

■ FROM DESIGN BRIEF TO SUSTAINABLE FM

Digital Technology in the Design Brief

Incorporating digital technology adoption in the design brief to enable sustainable facility management — planned in during construction, not retrofitted later.



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FMAC2026: Incorporating Digital Technology Adoption in Design Brief to Enable Sustainable FM

About MRCB

MRCB Overview

- Leading Malaysian property & infrastructure developer
- Expertise in urban regeneration, transit-oriented development (TOD), and infrastructure delivery
- Portfolio includes KL Sentral, LRT3, Penang Sentral, Q Sentral, Kompleks Stadium Shah Alam

Shareholder Structure

MAJOR INSTITUTIONAL SHAREHOLDERS

EPF (KWSP)	~36%
Gapurna Sdn Bhd	~15%
Tabung Haji	~5%
KWAP	~2%

Strong institutional backing from Malaysia's major public investment funds and strategic shareholders.

Every Project Designs These In

01

Civil & Structural

The skeleton — planned from day one.

02

Architecture

Form and function, set in the design stage.

03

Mechanical

HVAC and services, fully coordinated.

04

Electrical

Power and distribution, engineered early.

One core service is almost always missing — **the digital layer.**

Digital Technology Is the Fifth Utility

Networks, structured cabling and smart-building services belong on the same drawing board as civil, mechanical and electrical — not on a wish-list for later.

Treat it as core

A utility, not an accessory.

Design it in early

Alongside M&E, in the same stage.

FM depends on it

Day-one readiness, long-term value.



What Bolting It On Later Really Costs

Expensive rework

Retrofit means routing around finished ceilings, walls and fit-out — far more labour.

System conflicts

Late additions collide with civil, structural and M&E that are already built.

Operational disruption

Night and weekend work, phased floors and temporary outages in a live building.

A rigid design

Bolted-on infrastructure resists future change and locks in cost multipliers.

Build-In Beats Retrofit

Industry benchmarks for structured cabling, energy and installation.

30–40%

lower cabling cost

Installed during construction
vs. retrofit after handover.

60–70%

of cost is labour

Open walls and ceilings during
the build cut the labour hours.

20–30%

less energy use

Integrated, right-sized systems
— over 40% in some cases.

~70%

faster install

Modular structured wiring vs.
traditional methods.

The Same Systems, Two Price Tags

ASPECT	DURING CONSTRUCTION	RETROFIT AFTER COMPLETION
Cabling cost	30–40% lower	30–40% higher
Labour	Fewer hours, open access	60–70% of cost, more hours
Energy savings	20–30%+ via integrated design	Harder and costlier to match
Install time	Up to 70% faster (modular)	Longer; phased, after-hours



01 THE CHALLENGE

Starting Without Direction



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No Champion, No Direction

The first task wasn't technical.
It was leadership.



No Champion

One of the biggest problems in digital infrastructure adoption is the absence of a leader who can:

- Drive digital strategy
- Understand user experience and vision
- Align stakeholders
- Translate operational needs into project requirements



Technology is rarely the hardest problem.

Alignment is.

Consultants Support. You Must Drive.

CONSULTANTS BRING

- Domain expertise and input
- Detailed design and drawings
- Capacity to execute the work

ONLY YOU CAN OWN

- The vision and direction
- Stakeholder alignment
- Accountability for the outcome

Hiring a consultant is easy. Owning the outcome is not something you can delegate.

