

BUILT ENVIRONMENT

How Precast Africa is industrialising Africa's housing supply.



CAST WHOLE.

FACTORY-BUILT VOLUMETRIC MODULES, INSTALLED IN WEEKS.



01 | FROM THE EDITORS

WE PUBLISH WHAT WE CAN SHOW.

South Africa's housing problem is no longer a shortage of need. It is a shortage of delivery — and delivery is a manufacturing question as much as a construction one.

Built Environment is where Precast Africa will work through that question in public: how volumetric precast is designed, made, moved and installed; what it asks of developers, engineers and municipalities; and where the evidence stands.

That last point is the rule of this magazine. Precast Africa is a new manufacturer with its first plant in development. Where we describe our own system, we say what is planned and what is proven. Where we cite results from Singapore or Hong Kong, we label them as benchmarks — not as ours. Every render is an artist's impression until the first modules leave the yard.

This issue starts at the beginning: the mould, the module, the gap it is meant to close, and the projects abroad that show what the method can do at scale.

**"Every render is an artist's impression
until the first modules leave the yard."**

THE EDITORS · BUILT ENVIRONMENT

FEATURE | FROM MOULD TO MODULE

Most South African homes are still built brick by brick, on site, in the weather, by crews who start again on every plot. The quality of the hundredth house depends on the day it was built.

Volumetric precast moves the repeatable part of a building into a factory. Each room is cast as one reinforced-concrete volume — four walls and a roof in a single pour — fitted with first-fix plumbing and electrical services, checked against its own record, and craned onto foundations that were prepared while it was being made.

Site and factory work in parallel. That is where the programme gain comes from: the structure leaves the critical path.

THE STRUCTURE LEAVES THE CRITICAL PATH.

SIDEBAR | PEOPLE

Building a stronger tomorrow

PRECISION. PEOPLE. PROGRESS.

A precast plant is a workplace as much as a production line — steel fixers, mould operators, riggers and quality technicians trained to one standard. Precast Africa plans to recruit and train locally wherever it builds.

01 STEEL FIXERS

02 MOULD OPERATORS

03 RIGGERS

04 QUALITY TECHNICIANS

A SHORTAGE OF DELIVERY, NOT OF NEED.

The need is counted in millions of households. Delivery is counted in tens of thousands of homes a year — and it is falling short of its own targets while budgets shrink. Closing that gap is a production problem.

2.1-2.4M

HOUSING BACKLOG, UNITS (CENSUS-BASED)

61%

OF 2025/26 SUBSIDY TARGET DELIVERED

2.3%

CONSTRUCTION SHARE OF GDP, 2025

3.4M

HOUSEHOLDS ON THE NEEDS REGISTER

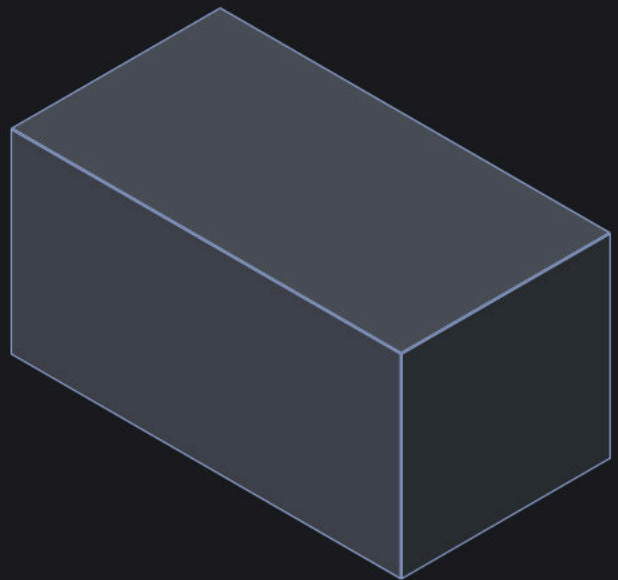
04

04 | ONE MODULE, MANY HOMES

ONE ROOM, CAST WHOLE.

The Precast Africa system starts from a single core module: four walls and a roof, cast as one reinforced-concrete volume in a hydraulic steel mould. Openings, conduits and sleeves are set by shutters and cast-ins before the pour.

