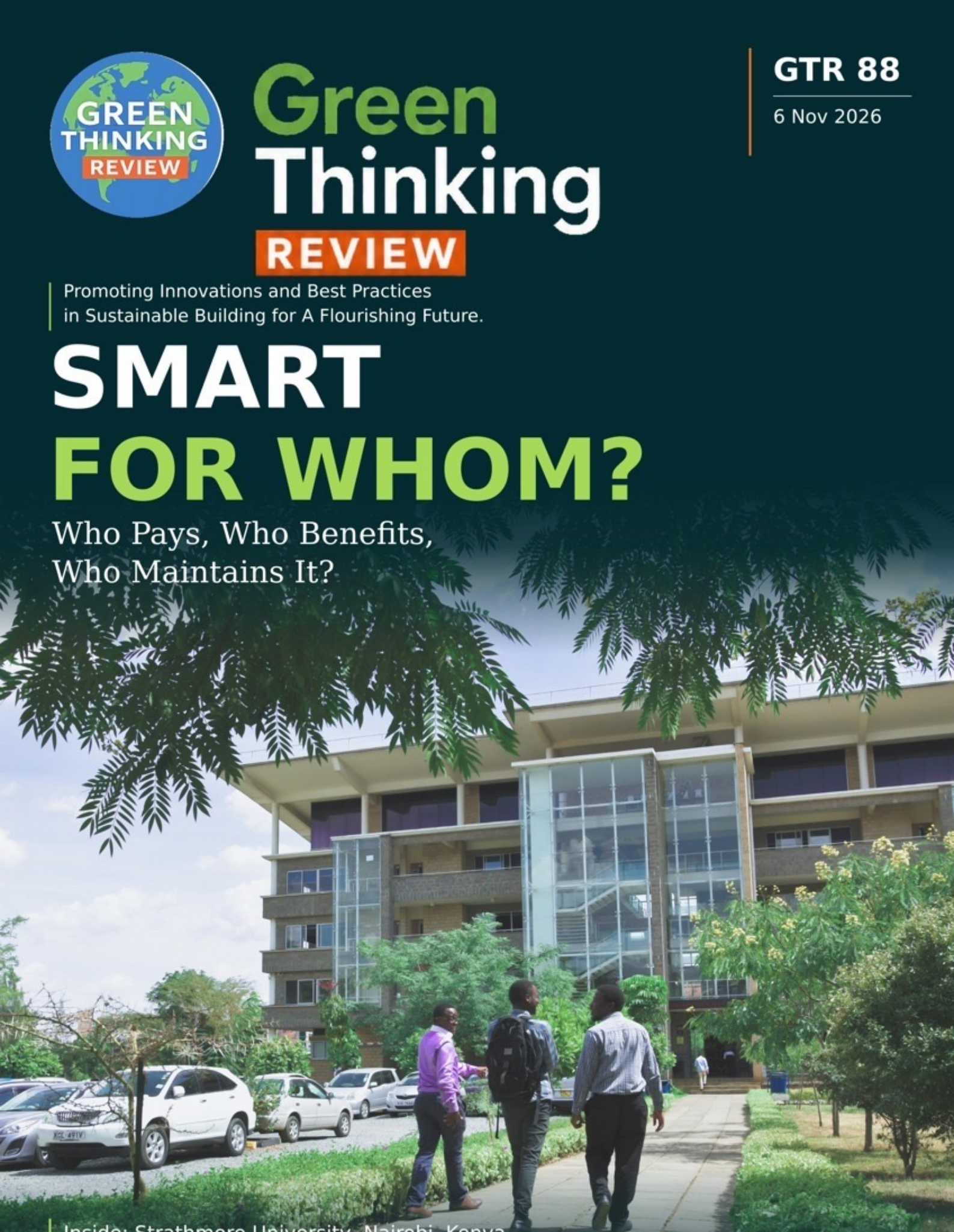
GTR 88
6 Nov 2026

Green Thinking REVIEW

Promoting Innovations and Best Practices
in Sustainable Building for A Flourishing Future.

SMART FOR WHOM?

