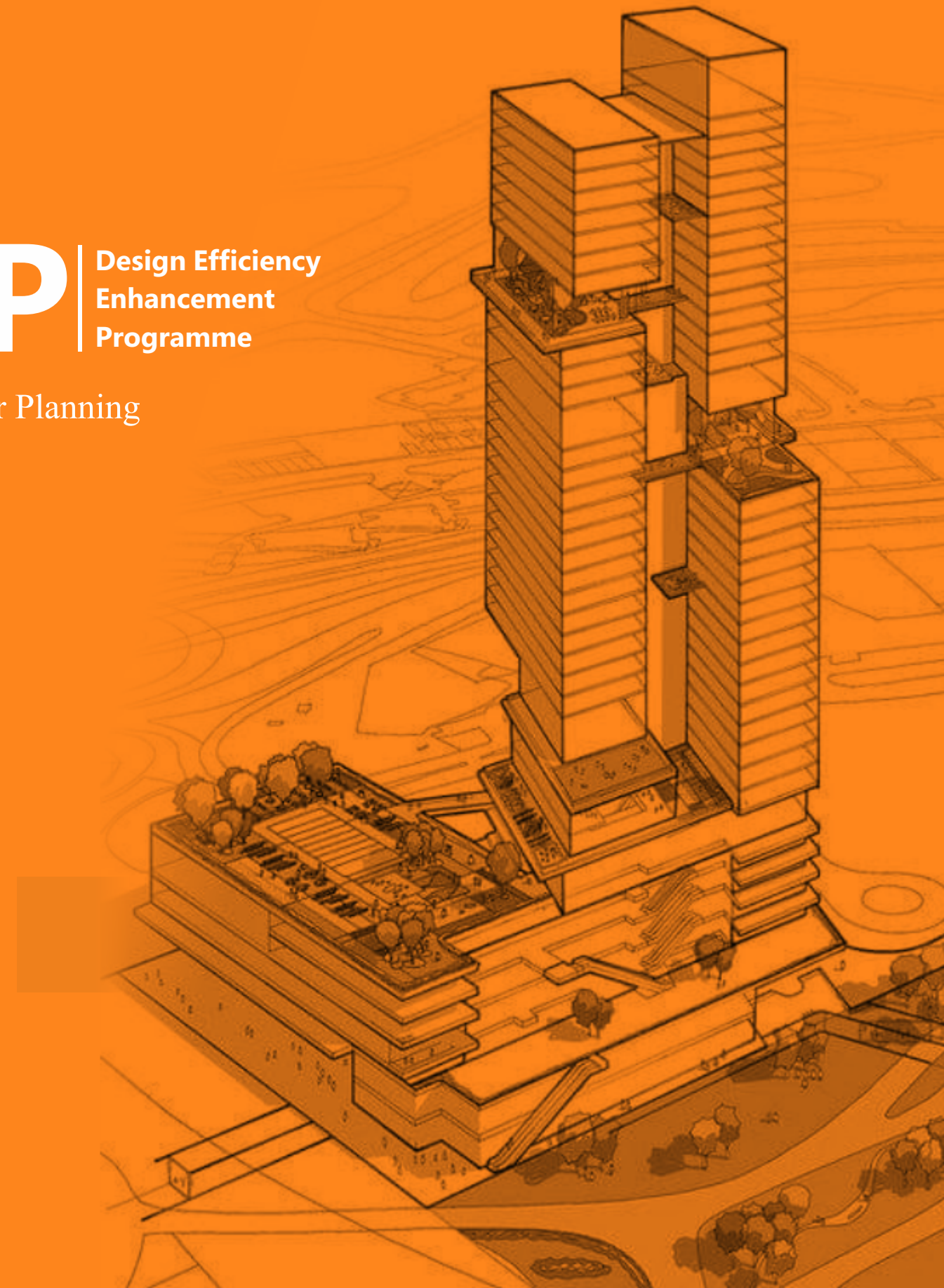


ingrain

DEEP

Design Efficiency
Enhancement
Programme

Architecture | Master Planning



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Programme

Architecture | Master Planning

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Edmonton | Singapore | Dubai | Jakarta | Mumbai | Pune | Ahemdabad | Bangalore

Ingrain DEEP is a performance-driven design optimisation programme that helps developers unlock maximum value from every square foot - without compromising quality, compliance, or speed. In today's competitive real estate environment, success is no longer driven by land alone. It is driven by how intelligently you design, plan, and execute.

