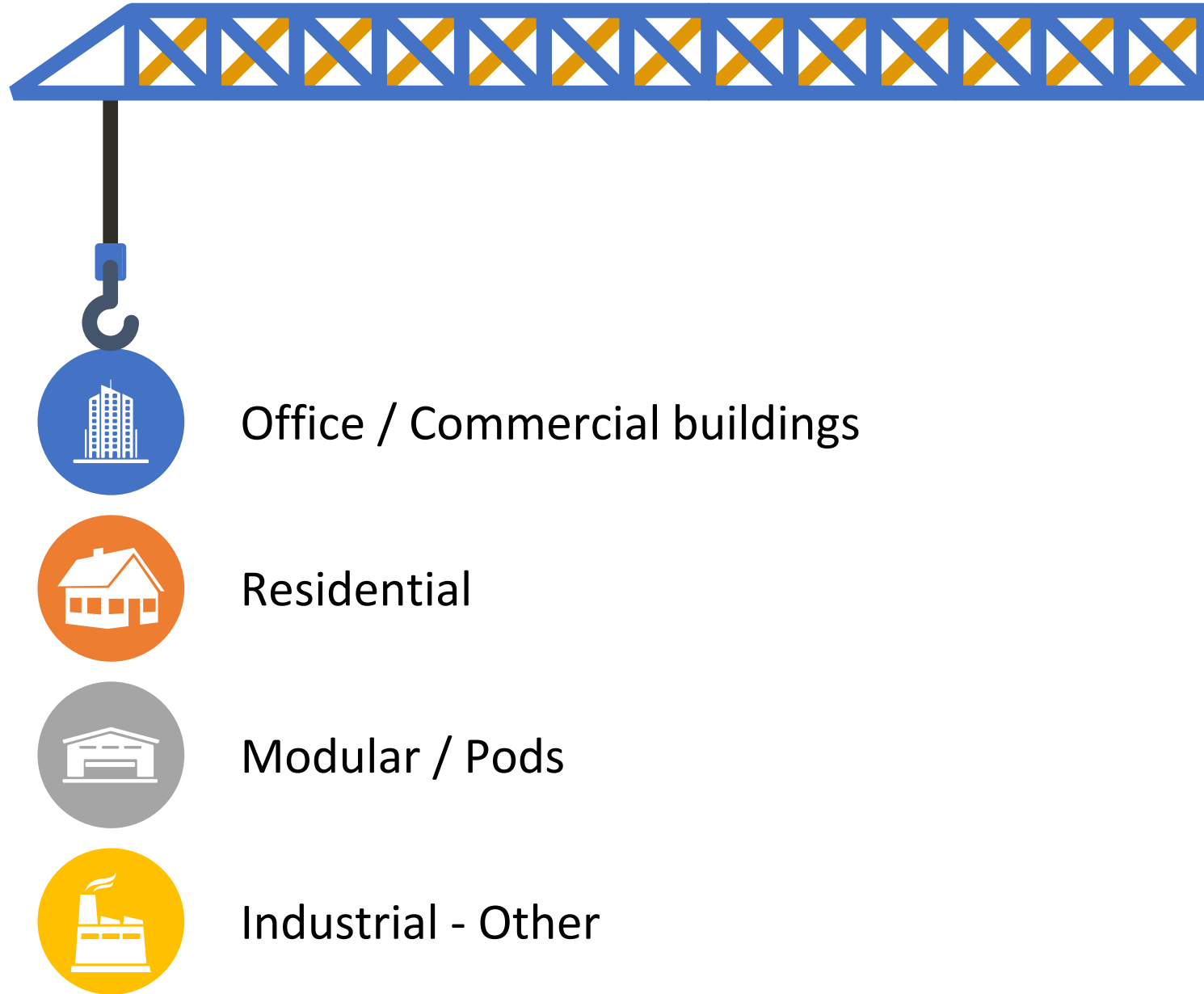
Dry Construction, does not use water



Better thermal performance by using insulating material

LGSF Suitable Building Types

