

COMPANY & PRODUCT BROCHURE

Ecometal Matrix Engineering Pvt Ltd

Building the World's Future, One Panel and One Module at a Time

Light Gauge Steel (LGS) + Foam Concrete Prefabricated Building Systems

IS 811 · IS 801 · IS 2185 Pt 4 Compliant | DesignAI Engineered | SiteIQ Monitored

40–60%

Faster than RCC

60 kg/m²

vs 250 kg/m² masonry

60–70%

Less embodied carbon

50+ yrs

Structural design life

Residential · Farmhouses · Resorts & Cottages · Hotels · Worker & Student Accommodation · Institutions & Healthcare · Industrial & Warehousing · Defence · Extensions

SIPCOT Pochampalli, Krishnagiri District, Tamil Nadu

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SECTION 01

About Ecometal Matrix Engineering

Ecometal Matrix Engineering Pvt Ltd (EME) is a next-generation offsite construction company based in South India, delivering high-performance panelised and modular building systems using hybrid steel technologies. We combine international precision with local execution to meet the region's urgent demand for fire-safe, sustainable and rapidly deployable building infrastructure — from affordable housing and farmhouses to resorts, hotels, institutions, industrial sheds and defence facilities.

From our factory at SIPCOT Pochampalli in the Krishnagiri–Hosur industrial belt, EME manufactures IS 811 / IS 801 compliant cold-formed Light Gauge Steel (LGS) structural sections and IS 2185 Part 4 certified foam concrete systems, and delivers them as complete buildings under single-point EPC contracts.

Mission, Vision & Values

- **Mission:** To lead India's transition to offsite construction by delivering high-performance, compliant and cost-effective building systems that meet the region's growing demand for housing, healthcare, education and industrial infrastructure.
- **Vision:** To become the most trusted provider of light gauge and hot rolled hybrid steel construction solutions, driving innovation in fire safety, sustainability and operational excellence across the built environment.

Core Values

- **Speed:** Projects completed rapidly through effective offsite construction and precise engineering, allowing clients to adhere to tight deadlines.
- **Safety:** Fire safety first — stringent standards protect occupants and assets, with a safe working environment for everyone involved.
- **Sustainability:** Eco-friendly practices, responsible sourcing and waste reduction. Hybrid light gauge and hot rolled steel systems support greener construction.
- **Transparency:** Clear, honest, collaborative communication — stakeholders stay informed throughout the project lifecycle.
- **Impact:** Precision offsite solutions enable swift delivery at competitive prices and make efficient, safer construction accessible to all.

The Founding Team

	Gangaivendan Padmanabhan	Mohandoss Vellaichamy
Role	Co-Founder & Managing Director	Co-Founder & Director (Technical)
Based	Chennai, Tamil Nadu	United Kingdom — monthly site visits
Background	5+ years construction business development; South India contractor & developer network; P&L leadership and institutional procurement	UK-qualified engineer; AI construction platforms; design-to-manufacture systems integration; IoT, computer vision and BIM-to-CNC engineering
Focus	SIPCOT liaison, commissioning & client acquisition	Technical platform & structural oversight

EME at a Glance

Facility	Detail
Location	SIPCOT Pochampalli (Bargur), Krishnagiri District, Tamil Nadu — 2 acres on 99-year lease
Plant	2 CNC roll-forming lines, foam concrete plant, 5T EOT crane — 250 MT/yr C-studs, 150 MT/yr tracks/joists/rafters, 2,000 m ³ /yr foam concrete
Raw material	JSW Salem Steel 60 km away — primary G550 HDGI coil supplier
Market access	Bangalore 100 km; Hosur cluster 15 km; NH44 Chennai–Bangalore highway direct
Environment	Green category — zero liquid discharge, no stack emission, no hazardous waste; 50 kW rooftop solar; rainwater harvesting

SECTION 02

The Building System — LGS + Foam Concrete

A complete prefabricated wall: a cold-formed steel frame plus a lightweight foam-concrete infill. Both are produced in-house, on one production line, from one BIM model.

Light Gauge Steel (LGS) Frame

- Cold-formed G550 HDGI steel studs, tracks, joists and rafters — CNC roll-formed to ±0.5 mm and QR-labelled for full traceability.
- G550 HDGI coil, Z275 zinc coating (IS 1079 / IS 277) — 1,000-hour salt spray tested per IS 6745.
- Compliant to IS 811:2019 and IS 801:2015; designed to IS 800:2007 Limit State Design.
- 60 kg/m² wall weight — versus 250 kg/m² for masonry. 30–40% lighter superstructure means smaller, cheaper foundations.

Foam Concrete (FC) Infill

- Lightweight cementitious infill pumped into the LGS cavity — one pour delivers thermal, acoustic and fire performance together.
- FC600 wall infill (600–700 kg/m³) and FC1000 floor screed — inline density-monitored to ±20 kg/m³.
- Compliant to IS 2185 Part 4; A1 non-combustible; pumped up to 50 m.

From Steel Coil to Site-Ready Panel

Line	Process
LGS roll-forming	G550 HDGI coil → decoil & straighten → CNC roll-form (16–20 stations) → punch & notch → cut-to-length ±0.5 mm → QR label → inspect & bundle. Continuous cold process — no heat, no effluent.
Foam concrete	OPC 53 + foam + water → foam generator → FC mixer → inline density check ±20 kg/m³ → mould or site pump → 7–28 day cure. Controlled mix, zero liquid discharge.