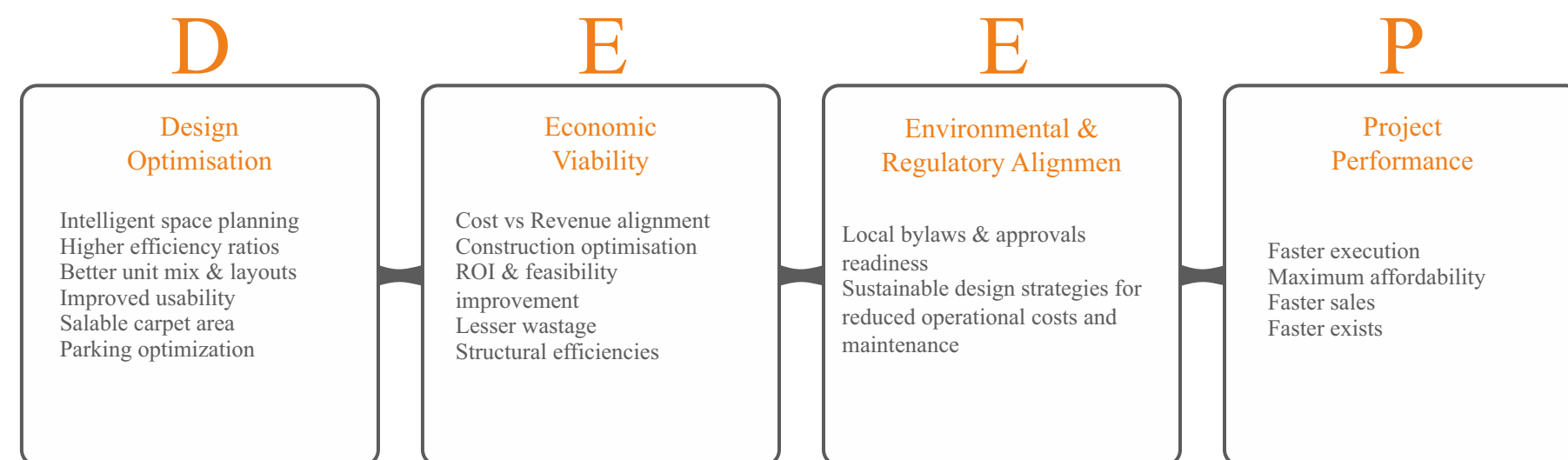
Most real estate projects lose significant value due to inefficient layouts, poor utilisation of FSI, excessive construction costs, unoptimised circulation and services, and delays caused by design revisions or market misalignment. These invisible inefficiencies silently erode profitability long before construction begins. Ingrain addresses this at the source by optimising design efficiency, aligning planning with market demand, and integrating architecture, structure, and services intelligently - ensuring maximum saleable value, controlled costs, faster execution, and stronger overall project returns. In addition utilizing the regulations in the most optimum ways, further add to the profitability.

“Efficiency is new elegance”

“Thinking about efficiency is hard but not thinking about it can be disaster”

DEEP is a **Structured Design Enhancement Framework** that optimises your project at the concept and schematic stage.

We focus on 4 Core Pillars



₹ROI

₹ROI

“ The little things ARE the big things ! ”

ROI is not only a financial outcome; It is a **realistic architectural outcome**. Through intelligent planning, efficiency, ratio optimization, and design excellence, smart architecture directly enhances salable area, efficiency, and long-term project profitability of the project.

Maximize Profits Minimize Costs

Efficiency drives profitability—optimizing construction ratios plays a crucial role in accelerating sales, maximizing saleable area, and enabling better planning. At the same time, efficient design helps reduce construction costs, making the development more profitable and market-responsive.