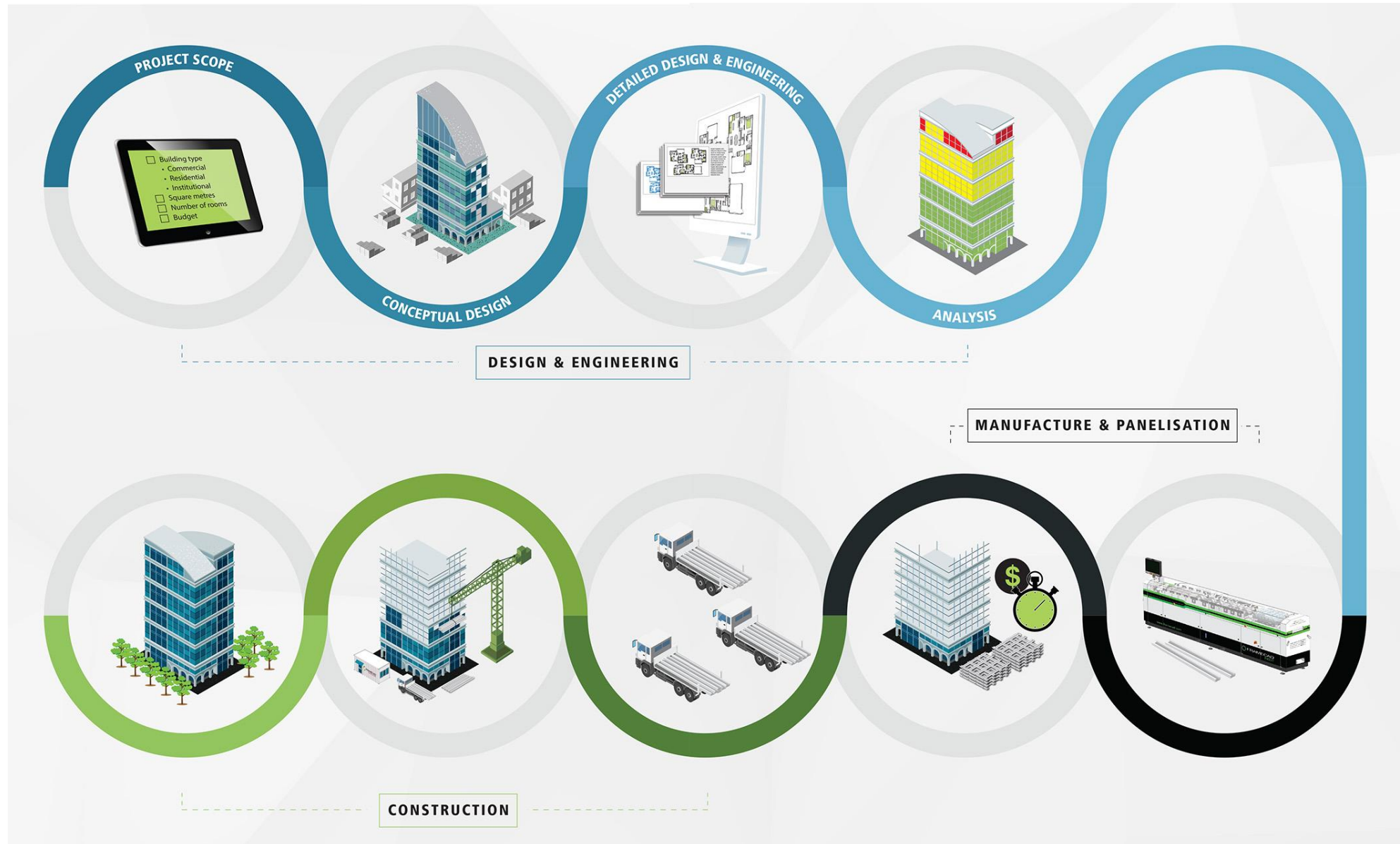
G+3 buildings can be constructed using 100% Light Gauge Frames, additional floors can be constructed using a hybrid HR/CR construction