±0.5mm

CNC cut accuracy

<2%

Steel scrap (recyclable)

Zero

Liquid effluent

Green

TNPCB category

Integrated System — Key Properties

Property	FC600 Wall Fill	FC1000 Floor Fill	LGS Frame (G550)	Standard
Density	600 kg/m³	1,000 kg/m³	7,850 kg/m³	IS 2185 Pt 4
Compressive strength	≥3.5 MPa	≥10 MPa	fy = 550 MPa	IS 2185 / IS 811
Thermal conductivity	0.14 W/mK	0.23 W/mK	50 W/mK (bridged)	ISO 10456
Fire resistance	60 min	90 min composite	A2 / 90 min (coated)	IS 3809
Acoustic (Rw)	52–62 dB	LnT,w 54 dB	—	ISO 717
Water absorption	<5% vol	<3% vol	Zero (galvanised)	IS 2185 Pt 4
Combustibility	A1 non-combustible	A1 non-combustible	A2/B (coated)	EN 13501-1
Design life	50+ years	50+ years	50+ years (Z275)	IS 811 / practice

Why LGS Beats Conventional Construction

LGS vs Traditional Construction

Aspect	LGS Construction	Traditional Method
Construction time	Rapid — prefabrication makes projects up to 40% faster	Slower due to curing and wet works
Weather dependency	Minimal — fabrication in controlled environment	Delays common during monsoon
Foundation	Lighter loads — simpler foundations, reduced material & labour	Heavier loads — deeper, larger foundations
Material waste	Minimal (precise CNC fabrication)	High onsite cutting and breakage
Carbon footprint	Lower; LGS steel fully recyclable, less concrete	Higher; cement production is carbon intensive
Load bearing	Excellent for low to mid-rise structures	Suited to heavy load/high-rise
Design adaptability	High — customisable, modular, panelised	Limited by material constraints
Seismic resistance	High — flexible, ductile, detailed to IS 1893	Moderate — rigid, brittle under stress

Advantages at a Glance

- **Speed & efficiency:** On-site assembly in days; no curing or plastering; consistent factory quality reduces site errors.
- **Strength & durability:** 350–550 MPa cold-formed sections; withstands high winds and seismic zones III–V; zinc coating resists corrosion, pests and moisture.
- **Economics:** Lower labour cost, cut timelines, CNC precision minimises wastage, lightweight logistics.
- **Fire & safety compliance:** Non-combustible Class A fire-rated framing meets NBC 2016 Part 4 and IS 1642; ECBC 2017 compatible insulation.
- **Sustainability:** 100% recyclable steel; less embodied carbon; eligible under IGBC and GRIHA green building credits.

<1%	₹16,500 Cr	6.3%	40–60%
LGS penetration in India	India LGS market 2025	CAGR to 2030	Penetration in UK/US/AUS

Massive headroom: LGS penetration in India is under 1% versus 40–60% in the UK, USA and Australia. Government demand drivers — PMAY-U Phase 2 (10.56 lakh houses sanctioned), TNUHDB housing, SIPCOT worker housing and GeM institutional procurement — all favour certified offsite systems.

Technical & Material Specification

Base Material & Sections

Parameter	Specification
Steel grade	G550 (S350GD/S450GD equivalent) cold-formed; fy = 550 MPa, tensile >480 MPa, elongation >10%
Galvanised coating	Z275 (275 g/m²) hot-dip zinc, both surfaces; coastal option Z600 (600 g/m²) / polymer topcoat
Section types	Lipped C-studs & joists (C89 / C140 / C200 / C250 / C350), U-tracks, Z-purlins & girts
Depth range	70–300 mm web; 40–80 mm flange; 1.0–3.0 mm thickness; lengths to 12.0 m (customisable)
Tolerance	CNC roll-forming to ±0.5 mm; QR-coded component IDs; ISO 9001:2015 quality assurance

Foam Concrete Grades

Grade	Density	7-Day Strength	Thermal Cond.	Primary Application
FC600	600 kg/m³	2.5–3.0 N/mm²	0.12 W/mK	Roof insulation board; non-loadbearing wall infill
FC700	700 kg/m³	3.0–4.0 N/mm²	0.16 W/mK	Wall infill; primary grade for accommodation
FC800	800 kg/m³	4.0–5.5 N/mm²	0.20 W/mK	Armoury walls; humidity-sensitive stores
FC1000	1,000 kg/m³	6.0–8.0 N/mm²	0.28 W/mK	Structural floor screed; acoustic separation

Panelised LGS Wall System

Pre-engineered, factory-assembled wall panels: cold-formed galvanised steel sections integrated with insulation, sheathing and internal linings. Panels up to 12 m long (typical 2.4 m wide), 25–35 kg/m², installed at up to 300 m²/day per trained crew.