Change the openings and the services, and the same cast room becomes a bedroom, a living space, a wet core or an entrance. Join modules side by side and stack them, and they become a home.



LENGTH

6 050 MM

WIDTH

3 250 MM

HEIGHT

3 035 MM

FORM

Four walls + roof, cast whole

OPENINGS

Set in the mould

Core-module dimensions per Precast Africa Brand Identity v3 and supplier study. Configurations on the following pages are illustrative and confirmed at design freeze.

THE MODULE SET · 03-04

WET CORES AND FRONT DOORS.

Services fitted under factory conditions, and the module that meets the street. The same cast volume, with its openings arranged for the room it will become.

RENDERS ARE ARTIST'S IMPRESSIONS



03

WET-CORE MODULE

Services fitted in the factory.

Bathroom and kitchen zones with first-fix plumbing and electrical installed and tested under factory conditions. Tiling, fittings and finishes follow on site.

FIRST FIX · PLUMBING + ELECTRICAL

04

ENTRANCE MODULE

Where the home meets the street.

A front-door opening with a side light, and a window on the short end. Placed at the front of a terrace or the end of a block.



OPENINGS · DOOR + SIDE LIGHT + WINDOW

ASSEMBLED · 01

THREE MODULES, ONE HOME.



52-55 M²

INDICATIVE FLOOR AREA · SINGLE-STOREY, TWO BEDROOMS

Bedroom, living and bedroom modules side by side: a single-storey two-bedroom home of about 52-55 m², as set out in the 2026 residential models.

ARTIST'S IMPRESSION · AREAS INDICATIVE, CONFIRMED AT DESIGN FREEZE



05 | INSIDE THE FACTORY | THE PLANT IN DEVELOPMENT

ONE MOULD. ONE DAY. ONE MODULE.

The production rule is simple: one module per mould per productive day. Everything else in the plant — the batching, the rebar shop, the gantry crane, the curing yard — is arranged to protect that cycle.

PRECAST AFRICA'S FIRST PLANT IS IN DEVELOPMENT · ALL
FACTORY SCENES ARE ARTIST'S IMPRESSIONS



Artist's impression

THE DAILY CYCLE

SIX STEPS, FOUR HOLD POINTS.

A module is released on evidence, never on the clock. The planned cycle:

01

PREPARE

Mould cleaned, release agent applied, shutters set for the scheduled openings.

Hold · Mould checklist

02

REINFORCE

Pre-assembled cage placed; conduits, sleeves and lifting anchors set against the frozen drawing.

Hold · Pre-pour inspection

03

CLOSE

Outer panels closed hydraulically and locked; the inner core expanded.

04

POUR

One monolithic pour from on-site batching, compacted by pneumatic vibrators.

05

CURE AND DEMOULD

Released only when demould strength is evidenced; the core retracts and the panels open.

Hold · Strength release

06

LIFT AND RELEASE

Lifted by its frame, inspected, fitted with first fix and given its module passport.

Hold · Factory acceptance

THE MODULE PASSPORT

EVERY MODULE, ON THE RECORD.

Each released module will carry a serialised passport — the evidence behind its acceptance, and the record that follows it to the plot.

IDENTITY	Serial, type, mould, cast date
MATERIALS	Batch tickets, cement source, mill certificates
TESTS	Cube strengths, cover, dimensions, first-fix tests
NON-CONFORMANCES	Any issue raised, and how it was closed
INSTALLATION	Plot, stack position, connection record
CARBON	Concrete volume, steel mass, estimated embodied carbon

**A competitor can buy
a mould. It cannot buy
the record.**



06 | GLOBAL PPVC IN PRACTICE · BENCHMARKS, NOT PRECAST AFRICA RESULTS

WHAT THE METHOD HAS DONE ELSEWHERE.

Prefabricated prefinished volumetric construction — PPVC in Singapore, MiC in Hong Kong — has moved from pilot to policy. The reported outcomes:

SINGAPORE · BCA PPVC PROGRAMME

Up to 40% manpower and time savings; 1–2 months saved on average.