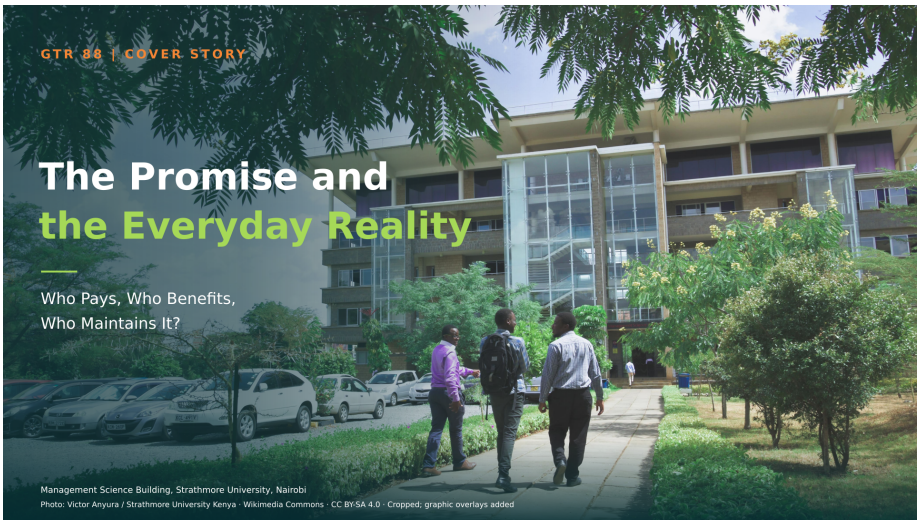
Who Pays, Who Benefits, Who Maintains It?



Inside: Strathmore University, Nairobi, Kenya

Floreat Vita | Let Life Flourish.

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Management Science Building · Photograph cropped; graphic overlays added · Image adaptation: CC BY-SA 4.0



Cover:

The Promise and the Everyday Reality

A light comes on when someone enters. A sensor alerts the maintenance team to a leak. A solar dashboard shows that electricity generation has fallen.

Each offers something useful. But the value depends on what happens next.

Does the light stay on while someone sits quietly? Does anyone respond to the leak alert? Can the person reading the dashboard identify the fault—and arrange a repair?

Smart technology brings possibilities. Making those possibilities work requires people, resources and continuing care.

Who Pays?

The purchase price is only the beginning.

Installation, electricity, connectivity, subscriptions, training, servicing and replacement may all form part of the commitment. These costs can fall on different people: developers, owners, tenants, occupants or maintenance teams.

A system may reduce one expense while introducing another. The question is whether its benefits justify the full commitment—and whether those carrying it understand what they are taking on.

Who Benefits?

Efficiency matters. So do comfort, dignity, safety and ease of use.

Can occupants adjust their surroundings? Can a visitor enter without unnecessary difficulty? Does automation accommodate people whose routines or abilities differ from those anticipated by the designer?

A successful system should deliver benefits that people can recognise in daily life.

Inside this GTR:

Cover Story: *The Promise and the Everyday Reality*

Editor's Note: *Smart Is a Responsibility*

Innovations & Best Practices: *Seven Ways To Make Smart Systems Serve People*

Top 5 Action Points: *Five Questions Before We Specify a Smart System*

Case Study Snippet: *Strathmore University, Nairobi, Kenya: What Happens After Installation?*

Nigeria Focus: *Can We Keep It Working Here?*

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Outside the Box: *2040: When Smart Systems Serve*

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Editor's Note:

Smart Is a Responsibility

Dear Green Thinkers,

In practice, I find that choosing a technology also means choosing a relationship: with its supplier, its operating requirements and the people who will depend on it. That relationship continues long after installation.

GTR 83 asked how AI could remain attentive to place during design. This edition moves into the occupied building, where controls, sensors and automated systems meet everyday routines.

Continued on page 3…

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Editor's Note - continued...

My concern is how we judge their usefulness—and whose experience informs that judgement. An owner may see savings, an occupant may struggle with a control, and a technician may inherit a system without adequate instructions. Each perspective belongs in the assessment.