“Pure Essentials Are Always Efficient !”



ingrain
DEEP

The Right Programme

Having the right program—derived from a thorough micro-market study—along with clear positioning, a well-defined audience profile, and the right product mix (in terms of configuration, specifications, and amenities), aligned with the local context and location dynamics, leads to stronger market acceptance and significantly enhances sales performance

Contextual Design

By aligning ecology, terrain, surroundings, culture, and microclimate, architecture becomes responsive, sustainable, and deeply rooted in place - enhancing both environmental performance and human experience.



Product Configuration

Product configuration is designed to offer flexibility and precision to meet diverse user needs. Each component is carefully selected and aligned to ensure seamless functionality and performance. The result is a tailored solution that balances efficiency, adaptability, and reliability.



3E

Our architectural approach focuses on smart planning to ensure maximum efficiency and smooth functionality. It creates a sense of exclusivity through unique design elements and carefully chosen materials. At the same time, it respects the environment by using sustainable practices and responding naturally to the site and climate.



LUXE

A highly experiential design that engages the senses and creates memorable spatial journeys. Ultra-luxurious detailing and premium materials elevate every corner with elegance and sophistication. Each space is thoughtfully curated to deliver a refined, bespoke environment tailored to perfection.

In Real estate Efficient Design Is Equally Important As That Of Design Experience

Factors Affecting The Efficiency



Architecture Design



Structure Optimization



Operation



Construction Technology

- Ratios**
- Parking Efficiency
 - Core to Floor
 - Carpet to Construction Floor
 - Total Carpet to Total -construction
 - MEP Space Planning
 - Wall Ratios
 - Common Wall Ratio
 - Periphery Ratio
 - Service Area/Total Construction Area
 - Shafts/Chowks
 - Plot Shape and Size

- Layout Eco-sustainability**
- Wind, Ventilation
 - Sun-natural Light
 - Rain
 - Contour
 - View
 - Road Frontage
 - Plot Size
 - Plot Shape

- Parking**
- Parking Loop
 - Ramp In Contour/Location
 - No Driveway Under Building
 - Double loaded Driveway Only
 - Size / Parking Numbers
 - Periphery Parking
 - Type of Parking
 - Only Podium - No Basement

- No Floating Column
- Grid
- Core Location
- Zero Basement
- No Building On Retail Below
- Steel Construction
- Configuration of apartments per Floor
- Staircase Per Floor
- Height of building

- Cross Ventilation & Natural light
- Amenity Location
- Landscape
- Facades
- No Cladding
- Basement
- No. Of Lifts
- Orientations

- BIM
- Modularity
- Standardization
- Modularity
- Building Layering
- Construction Technology
- Repetitions

Dependencies

Parking Efficiency is dependent on variables like:
 Parking Efficiency/ Area Per Car | Type of Car Parks | Total Car Parks | Total Stilt Area | Total Parking Area

Project Efficiency is dependent on variables like:
 Land Area | Building Height | Total Units | Configuration of Apartments per Floor | Apartments per Floor | Staircase per Floor | Fire Tower

Ratios

“ The ability to simplify means achieving architectural efficiency through ratios ”

Parking Ratio

Efficient ramp placement, circulation loops, and structural grid alignment maximize parking count within minimum footprint.

Carpet to Construction Ratio

Intelligent wall thickness control and core optimization along with efficient parking increase net usable carpet area and reduction in construction cost

Core to Floor Ratio

Strategic core positioning as well as design minimizes core construction areas and avoid FSI loss along with improving carpet efficiency per floor.

Common Wall Ratio

Higher common wall planning reduces heat gain and construction material usage. It improves energy efficiency along with construction cost reduction

MEP Space Planning Efficiency

Integrated MEP space planning design increases core efficiency and parking, reduces service clashes, and improves long-term maintenance efficiency.

Periphery Ratio

Minimum surface area reduces capital cost in construction

Plot Shape & Size Optimization

Design that responds to plot geometry minimizes unusable corners. Better land utilization increases FSI efficiency and project profitability.