- **Structure:** C-studs at 400/600 mm centres; self-drilling fasteners to IS 3757 / IS 1367; diagonal or integral bracing
- **Thermal & acoustic:** Insulation options: rockwool (non-combustible, high acoustic), EPS/PU foam, aerated lightweight concrete. U-values ≤0.3 W/m²K; STC 50+ dB with double-layer boards
- **Fire & compliance:** NBC Part 4 + BMPTC PACS; IS 1893 seismic; coastal & high-altitude wind design; ISO 9001:2005 certified manufacturing with third-party testing
- **Finish options:** Brick clad, brick slip, composite panel, insulated render, timber cladding, ventilated rainscreen

LGS Floor Cassette System

Pre-engineered floor panels — C200/C350 joists at 400 mm centres, composite LGS trimdeck and FC1000 topping (65 mm) — spanning up to 5.4–6.0 m without intermediate support. Dead load 1.8–2.2 kN/m² versus 5.0 kN/m² for 200 mm RCC slab. Fire rating 120 minutes; acoustic Rw 48 dB airborne.

Element	Specification
Load capacity	Residential 2.0–3.0 kN/m ² · commercial/institutional 3.0–5.0 kN/m ² · assembly/corridor 4.0 kN/m ²
Decking	Cement boards (12–15 mm), steel deck with concrete topping, or OSB/plywood for dry applications
Service integration	Pre-punched holes for MEP; raised floor zones; factory-cut service cutouts
Installation	Flat-packed or volumetric; 300–500 m ² /day with trained crew; crane-lifted floor-by-floor

SECTION 05

Standards & Compliance

Compliance is built into manufacturing — IS 811 and IS 801 conformity is verified at the CNC production stage, mandatory for government and institutional procurement.

Compliance Area	Relevant Indian Standards & Bodies
Structural design	IS 800:2007 (general steel), IS 801:2015 (cold-formed design), IS 811:2019 (sections), IS 875 Pts 1–3 (loads/wind), IS 1893 (seismic Zones II–V), IS 456 (foundations)
Fire safety	NBC 2016 Part 4, IS 1642, IS 3809 (fire resistance levels), IS 1641, IS 2189 (detection)
Foam concrete	IS 2185 Part 4 — CLC blocks & systems; CSIR-SERC tested
Thermal performance	ECBC 2017, MoEF guidelines, ISO 10456 / ISO 6946
Certification	BMPTC PACS (Performance Appraisal Certification); GHTC-India listed technology; INSDAG guidelines
Factory production	ISO 9001:2015 QMS; QR-code traceability; NABL lab cube tests; SE-stamped calculations for every project
Approvals	CMDA, DTCP, BBMP, Smart City SPVs, local development bodies; GeM catalogue-listed modules

What this unlocks for clients

- PMAY-U and TNUHDB affordable housing bids — IS 801 certified units with ₹4 Lakh/unit Technology Innovation Grant under GHTC-India.
- Direct GeM orders for institutional buildings — pre-designed units up to ₹25 L without tender.
- Bankable RERA commitments — fixed-price, fixed-date EPC contracts with SiteIQ audit trails.

SECTION 06 — PRODUCT LINE

EME BuildPro — Multi-Storey Residential

India needs 72 million homes. EME BuildPro changes the economics of apartment construction: floor-by-floor in 8 weeks, no curing waits, identical CNC-factory units, and a SitelQ dashboard that generates PMAY milestone certificates automatically. From plot to possession in 10 months (G+3) — your RERA date holds.

8 wks

Per floor incl. fit-out

10 mo

G+3 plot to possession

₹4L/unit

PMAY tech grant

Zero

RERA penalty exposure

Structural System — LGS + HRS Hybrid Frame

Load-bearing LGS to G+3; LGS + Hot Rolled Steel hybrid for G+4 and G+5, designed throughout to IS 800:2007. FC600 walls give 60-minute fire rating; FC1000 composite floors 90 minutes — a full IS 3809 compliant package with IS 1893 Zone II/III seismic documentation.

The BuildPro Range

ROW HOUSE BLOCK ₹1.5–4 Cr total project

G+1 · 4–8 units · 2–3BHK per unit · individual or shared foundations

Entry point for developers building 4–8 units. LGS load-bearing wall system throughout — no primary frame needed. Each unit 700–1,200 sqft.

Ideal for: Small developers · landowners · row housing · urban plots

WALK-UP APARTMENT ₹4–12 Cr total project

G+2 / G+3 · 9–18 units · 3–6 units per floor · no lift required

The core product for the suburban developer. LGS load-bearing wall system to G+3, FC600 walls for thermal and acoustic separation. SitelQ generates PMAY milestone certificates automatically.

Ideal for: Mid developers · PMAY AHP · cooperative societies · urban apartments

MID-RISE BLOCK ₹12–30 Cr total project

G+4 / G+5 · 20–40 units · HRS+LGS hybrid frame · lift standard

The full-scale developer product. HRS primary frame carries vertical and lateral loads; LGS infill panels provide thermal, acoustic and fire performance — 40% lighter than RCC.

Ideal for: Developers · housing projects · IT corridor apartments · premium residential

PMAY AHP CLUSTER ₹5–12 Cr govt-funded

G+3 · 24–48 EWS units · 6–12 EWS/LIG units per floor · govt-partnered

GHTC-India listed technology qualifying for the ₹4 Lakh Technology Innovation Grant per unit above standard PMAY assistance, with SHA-256 certified auto milestone certificates.