In Symbiature, I understand Smart as intelligence governed by wisdom: attentive to people, responsive to context and directed towards human flourishing and planetary well-being. That conviction asks me to consider both what a system can achieve and what its continued usefulness will require.

For Nigeria and Africa, those requirements deserve close attention: available skills, reliable support, affordable upkeep and arrangements that remain workable when conditions change.

My invitation is to welcome technology with curiosity and examine it with care.

Who pays? Who benefits? Who maintains it?

The answers should help shape the brief, the budget and the responsibility we carry beyond handover.

Floreat Vita | Let Life Flourish

— Arc. Denis Uche Akabogu FNIA

Editor-in-Chief

Cover Story - continued...

Who Maintains It?

Every alert needs a response. Every component needs a route to repair or replacement.

Who understands the installation? Are instructions available? Can local technicians service it? What happens when the internet fails, a supplier withdraws support or the trained operator leaves?

These questions belong in the design brief and operating budget from the outset.

Make Smart Serve

The ambition is worthwhile: buildings that use resources carefully, respond to changing conditions and help people live and work well.

Achieving it requires sound judgement about what to install, how to operate it and how to sustain its usefulness.

Before we call a building smart, let us ask:

Who pays, who benefits—and who maintains it?

Green Thinking Tip

Every smart-system budget should include the people, knowledge and care needed to sustain its usefulness.

GTR 88 | Green Thinking Insights
The Human Test

👉 A building's intelligence becomes meaningful when people experience its benefits.

👉 The purchase price opens a commitment that someone must fund, operate and maintain.

👉 A useful alert connects information to someone able to act.

👉 Automation should give people confidence in their surroundings and appropriate control over them.

👉 Local skills and dependable support help turn technological promise into lasting usefulness.

👉 Every smart system needs a practical answer to failure, replacement and change.

👉 The people who live with a system should help us judge how well it works.

Make Smart Serve

Innovations & Best Practices:

Seven Ways To Make Smart Systems Serve People

Useful intelligence connects a building's systems with everyday needs. These approaches can guide new installations and improvements to existing buildings.

1 | Put Controls Within Reach

Provide clear, accessible controls where people need them. Label functions plainly and offer appropriate local adjustment, so routine tasks remain comfortable for people with different abilities and levels of technical confidence.

2 | Match Operation to Actual Use

Configure lighting, ventilation and other controls around how spaces are occupied. Observe what happens when people sit still, work late or use rooms differently, then adjust settings with the relevant specialists.

3 | Turn Alerts into Assigned Actions

Direct each important alert to a named person or team. Establish how it will be acknowledged, investigated and resolved. Review recurring warnings so that useful signals remain visible.

4 | Make Performance Clear

Show operators the information needed to recognise a problem: unusual consumption, declining generation or equipment running outside its schedule. Use clear trends and comparisons that support practical decisions.

5 | Provide a Workable Fallback

Plan suitable operation during power, network or component failures. Agree safe fallback arrangements and appropriate manual controls with the system designer, then demonstrate them to those responsible for the building.

6 | Make Handover a Learning Process

Train operators using the installed equipment. Provide settings, diagrams, service contacts and maintenance instructions. Include refresher training and a clear way to pass knowledge to replacement staff.

7 | Keep Tuning After Occupation

Review performance alongside occupant feedback. Record changes to settings and check their effects. Include periodic testing, servicing and replacement planning in the operating budget.

A Lesson from Practice

A 2013 review of Melbourne's Council House 2 identified control strategies and interactions between systems as sources of underperformance –showing why commissioning must examine how systems work together.

GTR 88 / INNOVATIONS

Seven Ways to Make Smart Systems Serve People

Useful intelligence connects building systems with everyday needs.

01 Put Controls Within Reach
Use clear, accessible controls, plain labels and appropriate local adjustment.

02 Match Operation to Actual Use
Set controls around occupancy; review how they respond to everyday routines.

03 Turn Alerts into Assigned Actions
Give each important alert an owner and a clear route to investigation and resolution.