Grid Efficiency

Grid efficiency ensures optimal column spacing and structural alignment with room and flooring material sizes,

Wall Ratio

Optimized structural grid by having thicker columns inside and thinner columns on periphery with shared walls reduce FSI loss

Service Area to Total Construction

Improves efficiency, reduces wasted space, and maximizes saleable and usable built area. Service area behind the toilet, although increases area they provide utility area without using FSI

Shafts / Chowks Optimization

Avoiding shafts and chowks in any floor reduces construction cost, as well as increase core experiential quality

Standardization

Standardization allows efficiency in purchase reducing in cost and at the same time facilitates faster construction

Modularization

Modular designs drastically help reducing the construction costs

Structure and Rera

leaner columns along the periphery and larger structural columns concentrated in the core optimizes floor plate efficiency.

Parking

Parking Loop

A well-designed loop ensures smooth circulation with zero dead ends, maximizing usable parking bays.

No Driveway Under Building

Eliminating internal drive-throughs increases structural efficiency and improves safety.

Zero Basement Only

As far as possible, basements should be avoided due to the high costs associated with shoring, piling, retaining walls, waterproofing, and artificial ventilation and lighting. In contrast, podium parking is far more efficient, as the expenses for artificial lighting and ventilation are minimal.

Type of Car Park

Selecting the right model (stilt, basement, podium, MLCP) enhances land utilization and project viability.

Total Stilt Area

Efficient column grid and layout maximize parking within minimum stilt footprint.

Ramp in Contour / Location

Strategically placed ramps reduce excavation cost and minimize circulation area loss.

Double loaded Driveway Only

Optimized two-way planning reduces redundant lanes while maintaining smooth vehicle movement.

Periphery Cars

Smart edge parking utilization preserves central circulation and increases parking density.

Total Car Park

Optimized layout increases total parking count without inflating construction cost.

Total Parking Area

Compact circulation planning improves parking-to-built-up efficiency ratio, boosting saleable area above.



“ Simplicity is the ultimate expression of sophisticated efficiency ”



Structural Optimization

Achieving Architectural Efficiency Through Structural Design



No Columns Over Retail

Avoiding structural transfers allows shops to be sold and handed over early, unlocking cash flow, which can support ongoing construction, reducing financial pressure and speeding up project delivery.



Right Construction Technology

Selecting the optimal structural system improves construction speed and material efficiency.



Strategic Core Location

Optimizing the core, the overall building structure becomes more balanced and efficient. This improves load distribution and significantly reduces steel consumption.



Basement Rationalisation

Minimising or eliminating basements reduces excavation, foundation, and waterproofing expenses. This significantly improves project feasibility and return on investment.



Efficient Floor Configuration

As building height and width change, the ideal apartment-to-core ratio also shifts. Planning the right number of units per floor ensures structural efficiency, and maximum salable area.