Challenge in Creating Design Brief

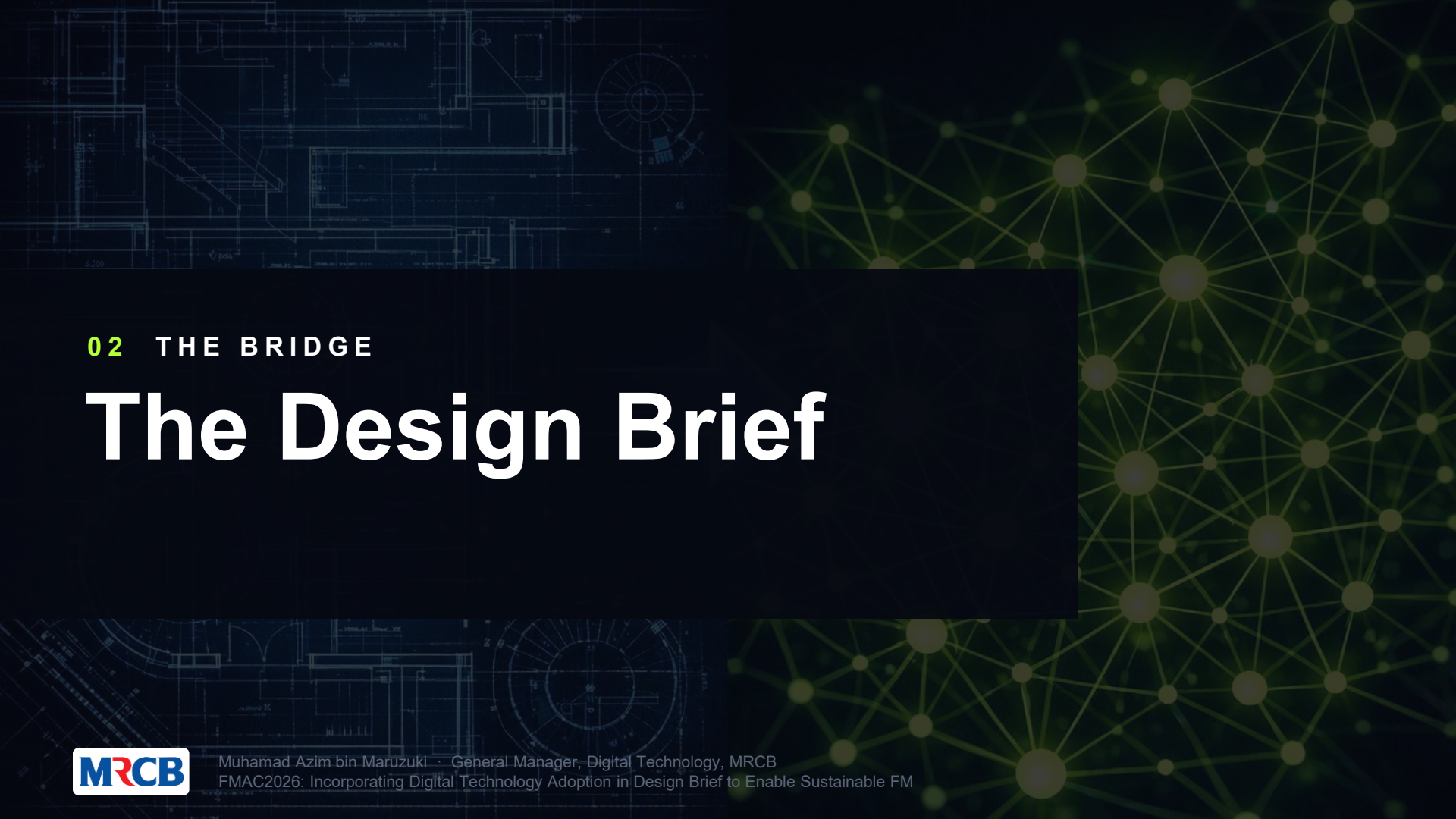
Establishing the design brief required deep understanding of:

- **Construction planning**
- **Engineering drawings**
- **Architectural layouts**
- **Technical limitations**
- **Mechanical & electrical integration**



Digital planning cannot happen in isolation.

The technology team must understand engineering realities.

The background of the slide is a dark blue-grey color. On the left side, there is a faint, light blue architectural drawing or blueprint, showing various geometric shapes, lines, and circular patterns. On the right side, there is a network diagram consisting of numerous small yellow-green circles connected by thin, light green lines, forming a complex web-like structure.

02 THE BRIDGE

The Design Brief

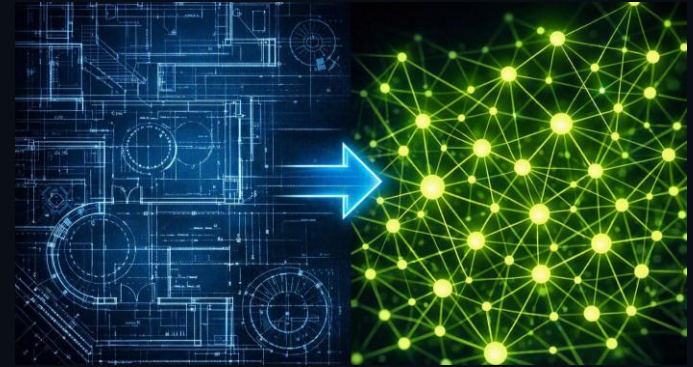


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Purpose of Design Brief

The design brief is not detailed engineering design. It is a structured framework that defines:

- Vision
- Objectives
- Constraints
- Expectations
- Required outcomes



Purpose:

**Provide enough clarity for execution
without over-specifying technical
details.**

A Framework, Not a Checklist

The brief captured every essential element — without locking down the detail. Clarity on the what; deliberate freedom on the how.