Comparison with conventional construction

BRICK & RCC CONSTRUCTION	LGSF CONSTRUCTION
Quality of construction varies as materials sourced from different vendors.	All materials are of uniform quality.
Huge transportation costs as all materials are heavy	Huge savings in transportation costs as LGSF construction is 1/10th weight of that of brick wall.
Uneven surface requires more plastering material and reduces carpet area by 25%	Straight finished surface do not add up extra plastering materials and reduces carpet area by only 10-15%
Brick walls are more prone to shrinkage cracks	Dry walls do not experience shrinkage cracks.
Wet construction which is time consuming and involves curing at various stages.	Dry and fast construction and no curing needed.
Life of the building and durability using CFS framework	Expected life span of 100 years or so whilst durability is subject to 'abuse by user'
Waterproofing and patches on walls	The method/ material used and workmanship takes care of these issues
External and internal finishes	Treatment using 'stucco', tiles, stones, paints etc works well on the cladding and have cleaner lines than brick walls
Hollow sound/ sound transfer in wall structures	Filling the cavity with Rockwool Insulation or CLC takes care of the STC, above the codes. Floor 'heel sound' transfer can be treated with usage of acoustic lining on floor before tiling
Insulation leading to energy savings	The infill material and has a substantial improvement over the brick wall
Door and window finishes	Better due to accuracy of openings
USPs and weaknesses for DRY WALL Constructions	Time factor and increase of carpet area being USP, whilst weakness is that designs need to be frozen before starting detailing and execution
CFS framework construction more expensive than RCC construction	Under present market prices, the direct construction costs are at PAR, but CFS could lead to a higher ratio of Carpet to built-up area. The Financial interest burden of RCC construction because of time factor greatly reduces in CFS framework construction

LGSF Fully Integrated Construction Process



Case 1: Rooftop Project

Project Area: 1,200 sft

LGSF Quantity: 2.8MT (2.4kg/sft)

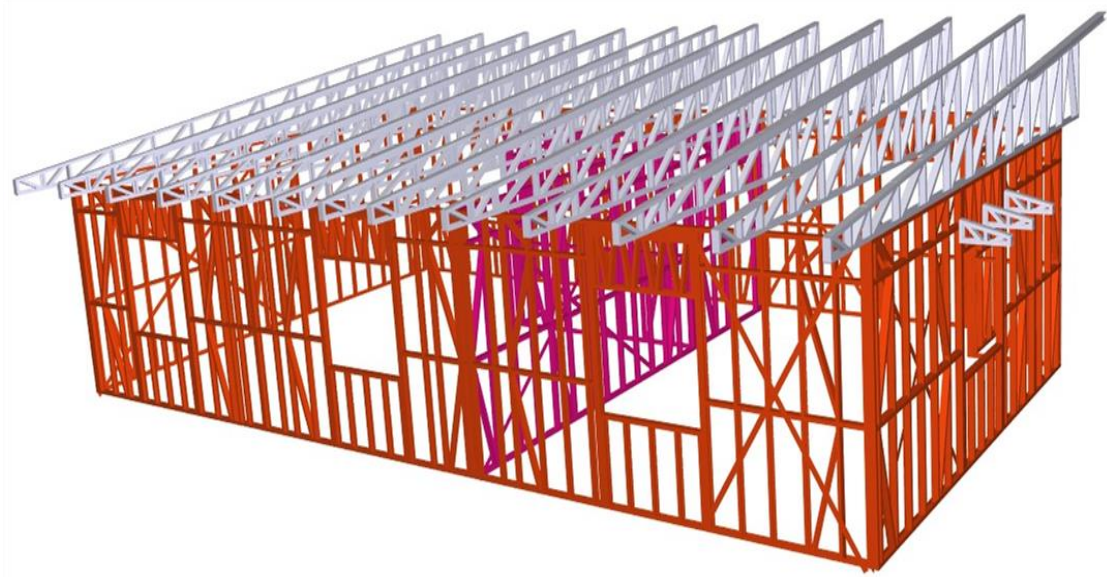
Wall composition:

- **Outer:** 8mm Fiber Cement Board + 10mm FCB Planks
- **Inner:** 8mm FCB + 12.5mm Gypboard
- **Insulation:** 100mm / 64kg/m³ Rockwool

Roof: 50mm PUF Sandwiched panel

- Minimal civil work (screed concrete)

3D Framing Design





Chajja/Sunshade

X-Bracing

50mm PUF Panel Roof





1st layer 8mm Cement Board



Primer Applied on FCB



ACP Cladding

Moisture Barrier Membrane



Cement Planks Cladding

Finished Structure



Case 2: Prefabricated Structure - Portable

Prefab size: 36ft x 11ft x 11ft

Structural: Primary: Hot-rolled / Wall & Roof: LGSF

Wall composition:

- **Outer:** 10mm Bison Board + Vinyl cladding
- **Inner:** 6mm FCB + 12.5mm Gypboard
- **Insulation:** 50mm Rockwool

Roof: 50mm PUF Sandwiched panel



Light Gauge Steel Frames



Bison Board Sheeting

Interior Finishes



Finished Structure



Photos for Reference

Possibilities are endless!