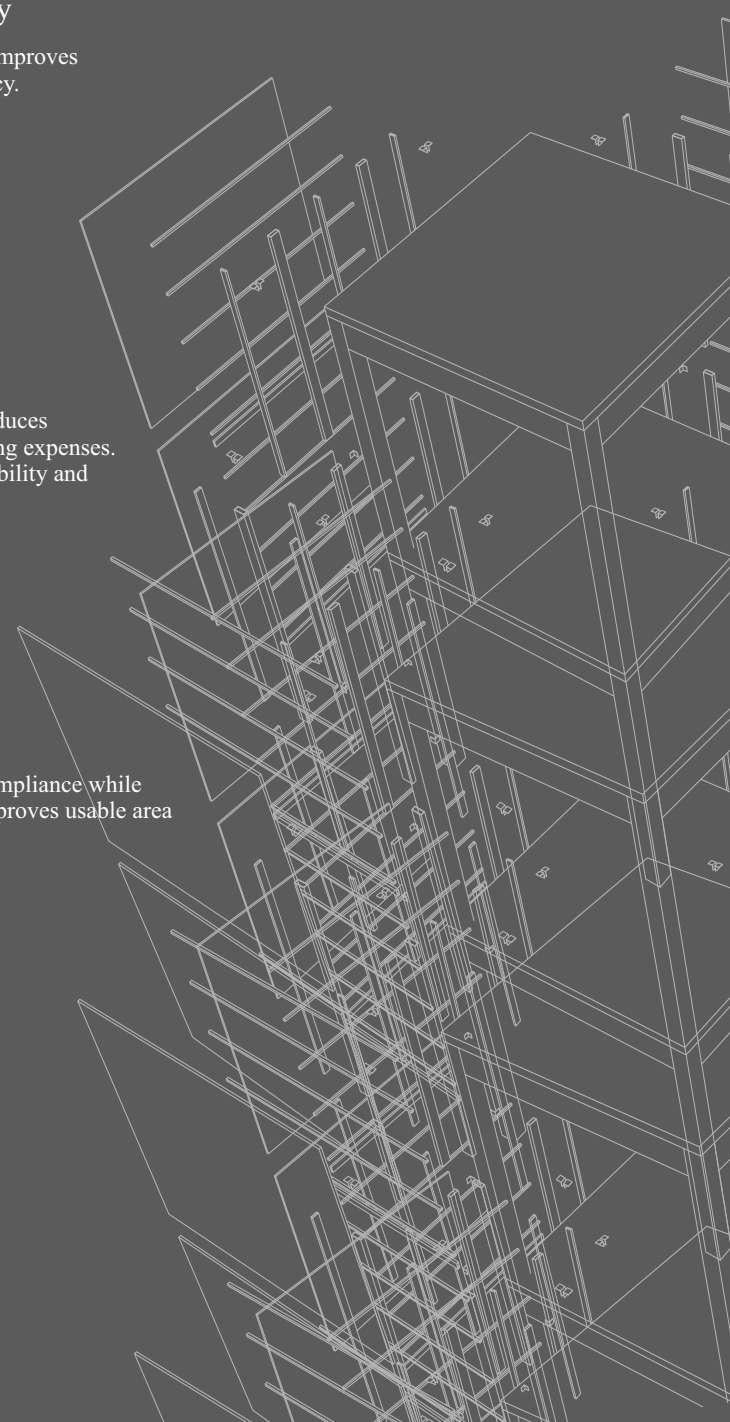
Optimised Staircase Planning

Efficient staircase placement ensures compliance while minimising space consumption. This improves usable area and overall planning efficiency.



Optimised Structural Grid

A rational column grid balances span and material efficiency, minimising excess RCC and steel usage. This improves carpet efficiency and reduces overall structural cost.



Operational Optimization

Achieving Efficiency Through Operational Design



Cross Ventilation and Natural Light

Designing for natural cross ventilation and light improves indoor comfort and reduces long-term energy costs and enhances livability and market value.



Amenity Location Optimisation

Well-planned amenities significantly increase project salability and improve accessibility. By strategically utilizing every inch—such as terraces, podiums, and intermediate levels—even smaller plots can accommodate generous amenity spaces and pen areas



Plantations and Landscape Planning

Low maintenance and well-planned landscapes increase and enhance overall project appeal, while the location of landscape add the functional and experiential value

Landscape planning aligned with the structural grid allows plantations to be integrated without increasing steel consumption.



Sides and Facade Efficiency

A no-cladding approach treats the structure itself as the finished façade lowering the maintenance costs



Optimised Number of Basements

To reduce energy consumption from artificial lighting and mechanical ventilation, developments should minimize or avoid basements wherever possible.



Material Selection

Minimum Cladding Selecting durable, low-maintenance materials reduces lifecycle repair and replacement costs. This ensures sustained performance and lower operational burden.



Sustainability

From Green buildings, solar integration to AC-DC hybrid grids, we promote energy-efficient designs to make them more sustainable

Why Ingrain



Team ingrain has delivered more than **280 K plus units across projects** / regions and markets.



Strong command on **High Density , High Rise Design** and development



Complete understanding of design dynamics and a successful **track record** of end to end delivery of **numerous projects**



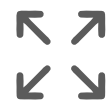
Expert teams with Knowledge of **local regulation**, gained through delivered projects.



Knowledge of Multiple **High Speed Construction Techniques**.