Ideal for: PMAY AHP contractors · housing boards · TNUHDB · ULBs · EWS/LIG housing

Indicative EPC Rates (ex-GST, ex-foundation)

Project Type	LGS Frame ₹/sqft	LGS+FC ₹/sqft	Full TurnKey ₹/sqft
EWS/LIG residential (300–400 sqft)	850–950	1,050–1,200	1,400–1,600
LIG/MIG residential (600–800 sqft)	950–1,050	1,200–1,350	1,600–1,850
MIG/HIG residential (900–1,200 sqft)	1,050–1,150	1,300–1,500	1,750–2,100
G+4/G+5 HRS+LGS hybrid	1,100–1,300	1,350–1,600	1,900–2,400
PMAY AHP (EWS 300 sqft, bulk)	850	1,050	1,400

SECTION 07 — PRODUCT LINE

EME BuildPro Extensions — Build Up, Not Out

South India's rooftops are the most under-utilised real estate in the country — Chennai alone has an estimated 15,000+ flat-roofed commercial buildings on arterial roads, most with unused structural capacity. LGS weighs 1.8–2.2 kN/m² per extension floor versus 5.0 kN/m² for in-situ RCC — light enough to add floors within the existing structural reserve.

Rooftop Extensions

ROOFTOP OFFICE ₹25–80 Lakhs

Above retail · G+1 · 800–2,500 sqft · 8–10 week shell

One floor of modern serviced office above a two-storey commercial building adds ₹9–18 L/yr of rental income at zero land cost. LGS shell 8 weeks, fit-out 4 weeks.

Ideal for: Commercial building owners · high-street retail · serviced offices

ROOFTOP APARTMENTS ₹40–180 Lakhs

G+1 to G+3 above commercial · 400–1,200 sqft/unit · RERA eligible

2–4 residential units above an existing commercial building on a prime high street — rental yield plus capital value uplift where RCC would require foundation work.

Ideal for: Mixed-use developers · landlords · urban densification

ROOFTOP TERRACE / F&B ₹8–25 Lakhs

Any building · LGS pergola frame · 4–6 week installation

A lightweight LGS pergola, deck and outdoor kitchen transforms a dead rooftop into a revenue-generating F&B terrace, event space or yoga studio.

Ideal for: Restaurants · hotels · cafés · event operators

Plan Extensions & Mezzanines

- **Rear extension:** Extend behind existing property · LGS load-bearing · up to 6 m depth · 4–6 week structure
- **Side return:** Fill the gap between buildings · adds 800–1,500 sqft · 3–5 weeks
- **Corner infill:** Develop an unused corner of plot · 2–4 storeys · internal courtyard option
- **Industrial mezzanine:** Double usable area inside an existing shed · LGS C200 deck · 3.5 kN/m² floor load · 2–4 weeks, no structural work to main shed
- **Hospital & classroom extensions:** Inpatient wards, outpatient blocks, new classrooms — hygienic non-combustible interiors, MEP-ready walls, rapid CSR/emergency deployment

Every Extension Project Includes Structural Appraisal

Existing foundation core samples and load test · column condition survey to IS 456 · roof slab punching-shear check · combined IS 1893 seismic assessment · anchor pull-out tests to IS 1367 · planning permission drawings generated by DesignAI.

SECTION 08 — PRODUCT LINE

EME FarmHome — A Home Worthy of Your Land

Across South India, landowners are rediscovering the farmhouse. Most take 18 months, run 30% over budget and deliver a compromised structure. EME FarmHome delivers a structurally engineered, IS-code certified home on your own plot in 8–12 weeks — zero termites, zero rot, 30% lighter foundations and fixed pricing from Day 1.

8–12 wks

Signing to handover

30%

Lighter foundation

50+ yrs

Structural life

₹4L max

Price certainty — fixed Day 1

The FarmHome Range

RETREAT ₹25–40 Lakhs

500–700 sqft · 1 bed + study · open kitchen-living · covered veranda

The perfect weekend escape — compact, efficient, beautifully proportioned, with a living room that opens to the veranda and a generous bedroom overlooking the land.

Ideal for: Studio · weekend · solo retreat

VILLA ₹45–70 Lakhs

900–1,200 sqft · 2 bed · 2 bath · open-plan living · veranda + utility

Built for families who split time between city and farm: generous master suite, second bedroom for guests, outdoor space that merges inside and out.

Ideal for: Family · semi-permanent · weekends + holidays

BUNGALOW ₹80–130 Lakhs

1,500–2,200 sqft · 3 bed · formal living + family lounge · wrap veranda

The definitive farmhouse for full-time habitation — wrap-around veranda on two elevations, farm-sized pantry and a master suite that is a genuine retreat.

Ideal for: Full-time · family · permanent home

ESTATE ₹140–220 Lakhs

2,500–4,000 sqft · 4 bed · formal dining + family room · staff quarters · garage

An architectural statement: formal entrance, double-height living, mature landscaping integration and separate staff quarters.

Ideal for: Estate living · landmark · investment

Transparent Pricing (ex-GST)

Tier	Rate	Notes
LGS system (frame + deck)	₹850–1,000/sqft	Structure only
LGS + FC600 fill	₹1,050–1,300/sqft	Structure + walls
Full TurnKey	₹1,400–2,800/sqft	Complete home; foundation extra ₹3–24 L by size

Every FarmHome includes: DesignAI consultation with 3 design options · fixed-price EPC contract · IS code structural certificate · SiteIQ live monitoring dashboard · QR component traceability · 10-year structural warranty.