THE CLEMENT CANOPY, SINGAPORE

505 units, 40 storeys, about 1,900 concrete modules (2019).

AVENUE SOUTH RESIDENCE, SINGAPORE

3,034 PPVC modules across two 56-storey towers.

HUNG SHUI KIU PH 1A, HONG KONG

Superstructure from 28 to 24 months; about two-thirds of site manpower saved.

HONG KONG CONCRETE MiC PILOT

Construction-to-occupation 30% shorter; 40% less debris.

MCKINSEY, 2019

20–50% schedule compression possible; poor execution can add 10% cost.

Cost evidence is mixed — premiums in some markets, savings in others. Precast Africa does not claim a cost saving.

Sources: Building and Construction Authority Singapore; Hong Kong Construction Industry Council and Housing Authority; McKinsey Global Institute (2019) — as cited in Precast Africa's 2026 business plan, Vol. 2 (T-series). Third-party results, not Precast Africa performance.

07 | WHAT IT BECOMES

THE MODULE DISAPPEARS. THE HOME REMAINS.

Three-storey walk-ups on one structural grid, with balconies to every home and courtyards between the blocks. The method is invisible to the people who live there — which is the point.





ARTIST'S IMPRESSION

WHAT IT BECOMES · ARTIST'S IMPRESSIONS

Solid, quiet rooms

Concrete walls between every room. Finishes are the developer's choice; the structure is cast once and built to last.

The places between

Parks, play and shade between the blocks — the part of a neighbourhood a factory cannot make, and the reason to make the rest faster.



ARTIST'S IMPRESSION

PRECAST AFRICA · ONE SYSTEM, BUILT FOR SCALE

REPEATABLE. CERTIFIABLE. BANKABLE.

01

SPEED

The site-to-factory shift takes the structure off the critical path — modules are made while the site is prepared.

02

QUALITY

Steel moulds and one inspection regime, with a production record for every module.

03

SUSTAINABILITY

Less waste on site, durable concrete and locally sourced materials — measured before it is claimed.

04

SCALE

One module family, repeated. Standardisation as a design discipline, not a limitation.

05

CERTAINTY

Layouts fixed at design freeze and priced per module — the building that arrives is the building that was priced.

BUILT FASTER. BUILT BETTER. BUILT TO LAST.

FIELD NOTES

A SHORT GLOSSARY.

Terms used in this issue, and what we mean by them.

PPVC

Prefabricated prefinished volumetric construction: whole rooms built off site as three-dimensional modules, then installed on a prepared structure or foundation. The term used in Singapore.

MIC

Modular Integrated Construction: Hong Kong's term for the same family of methods, in steel or concrete.

FIRST FIX

The services installed before finishes — conduits, pipework and boxes set in or on the structure and tested before walls are closed. Precast Africa's default scope is the module plus first fix, delivered and installed.

HOLD POINT

A mandatory inspection at which work stops until the result is recorded and the step is released.

DESIGN FREEZE

The gate after which layouts, openings and services are fixed for manufacture. Changes after it carry cost and programme consequences.

MODULE PASSPORT

The serialised record that follows each module from the mould to the plot: materials, tests, non-conformances and installation.

SOURCES AND NOTES

WHAT WE CITE, AND HOW.

Every figure in this issue is sourced. Third-party results are benchmarks, not Precast Africa performance.

AFRICA'S HOUSING GAP

Department of Human Settlements Budget Vote and Housing Needs Register; Stats SA national accounts; Fetakgomo-Tubatse Integrated Development Plan — as cited in Precast Africa's 2026 business plan (refs E13, E14, E19, E24). Need figures describe demand in principle, not orders.

GLOBAL PPVC IN PRACTICE

Building and Construction Authority Singapore; Hong Kong Construction Industry Council and Housing Authority; McKinsey Global Institute (2019) — as cited in Precast Africa's 2026 business plan, Vol. 2 (T-series).

ONE MODULE, MANY HOMES

Core-module dimensions per Precast Africa Brand Identity v3 and supplier study. Configurations and floor areas are indicative and confirmed at design freeze.