Integrated Planning of **Physical Infra Social Infra**.



Approach to **maximize Efficiency and Elegance**



With **in house capability in BIM**, we undertake comprehensive architectural design along with **complete coordination with consultant** without any **hindrance smoothly**.



Architectural design **strongly on the basis of saleability of the product and market understanding**

Achieve faster exits, stronger legacies, with higher profitability

Our frugal approach embeds cost-efficiency and resource intelligence into the project from the very first stage of planning. It focuses on making smart, well-informed decisions on layouts, structural systems, services integration, materials, and construction methods so that unnecessary expenditure, overdesign, and wastage are eliminated early. By getting it right the first time, Ingrain enables tighter cost control, minimizes rework, reduces operational expenses, and enhances long-term profitability. - without compromising quality, performance, or market appeal.

Gross Development Potential



Ingrain helps you maximise your project's Gross Development Potential (GDP) by increasing the saleable area from the same built-up footprint.

This means you can generate higher revenue without increasing your construction cost. When more saleable area is created from the same investment, your cost per saleable sq.ft. reduces, your revenue efficiency improves, and your overall profit increases.

Moreover the Morphology of the building decides , how we can optimize the core and th e structure, which in turn can reduce the cost drastically.



At Ingrain, our design philosophy is guided by the principle of Triple E –

Efficiency, Exclusivity, and Environment.

This integrated approach ensures that every project delivers maximum value, strong market appeal, and long-term sustainability.

Efficiency for Performance

- Efficiency is embedded into our design process through disciplined planning and rational design frameworks.

We achieve efficiency by:

- Optimising design ratios and space utilisation
- Improving carpet-to-built-up efficiency
- Rationalising structural and service layouts
- Reducing construction and lifecycle costs
- Minimising wastage and rework

Our focus is to ensure that every square foot contributes meaningfully to profitability, usability, and operational effectiveness.



Exclusivity Experience

- Exclusivity is created through thoughtful design that elevates everyday living into a premium experience—independent of mere ratios.

We create exclusivity through:

- Panoramic views and visual connectivity
- Hospitality-inspired lobbies and common areas
- Grand entrances and drop-off zones
- Well-curated amenities and social spaces
- Carefully crafted transitions and spatial sequences

Our designs deliver a strong sense of **imageability, identity, pride, and aspiration** enhancing both brand value and market positioning.