Essential elements only

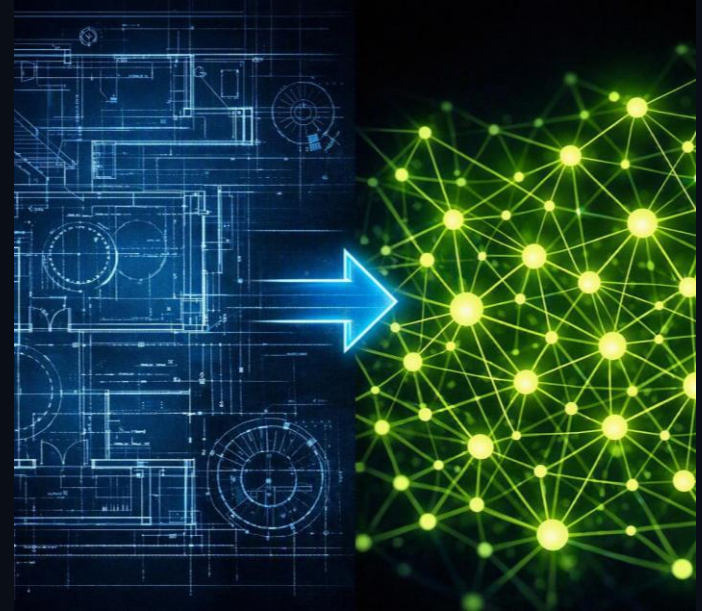
Pathways, risers and scalable infrastructure named.

Deliberately not over-specified

Enough to align, not so much it constrains.

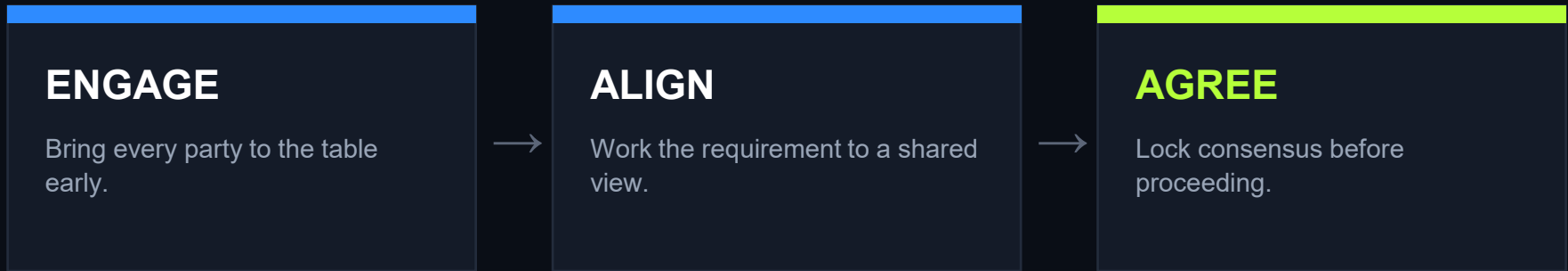
Room for vendor expertise

Space for the best detailed solution to emerge.



Built With Stakeholders, Not For Them

The brief was shaped through continuous engagement — consultants, owners and contractors working the requirement together, before anything was finalized.





■ THE KEY MILESTONE

Nothing proceeds to execution until every party agrees.

Consensus is the milestone. Get alignment up front, and execution runs smoother for the rest of the project.

The background features a dark blue, almost black, surface with several translucent blue cubes scattered across it. Some cubes are connected by glowing green cylindrical rods, creating a network-like structure. The lighting is soft, with some cubes reflecting light on the surface below them.

03 EXECUTION

Flexibility in Practice

From Brief to Tender

STEP 1

Design brief

Essential requirements, agreed.

STEP 2

Tender & procurement

Take the framework to market.

STEP 3

Vendors propose detail

Their expertise, within your intent.

STEP 4

Aligned contract

Both sides clear on success.

Without specifying every detail, both sides understood the requirement before signing. **Shared understanding up front means far less friction later.**

04 THE OUTCOME

Sustainable Facility Management



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Sustainable, Resilient, Expandable

Sustainable

Lower energy and lifecycle cost over the long run.

Resilient

A design that absorbs change without breaking.

Expandable

Capacity to grow whenever the need arrives.

THE NON-NEGOTIABLES

Non-proprietary technology and open protocols + future-proof choices. The foundation must be concrete before you expand from it.

Proven Across the Build

A design set early held up all the way to completion — still matching the technology available at handover, despite the length of the construction programme. Adaptability, proven in practice.

User experience and future-proofing, aligned to the stakeholders' investment.



What Facilities Inherit

01

Capital savings

30–40% lower structured-cabling cost
— and no costly retrofit premiums.