Resorts and Retreats

2nd Homes / Farmhouses

Affordable Housing G+4

Retirement Homes & villas

Hotels & restaurants

Terrace Additions

Model Homes for Builders

Hybrid Commercial Buildings

Typical Buildup





G+1 Structures



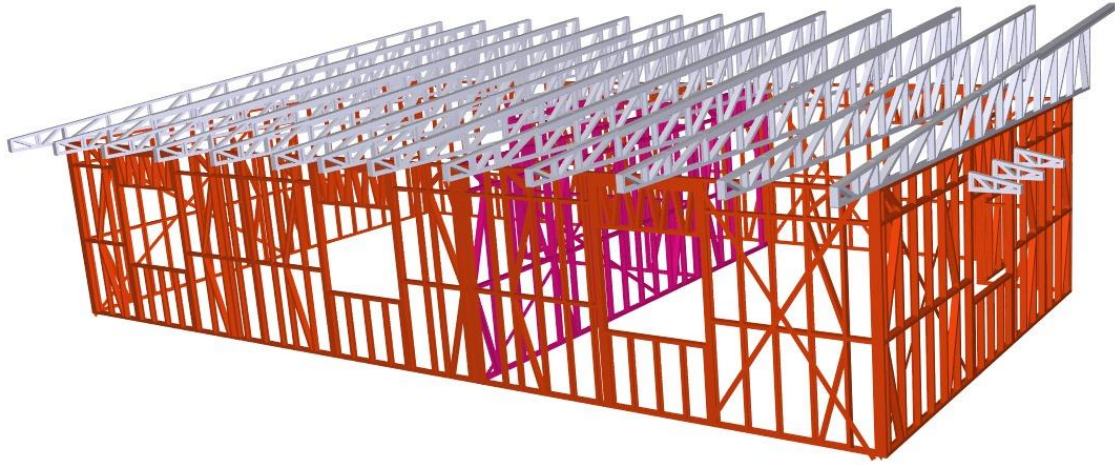
G+2 Structures



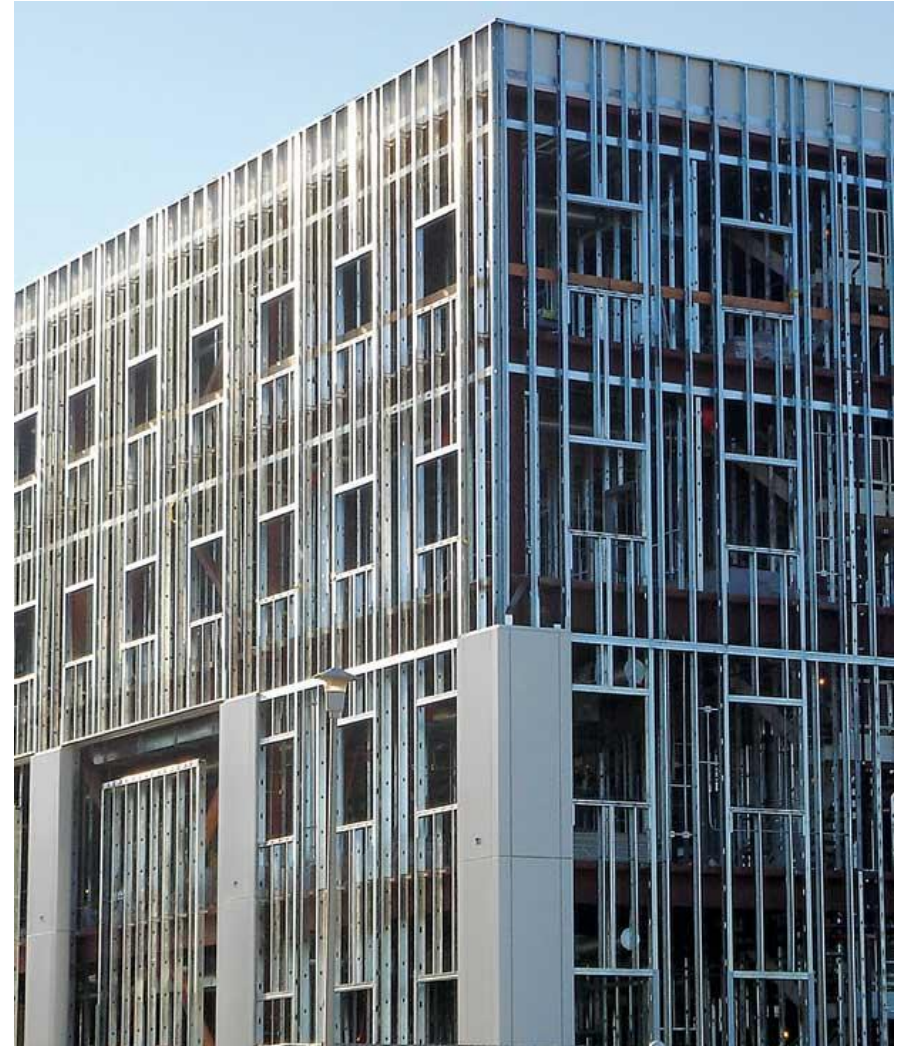
G+4 Housing



Rooftop Extensions



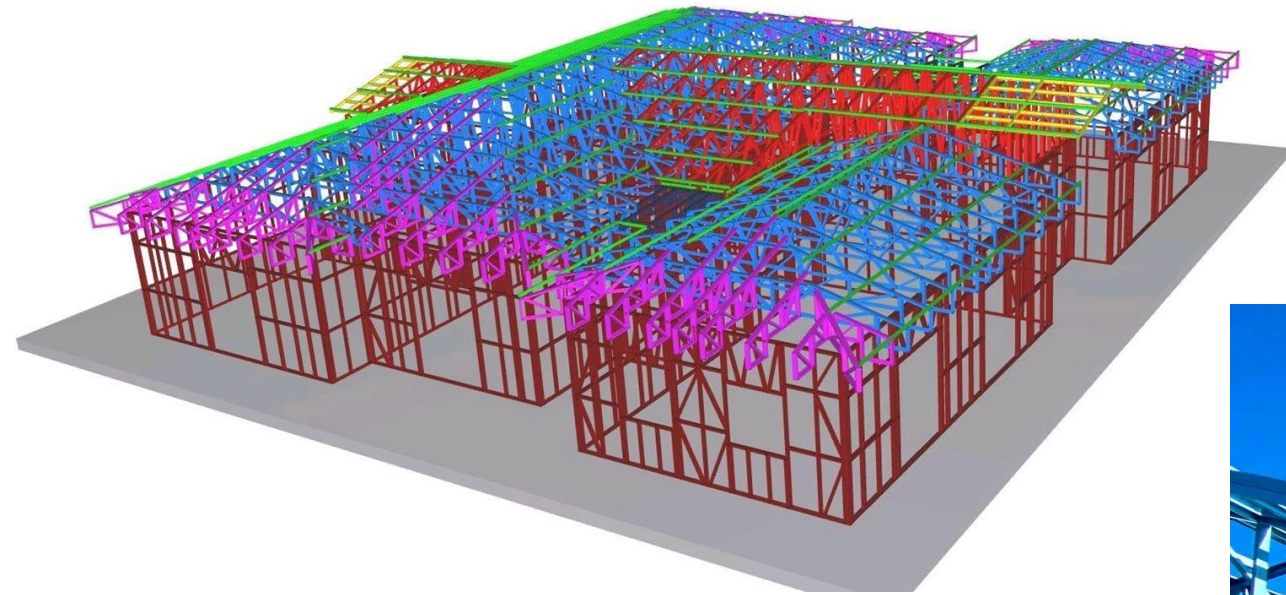
HR/CR Hybrid for High Rise Buildings



Pods and cabins



From Model to Reality





Simplicity





Modular / Prefab



CFS Codes and Standards

INTERNATIONAL STANDARDS

- Low-rise Buildings System Manual (MBMA) - Metal Building Manufacturers Association Inc.
- Manual for Steel Construction, Allowable Stress Design (AISC) - American Institute of Steel Construction Inc., USA
- Cold Formed Steel Design Manual (AISI) - American Iron and Steel Institute, USA
- IS 800:2007. IS 875

INDIAN CODES AND STANDARDS USED

- IS 875: Part 1 to 5 - Loads on Structure
- IS 800:2007 - Design of Steel Structures
- IS 801:1975 & AS/NZS 4600:2005 - Design of Cold Formed Steel
- IS 456:2000 - Design of Concrete
- IS 1893:2002 - Earthquake Resistant Design

STEEL USED

- 0.75mm to 1.50 mm thick coil
- 350 MPa - 550 MPa structure grade confirming to ASTM A 1003
- Galvanized steel 275 GSM
- Primary suppliers - TATA/JSW

Contact us for your next project



www.duroconprefab.com

83008-10025