Environment for Sustainability

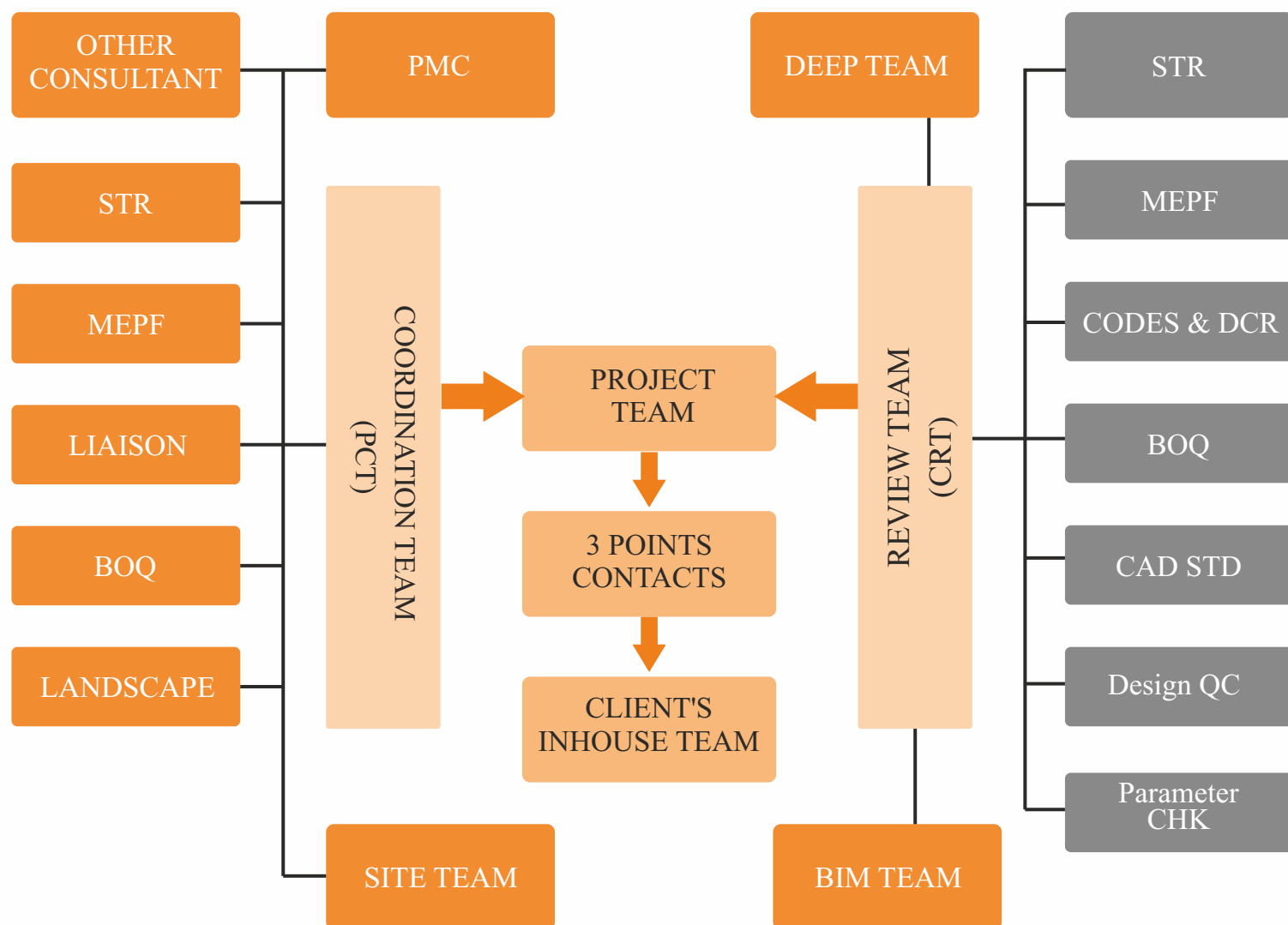
At Ingrain, sustainability is practical, contextual, and performance-oriented.

We achieve environmental responsibility through:

- Climate-responsive building orientation
- Natural light optimisation
- Cross-ventilation strategies
- Energy-efficient layouts
- Maintainable green building systems
- Robust landscape and microclimate planning

Design QC & Coordination Process Flow

Ingrain's robust team structure and coordinated design process ensure seamless collaboration across all disciplines, enabling efficient decision-making and high-quality outcomes.



DEEP - Design Efficiency Enhancement Program
LUXE - Design services for luxury residential