02

Operational & lifecycle

20–30%+ less energy, fewer
replacements, less downtime and
support load.

03

Strategic flexibility

Multi-generation IT and smart-
building ready, without disruptive
retrofits.

Plan it once, in the brief — and facility management reaps it for the building's whole life.

Three Things to Remember

01

Digital technology is a core utility

Design it into the brief alongside civil and M&E — never as an afterthought.

02

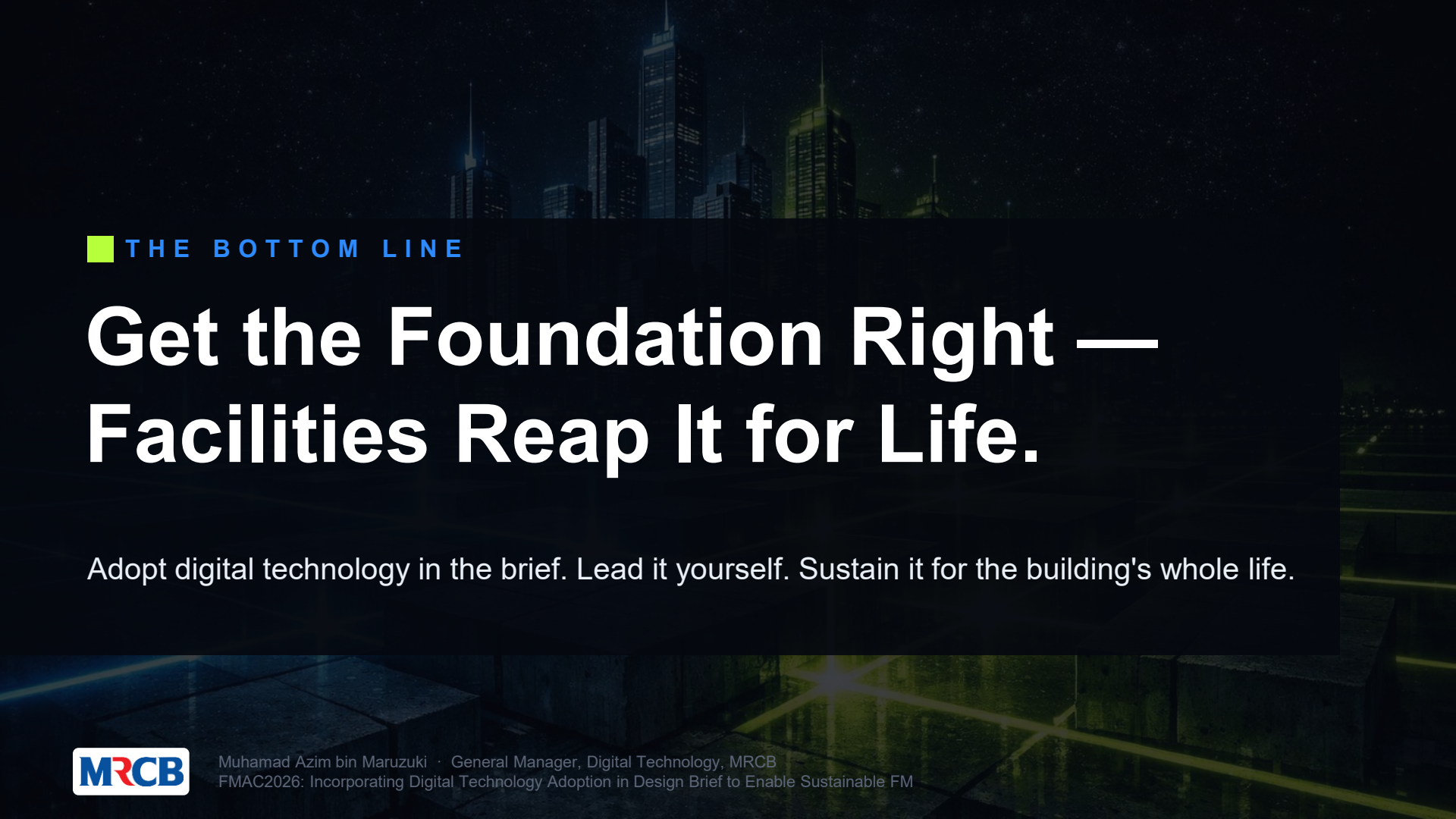
Success is governance-driven

Consultants support; internal leadership owns the vision and alignment.

03

The brief bridges build and FM

It connects construction to sustainable operations through shared, flexible intent.



■ THE BOTTOM LINE

Get the Foundation Right — Facilities Reap It for Life.

Adopt digital technology in the brief. Lead it yourself. Sustain it for the building's whole life.



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