EME CottagePro & Resort Solutions

India's domestic tourism grew 24% in 2024–25, and every tier-2 resort destination in South India is under-supplied with quality cottages. The bottleneck is not demand — it is construction speed. RCC takes 18 months; by the time the resort opens, two peak seasons have been lost. EME CottagePro builds your resort in 10–14 weeks.

10–14 wks	₹2.1 Cr/yr	52 dB	25 yrs
Resort build time	Revenue recovered/season	Acoustic between units	Structural warranty

The CottagePro Range

STUDIO CABIN ₹12–18 Lakhs

280–350 sqft · single room · kitchenette · private deck

The revenue workhorse — compact, self-contained, strikingly designed. At ₹2,500/night and 70% occupancy, payback in 2.1–2.8 years gross.

Ideal for: Solo · couples · budget-premium · beach · forest

COMFORT COTTAGE ₹20–32 Lakhs

450–600 sqft · 1 bedroom · living · verandah

The core unit of any resort cluster — bedroom fully separated from living, verandah overlooking the landscape. At ₹4,500/night and 65% occupancy, annual yield is 35–42%.

Ideal for: Family · couples · hill · backwater · all seasons

DELUXE VILLA ₹38–58 Lakhs

700–950 sqft · 1 bed + study/lounge · wrap verandah

The premium tier driver — guests booking at this level expect a destination experience. Private plunge pool compatible. ₹9,000/night; payback under 3 years.

Ideal for: Luxury · long stay · honeymoon · boutique resort

SUITE BUNGALOW ₹65–95 Lakhs

1,100–1,400 sqft · 2 bed · 2 bath · full kitchen · outdoor shower

The flagship that fills your other units — group travellers book the Suite first, then fill Comfort Cottages around it. ₹18,000/night at 55% occupancy: 36% yield.

Ideal for: Family groups · estates · corporate retreats · premium

Engineered for Every Resort Environment

Environment	Key Specification
Beach & coastal	HDGI G550 Z275 (1,000-hour salt spray, IS 6745); denser FC fill; IS 875 Pt 3 cyclonic wind design ≥ 150 km/h; 25-year structural warranty
Hill stations	FC600 fill keeps interiors 18–20°C without heating at 8–12°C ambient; thermal breaks; 2,500 mm+ rainfall roofs; 120 km/h hill winds
Forest & wildlife	Zero timber in primary structure — no termite entry; A1 non-combustible; flat-pack delivery by forest track, no concrete mixers on site
Backwater & river	Elevated floor on screw piles (0.6–1.2 m above flood level); zero-moisture FC; boat/barge site assembly for island resorts

Resort Units & Insulation Tiers (Resort Solutions range)

Five factory-built unit types — GlampPod (₹8.5–14 L), plus cottages, pods and luxury villas — with three wall/floor insulation tiers selected at BOQ: Standard FC700 (U-value 0.32–0.35 W/m²K), Thermal Plus mineral wool (0.22–0.25) and Premium Dual MW + FC (0.18–0.20). All tiers 60-minute fire rated, CSIR-SERC tested, delivered in 30–75 days with 25-year structural and 10-year rain-leakage warranties.

EME G+5 Hotel Construction System

A hybrid construction method for 100+ room hotels: an RC primary frame carries all gravity and lateral loads, while EME's LGS panel and foam concrete system forms external walls, internal partitions and floor build-ups. LGS panels follow 2–3 floors behind the RC frame on a rolling programme — an 18-month hotel instead of 30 months.

6	100+	STC 50+	120 min
Storeys (GF + 5)	Guest rooms	Inter-floor acoustic	FRL fire resistance

Standard Configuration

Element	Specification
Floor plate	36 m × 18 m (648 sqm/floor); double-loaded central corridor; RC columns at 6 m grid
Ground floor	Fully public — reception, restaurant, kitchen, common areas. Option A: piloti car park + mezzanine lobby; Option B: full lobby. Optional basement: 40–60 cars
Rooms	Standard 32 sqm (4.0×8.0 m) · Deluxe corner 40 sqm · Junior suite 64 sqm
External wall	250 mm total — LGS panels + FC700 infill + external FCB lining + cladding (IS 801)
Room partitions	200 mm — LGS + FC700, both faces 12 mm FCB; acoustic and fire separation
Floor build-up	60 mm FC1000 screed + 5 mm resilient acoustic mat on RC slab — STC 52+, premium hotel standard
Fire & codes	IS 3809 FRL 120-min above 4 storeys · IS 456 · IS 1893 · IS 801 · IS 2185 Pt 4 · IS 2553 hotel acoustics

EME scope: LGS panels, FC700 infill, FC1000 screed, external cladding and SitelQ monitoring. RC frame, fit-out and FF&E by third-party contractors to EME's panel grid coordination drawings — one integrated programme.

EME Worker Accommodation

Two permanent-grade G+2 LGS blocks house 200 workers, delivered factory-to-handover in 45 days. Fully demountable at project end with 80% material reuse — mineral wool insulation and clip-on cladding reverse cleanly, and every panel leaves site at the weight it arrived.