IMAGERY

All renders in this issue are artist's impressions, generated for this issue. No image shows a completed Precast Africa project.

STATUS

Precast Africa is a new manufacturer with its first plant in development. Process descriptions are planning intent, not engineering sign-off.

Contributions and subscription requests: info@precastafrica.com

BRING US A SITE.

Tell us what you are building, where, and by when — we will show you how it goes together. Contributions and subscription requests are welcome at the same address.

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IMAGERY Artist's impressions, generated for this issue

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BUILT FASTER. BUILT BETTER. BUILT TO LAST.

Precast Africa designs, manufactures, transports, and installs durable precast volumetric modules for developers seeking faster, cleaner, and more predictable construction delivery across Africa's growing cities. Renders are artist's impressions. Module configurations and areas are indicative and confirmed at design freeze. Process descriptions are planning intent, not engineering sign-off.



PRECAST AFRICA
VOLUMETRIC BUILDING SYSTEMS



ISSUE 01 • OCTOBER 2026 • AFRICA EDITION

IN THIS ISSUE.

The first edition of Built Environment – Precast Africa's journal on how Africa builds, and how it could build faster, better and to last.

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02 | FEATURE

FROM MOULD TO MODULE.

How offsite construction can change the way Africa builds homes — one module at a time.



HOW A BUILDING GOES TOGETHER

FIVE STAGES. FIVE GATES.

Every Precast Africa project runs through the same five stages. Each closes at an approval gate; nothing advances on assumption.

01**CONSULTATION AND TECHNICAL BRIEF**

Room schedule, site, programme and budget tested against what the system can repeat. If volumetric precast is the wrong answer, we say so.
Gate · Product-fit assessment

02**DESIGN COORDINATION**

The architect's intent resolved into a module strategy – grid, stacking, service routes, openings and interfaces.
Gate · Module strategy

03**ENGINEERING AND DETAILING**

Structure, connections, reinforcement and cast-ins detailed for manufacture and signed by registered professionals.
Gate · Design freeze

04**MANUFACTURE AND QA**

Casting, curing, demoulding and first fix to a fixed cycle, with recorded hold points.
Gate · Released modules

05**DELIVERY AND INSTALLATION**

Site readiness certified; lifting, placement, connections and testing by one team.
Gate · Handover

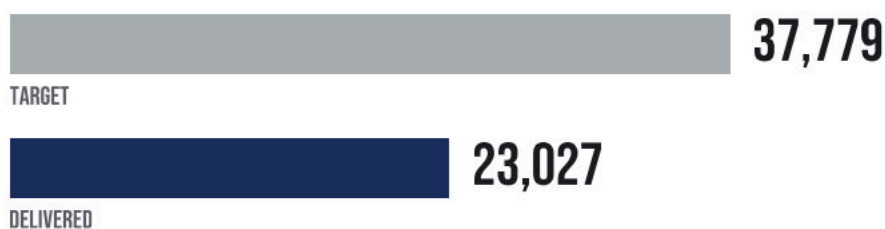
IN THE NUMBERS

NEED IS NOT THE CONSTRAINT.

Three measures of the same problem: programmes missing their own targets, a construction sector half the size it was, and municipalities delivering a fraction of what their growth demands.

Subsidised housing delivery

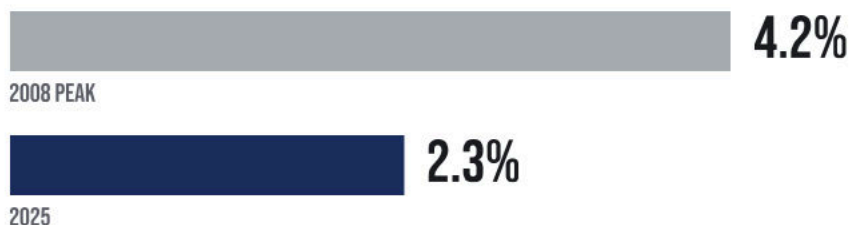
SOUTH AFRICA · 2025/26 · UNITS



Delivery reached 61% of the year's target, against a R20.6bn reduction in the human-settlements MTEF baseline.