Work So Far



6
Creative minds



1,50,000+
Acres of land area under design or delivered



25+
Years experience



1,35,00,000+ sq. ft.
Institutional floor area under design, or delivered



30+
Principals and Directors from all over the world



7,80,00,000+ sq. ft.
Commercial land under design, or delivered



50+
Indian & international towns & cities



25,00,00,000+ sq. ft.
Residential built-up area under design, or delivered



300+
successfully served and satisfied clients



1500+
Projects of all typologies and scales



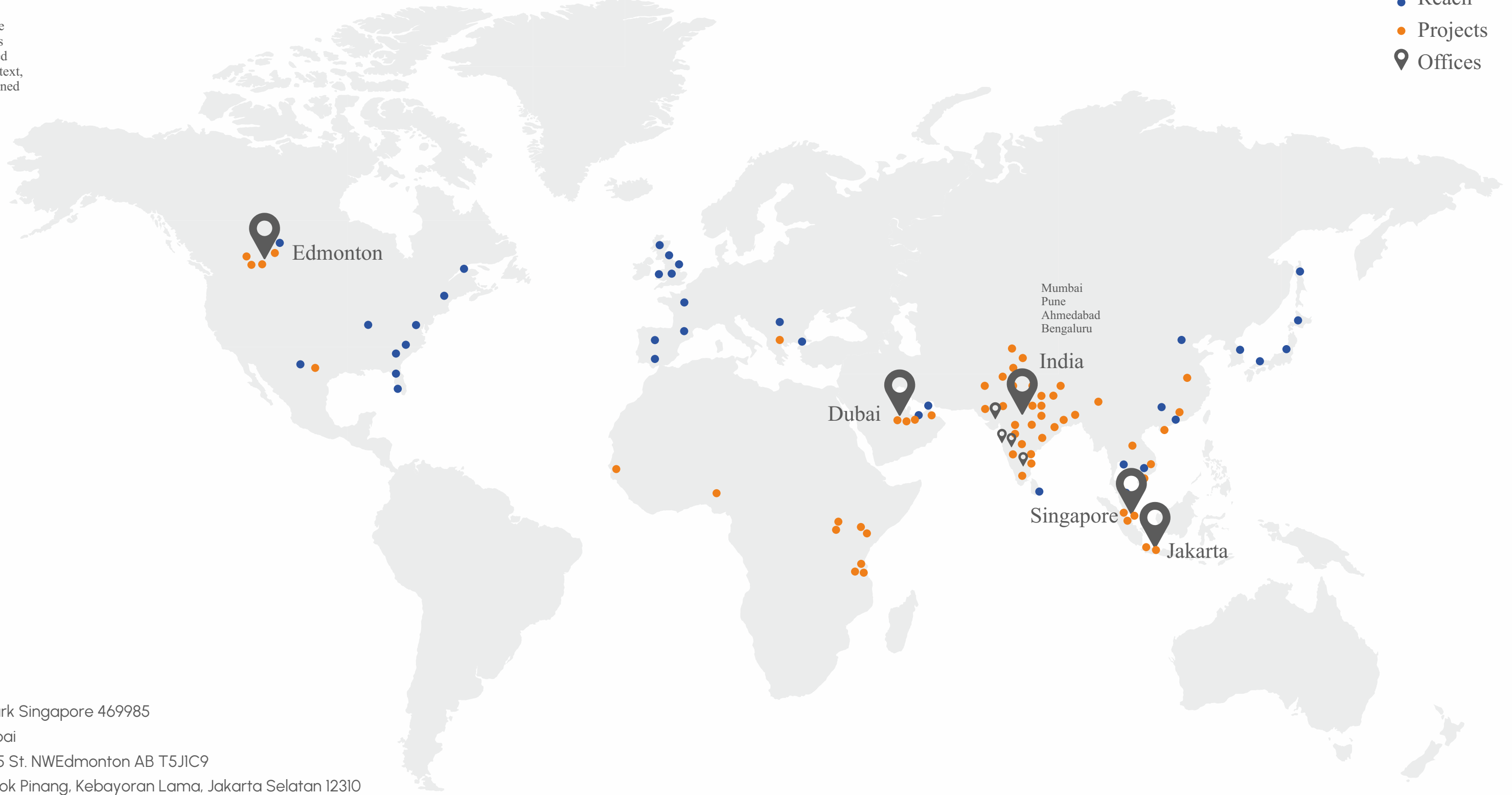
51,50,00,000+ sq. ft.
Total projects floor area under design, or delivered

A Multi-disciplinary Global Design Practice

Ingrain brings together a unique blend of international expertise and globally benchmarked design standards. With professionals from diverse cultural backgrounds, the practice integrates varied perspectives while maintaining a strong sensitivity to local context, regulations, and planning frameworks. This is further strengthened by a multidisciplinary approach and adherence to international design standards, enriched through extensive collaboration and experience with global consultants. This balance of global exposure and regional understanding enables solutions that are world-class in quality while remaining locally relevant in execution, ensuring designs that are informed, compliant, and contextually grounded across geographies.

Our Global Footprint

- Reach
- Projects
- 📍 Offices



4+ global offices

16+ countries served

- | | |
|----------|-----------|
| Vietnam | Singapore |
| Dubai | Kenya |
| RAK | Nigeria |
| Senegal | Jakarta |
| Uganda | Edmonton |
| Zanzibar | Texas |

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