45 days	200	A1	80%
Factory to handover	Workers · 2 G+2 blocks	Fire class (MW + FCB)	Reusable at demount

The Two-Block Concept

Block	Configuration
Block A — sleeping	24 m × 12 m · 12 four-person bunk rooms per floor (6 each side of 1.2 m corridor) · all three floors identical · fully dry building · external LGS stairs both ends
Block B — sleeping + welfare	24 m × 15 m · ground floor fully welfare: canteen, ablution block (10 showers + 10 WCs + 10 basins), medical room, laundry · floors 1–2 sleeping · prayer/quiet room on floor 2

Why Two G+2 Blocks Beat One G+3

- Single 100×50×15 (1.5 mm BMT) studs throughout — IS 801 axial capacity 38–52 kN per stud, comfortable reserve without back-to-back compound studs.
- 25T crane sufficient (max panel height 9 m); 3-level scaffold only — faster, cheaper, safer.
- Wet services concentrated in Block B ground floor — clean, direct drainage; Block A fully dry.
- Operational independence — one block can be maintained while the other runs.

Specification Highlights

- **Bunk rooms:** 6.0 × 3.0 m = 18 sqm; 4.5 sqm net per person — meets BOCW Act 1996 minimum; two double bunks, four lockers, window ventilation, four power outlets
- **Wall system:** Load-bearing LGS + mineral wool + fibre cement board — A1 non-combustible, better acoustics, no wet trades on upper floors
- **Traceability:** Every stud, track, joist and cassette QR-labelled at factory; SiteIQ live erection progress, tilt sensors and automatic compliance record
- **Ablutions:** 1:20 shower ratio sized to eliminate shift-change queuing (6 AM / 6 PM peaks)

EME Compact Student Accommodation

Purpose-built student accommodation with an en-suite in every room at affordable build cost. Two G+3 load-bearing LGS blocks deliver 112 rooms (128 students) at ₹7.1 Lakhs per room — using the compact wet pod strategy proven by leading UK and Australian PBSA developers.

112	13.5 sqm	₹7.9 Cr	23%
Rooms · 2 G+3 blocks	Room gross · 11.7 net	Build cost · ₹7.1L/room	Above UGC minimum

The Compact Wet Pod

A 1.0 × 1.8 m factory-built bathroom unit slots into the corner of each 3.0 × 4.5 m room, leaving 11.7 sqm of genuine living and study space — 23% above the UGC minimum of 9.5 sqm. The pod arrives fully fitted with plumbing terminated at the base plate; one plumber connects three pipes and the room is bathroom-ready in 30 minutes. The 700 mm sliding door reclaims the floor space a hinged door would consume.

Configuration

- Blocks:** Block A (30 × 12 m, pure sleeping, 56 rooms) + Block B (30 × 15 m, sleeping + ground-floor welfare: communal kitchen, 24-seat dining)
- Structure:** 150×50×15 back-to-back LGS load-bearing at ground floor — no RC frame; 3.0 m room module increases shear panels and lateral stiffness
- Walls & floors:** MW internal partitions, FC700 external walls, FC1000 floor screed + resilient mat + carpet
- Amenities:** Roof terraces, 100 cycle spaces, 30 car spaces, 8 accessible rooms, twin-room options
- Revenue logic:** Private en-suite commands ₹1,000–2,000/month rent premium over shared-bathroom accommodation

SECTION 13 — PRODUCT LINE

EME InstitutePro — Schools, Healthcare & Community

India's primary schools and health centres are still built the way they were in 1975 — 12–18 month RCC timelines, no fire compliance, no accessibility ramp. EME InstitutePro ends this: a classroom block in 8 weeks, a PHC in 10 weeks — NBC 2016 compliant on Day 1, non-combustible, fire-rated, accessible and built to last 50 years without maintenance.

The InstitutePro Range

CLASSROOM MODULE ₹8–14 Lakhs

600–900 sqft · 1 classroom (40 students) · toilet block · veranda · accessible ramp

The replicable unit of South India's school infrastructure — DesignAI generates the IS-code structural drawing and CPWD specification for direct GeM order.

Ideal for: Government schools · NGOs · CSR programmes · GeM direct order

SCHOOL BLOCK ₹40–90 Lakhs

3,000–6,000 sqft · 6–12 classrooms · staff room · library/lab option · G+1 option

The full-campus educational building. LGS load-bearing wall system to G+1 — 6 classrooms per floor × 2 floors, IS 1641 fire compartmentation between classrooms as standard.

Ideal for: School management · education departments · PMAY AHP schools

HEALTHCARE UNIT ₹18–55 Lakhs

1,200–3,500 sqft · OPD · waiting · pharmacy · lab · ward (4–8 beds) · nurse station

The standard PHC and CHC building. FC600 walls are non-absorbent and anti-microbial — critical for infection control. Ramp access, accessible toilet and handrails standard.

Ideal for: TNUHDB · district health departments · NGOs · PMAY AHP amenities

COMMUNITY COMPLEX ₹30–75 Lakhs

2,000–5,000 sqft · main hall (150–350 seats) · stage · office rooms · toilet blocks

The panchayat bhavan, community hall and worker welfare centre. GeM catalogue listed — a community hall at ₹18–22 L is a direct order under the ₹25 L threshold, no tender required.