Construction as a share of GDP

SOUTH AFRICA · % OF GDP



The sector that must build the homes has shrunk by almost half since its 2008 peak.

One municipality, need vs delivery

FETAKGOMO-TUBATSE, LIMPOPO · HOMES A YEAR



Population grew 2.9% a year from 2011 to 2022. Local subsidised delivery capacity is around an eighth of annual need. Municipal backlog: 16,755 households.

SOURCES — DEPARTMENT OF HUMAN SETTLEMENTS BUDGET VOTE AND HOUSING NEEDS REGISTER; STATS SA NATIONAL ACCOUNTS; FETAKGOMO-TUBATSE IDP — AS CITED IN PRECAST AFRICA'S 2026 BUSINESS PLAN (REFS E13, E14, E19, E24). NEED FIGURES DESCRIBE DEMAND IN PRINCIPLE, NOT ORDERS.

THE MODULE SET · 01-02

SAME MOULD. DIFFERENT ROOMS.

Six configurations of the core module. Each is the same cast volume with its openings and services arranged for the room it will become.

RENDERS ARE ARTIST'S IMPRESSIONS



01

LIVING MODULE

Open end, full-height glazing.

One short end is left open in the mould for a glazed sliding door to the garden, patio or balcony. The living room, dining space or open-plan kitchen of most homes.

OPENINGS · ONE FULL END

02

BEDROOM MODULE

A quiet, solid room.

A closed volume with a punched window and an internal door opening. Concrete walls on every side give each bedroom its own acoustic and fire separation, subject to final design.



OPENINGS · WINDOW + DOOR

THE MODULE SET · 05-06

CORNERS AND STAIRS.

The corner configuration shapes how a home meets its street. The staircase is cast separately and links stacked modules into double-storey homes and walk-ups.

RENDERS ARE ARTIST'S IMPRESSIONS



05

CORNER MODULE

Light from two sides.

A wrap-around opening across one corner opens the room to two views. Corner openings are subject to structural design and confirmed at design freeze.

OPENINGS · CORNER + END WINDOW

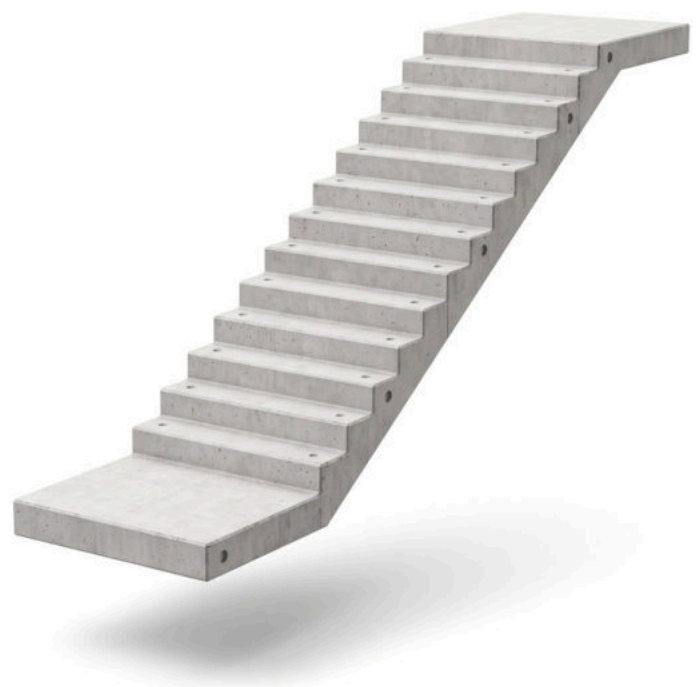
06

STAIRCASE UNIT

One flight, two landings.

Cast in a separate horizontal mould and installed between stacked modules. Dimensions are confirmed during design.

SEPARATE MOULD · DIMENSIONS TBC



ASSEMBLED · 02

FOUR MODULES, TWO STOREYS.



2 × 2

MODULES WIDE × HIGH · LINKED BY A STAIRCASE UNIT

Two modules wide, two high, linked by a staircase unit:
the structural shell of a double-storey townhouse.

ARTIST'S IMPRESSION