Ideal for: Panchayat bodies · PMAY AHP amenities · SIPCOT welfare · GeM procurement

Compliance & Safety Built In

- NBC 2016 Part 3 occupancy egress widths auto-checked by DesignAI; IS 1641 fire compartmentation between rooms.
- IS 3809 60-minute fire-rated walls (FC600); IS 2189 fire alarm and detection provision.
- Universal access per NBC 2016 Part 3 §5.2 — ramps (1:12), accessible toilets, tactile indicators, handrails.
- IS 1893 Category II (Important) seismic design with Importance Factor 1.5 for schools and hospitals.

SECTION 14 — PRODUCT LINE

EME IndustrialPro — Sheds, Factories & Warehouses

EME is the only South India manufacturer offering both Hot Rolled Steel portal frames (12–50 m clear span) and Light Gauge Steel units (up to 12 m) from one factory, one BIM model — your heavy production shed and adjacent quality lab or office pod share the same system, designer, invoice and timeline. Structural completion in 60 days — a contractual guarantee.

60 days

Structural completion SLA

50m

Max HRS clear span

20T

EOT crane from Day 1

₹0

Rework — QR traceability

The IndustrialPro Range

LIGHT INDUSTRIAL UNIT ₹8–25 Lakhs

500–2,000 sqft · LGS system · 4.5–7.5 m eave · FC600 walls · roll-up shutter

The entry-level industrial building for tool stores, component stores, QC labs, security buildings, control rooms and small assembly areas.

Ideal for: Small manufacturers · tool stores · QC labs · worker welfare · guard posts

PRODUCTION SHED ₹25–90 Lakhs

2,000–8,000 sqft · HRS portal 12–24 m span · 5–8 m eave · crane provision to 10T

The standard SIPCOT production unit — overhead crane provision from Day 1 (not a retrofit), mezzanine floor option for office and storage.

Ideal for: Auto ancillary · precision manufacturing · SIPCOT units · assembly

WAREHOUSE / LOGISTICS ₹90–300 Lakhs

8,000–30,000 sqft · HRS portal 20–40 m span · multiple docks · sprinkler provision

The large-format logistics shed — multiple truck docking bays, fire sprinkler main provision, dock levellers and picking mezzanine.

Ideal for: 3PL logistics · e-commerce · cold storage · distribution centres

HEAVY INDUSTRIAL SPAN ₹300L+

30,000–80,000 sqft · 32–50 m clear span · 10–14 m eave · 20T EOT crane

The heavy engineering shed — clear span portal frames with no internal columns interrupting production flow; CNC machine pits provisioned.

Ideal for: Heavy machinery · press shops · fabrication · automotive assembly

Beyond Industrial — Warehouse & Open-Structure Applications

Storage warehouses (agricultural, e-commerce fulfilment) · sports academies (long-span lattice roofs, indoor courts) · exhibition halls · data centres (fire-safe non-combustible framing, raised flooring) · assembly and marriage halls · temporary project-site warehouses and relief camps (bolt-together, relocatable).

SECTION 15 — PRODUCT LINE

EME Defence & Security Infrastructure

India's Armed Forces, CAPFs and Border Security require structures built to tight operational timelines, extreme climate performance standards and long-term structural integrity with minimal maintenance. EME's integrated LGS + Foam Concrete + HRS system delivers all three — typically 3–4× faster than conventional RCC, at 20–35% lower capital cost.

45 days

50-bed barrack to occupancy

60 min

Fire resistance (IS 3809)

Rw 48 dB

Acoustic between bays

50 yrs

Z275 corrosion design life

Troop Barracks — Permanent Accommodation

Configuration	Floor Area	Time	Cost (turnkey)	Key Features
20-Bed Block, G+0	300 sqm	30–35 days	₹65–80 L	5 bays × C350 portal; FC700 wall; full services
50-Bed Block, G+0	700 sqm	45–55 days	₹145–175 L	10 bays; IS 1893 Zone IV; IS 875 wind
100-Bed, G+1	1,400 sqm	65–75 days	₹280–330 L	LGS deck floor; 2 stairwells; FC1000 screed
Officers' Block, G+1	600 sqm	50–60 days	₹140–165 L	Larger rooms; A/C provision; tile finish

Thermal: FC700 wall U-value 0.40 W/m²K meets ECBC 2017 for all climate zones — effective from Leh-Ladakh (–20°C) to Thar Desert (+50°C) without modification. Fire: 60-min FRL wall, MGO board internal lining, non-combustible throughout (NBC 2016 Ch.4).

Transit Camps & Forward Operating Bases — Demountable

- Bolt-together LGS panels: no weld, no crane above 2T; 6-person team with basic tools; 10-modular-unit camp erected in 4 days by 8-person team.
- Screw pile or ground beam foundation — no concrete cure; effective –20°C to +50°C with FC600 spray fill or pre-formed CLC panels.
- 100 sqm unit dismantles into 2 × 20 ft containers; 10 modules pack to 3 standard trucks; camouflage topcoat (military spec) standard.
- Pre-wired conduit for genset / solar roof integration; 20 units manufactured and despatched in 8 weeks.

Also for Defence Estates

Armouries (FC800 humidity-controlled walls) · MT workshops with 10T crane · canteens · watchtowers (4×4 m platform, 3-day erection) · MOD structures: aircraft hangars, defence shelters, command posts, mobile barracks with ballistic cladding compatibility and secure access systems. MES, GeM, DefProc, CRPF, BSF, CISF, ITBP, Navy and Air Force procurement supported with SE-stamped calculations and MES drawings in 48 hours.

SECTION 16

Applications Beyond Buildings

Domain	Applications
Industrial & infrastructure	Modular data centres · telecom shelters · solar panel mounting structures · utility enclosures and kiosks
Transportation & mobility	Vehicle body frames for trailers and mobile medical units · railway signal boxes and station components · marine & offshore cabins (non-combustible, corrosion-resistant)
Manufacturing & logistics	Factory fit-outs, internal partitions and mezzanines · high-strength racking systems · clean rooms for pharma and semiconductor
Scientific & specialised	Mobile laboratory pods · rapid-deploy emergency response units and disaster-relief clinics · exhibition pavilions, stages and booths
Sustainability & circular	Reusable transport packaging frames · vertical farm and hydroponic modules · demountable, relocatable infrastructure
Urban & lifestyle	Solar panel frames · bus shelters · garages · cafés and kiosks · floating structures · advertisement displays & hoardings · tiny homes

Services — DesignAI, SiteIQ & Turnkey EPC

DesignAI — Your 48-Hour Architect

Upload your plot PDF or GPS coordinates and your brief. DesignAI returns three IS-code-compliant design options — floor plans, structural calculations, IS code compliance certificates, foundation specification and CNC cut files — in 48 hours, cutting design time from 2–6 weeks. Cost estimate ±5% from live material data; every output SE-reviewed and stamped.

SiteIQ — Live Construction Intelligence

Every steel component carries a QR code from the CNC line to its structural position. SiteIQ combines IoT sensors, computer vision and timestamped SHA-256-hashed milestone certificates — accepted by TNUHDB, banks and RERA portals — giving clients a live dashboard, daily WhatsApp updates and a legally non-repudiable audit trail. PMAY milestone certificates generate automatically in 48 hours versus 3–4 weeks manual.

Full Service Scope

Stage	What EME Delivers
Design & engineering	Architectural & structural design; BIM/CAD modelling for LGS framing; custom module development; fire, seismic and wind load compliance analysis per local codes
Manufacturing	Cold-formed G550 production; precision roll-forming of studs, tracks, joists, trusses; hot-rolled structural fabrication for high-load and hybrid applications
Site services	On-site assembly of frames, panels and modules; hybrid concreting; offsite & onsite MEP coordination; retrofit and extension support
Quality & compliance	ISO 9001 certified processes; third-party fire, acoustic, thermal and structural validation; documentation packages for government approvals and tenders
Specialised solutions	Modular plantrooms; volumetric modules (bathroom pods, hotel rooms, classrooms); temporary & emergency structures for relief, defence and CSR; bespoke architectural builds
Turnkey EPC	Single point of responsibility — structural design, factory fabrication, site delivery, erection, FC pour and IS certification under one fixed-price contract

Every EME project includes

Fixed-price EPC contract (price agreed Day 1, no escalation) · structural engineer stamp + IS code compliance certificate (IS 800, IS 811, IS 875, IS 1893) · SiteIQ live dashboard · QR traceability manifest · 10-year structural warranty · digital handover pack.

SECTION 18

Manufacturing Base & Contact

The Factory — SIPCOT Pochampalli

Zone	Detail
Main factory floor	1,200 sqm PEB — CNC lines 1+2, coil store, QC aisle, 5T EOT crane
FC mixing & curing bay	400 sqm — mixer, foam generator, pump, 800-mould curing racks
Finished goods warehouse	600 sqm — project-batched racking, forklift access, 2 truck bays
Office + technical centre	200 sqm — engineering workstations, DesignAI servers, meeting room
Utilities & green zone	250 kVA TANGEDCO HT + 100 kVA DG + 50 kW rooftop solar; 33% green cover with rainwater harvesting

Why Clients Choose EME

- Only LGS factory in the Krishnagiri/Hosur belt — same-day delivery to South India's most active construction zone.
- IS 811 & IS 801 verified at CNC production stage — compliance built into manufacturing.
- Foam concrete: one pour, three jobs — thermal, acoustic and fire performance in a single IS 2185 infill.
- Complete EPC — factory supply, site erection and IS certification under one contract.
- AI-powered design — DesignAI cuts design time from weeks to 48 hours; CNC accuracy eliminates on-site cutting waste.

Green Credentials

- Zero liquid discharge — all process water incorporated into the FC product.
- 60–70% less embodied carbon than equivalent RCC structures.
- Nil air emissions — cold roll-forming, no kiln, no furnace, no stack.
- 100% recyclable steel; BIM-to-CNC eliminates site cutting waste.

START YOUR PROJECT

Ecometal Matrix Engineering Pvt Ltd

SIPCOT Pochampalli (Bargur), Krishnagiri District, Tamil Nadu — 635 104
Gangaivendan Padmanabhan — Managing Director · Mohandoss Vellaichamy — Director (Technical)
[Phone] · [Email] · [Website]

Upload your plot. Tell us your brief. Get 3 design options in 48 hours — free consultation.