04 Make Performance Clear
Show trends that help operators recognise unusual use or declining performance.

05 Provide a Workable Fallback
Agree safe operation during failures; demonstrate the fallback to building staff.

06 Make Handover a Learning Process
Train on installed equipment; provide records and pass knowledge to new staff.

07 Keep Tuning After Occupation
Review performance with user feedback; record changes and budget for upkeep.

SMART FOR WHOM?
Who pays, who benefits, who maintains it?

Make Smart Serve

Top 5 Action Points

Five Questions Before We Specify a Smart System

Before a product enters the specification, these five questions belong in the brief.

1 | What Problem Are We Solving—and for Whom?

Identify the need, the people affected and the improvement expected. Agree how success will be assessed, including the experience of those who will use the system.

2 | What Will It Cost Throughout Its Useful Life?

Include installation, energy, connectivity, subscriptions, training, servicing and replacement. Establish who pays each cost and whether the operating budget can sustain it.

3 | Can People Use It Comfortably?

Examine accessibility, clarity and appropriate personal control. Where a system collects personal information, establish what is needed, who can access it and how it will be protected.

4 | Who Will Keep It Working?

Identify the responsible operator, available technicians, spare parts and supplier support. Confirm what training and documentation are included—and how knowledge will survive changes in staff.

5 | What Happens When Conditions Change?

Consider power or network failure, changing occupancy, equipment replacement and the withdrawal of supplier support. Establish safe fallback arrangements and whether the system can be adapted or replaced without disproportionate disruption.

Green Thinkers' Takeaway

At handover, ask a regular user to adjust the lighting or ventilation with the internet disconnected. If they need the installer's help, simplify the controls or make the instructions clearer.

Resource Box

Choosing, Paying For and Maintaining Well

Three resources to deepen the questions behind a smart-system specification.

1 | Building Management Systems in Lagos

Factors Influencing Adoption of Building Management System in Commercial Buildings in Lagos State, Nigeria
O. D. Adebisi and A. B. Wahab

A Nigerian study examining how comfort, ease of use, implementation cost and energy savings influence adoption. Useful for connecting technology choices with local operating priorities.

2 | Solar Performance at Strathmore University

Performance Analysis of 600 kWp Grid-Tied Rooftop Solar Photovoltaic Systems at Strathmore University in Kenya
E. Ayora, M. Munji, K. Kaberere and B. Thomas, 2023

An operational study covering generation, losses, monitoring, maintenance and estimated financial returns. Read its economic findings alongside the assumptions used.

3 | Council House 2 After Occupation

Council House 2 (CH2) in Review
M. Hoogland and P. Bannister, 2013

A historical engineering review showing why interconnected systems need coordinated controls, commissioning and continued monitoring. Its findings concern the period studied.

Make Smart Serve **Case Study Snippet**

Strathmore University, Nairobi, Kenya:

What Happens After Installation?



The Management Science Building at Strathmore University, Nairobi, Kenya. Campus view; the rooftop installation is not shown. Photo credit: Victor Anyura / Strathmore University Kenya, via Wikimedia Commons · CC BY-SA 4.0.

At Strathmore University, a 600 kWp rooftop solar installation connects electricity generation with digital monitoring and continuing maintenance.

A published study of its 2019 operation recorded **735 MWh of electricity** and an annual **performance ratio of 57.4%**—a measure of output relative to a solar-resource-based reference, rather than the percentage of installed capacity used.

Monitoring makes performance visible. Keeping it useful requires action. The researchers report regular cleaning, inspections and replacement of damaged panels, failed optimisers and inverters. They identify equipment and environmental factors as possible contributors to losses, without quantifying each factor's annual contribution.

The study estimated a **9.1-year simple payback**, dependent on its financial and operating assumptions.

The lesson reaches beyond solar: useful information needs someone equipped to respond. Installation begins a commitment to skills, budgets and care.

Smart systems serve through the people who keep them working.

GTR 88 | Nigeria Focus: Can We Keep It Working Here?

A smart installation enters a particular building, budget and working culture. Its specification should reflect the conditions in which people will depend on it.

For a Nigerian project, the questions become practical. What power and connectivity are available? Which technicians can attend? How quickly can replacement parts arrive? Can the owner sustain subscriptions and servicing alongside other operating expenses?

These conditions deserve attention during selection, while alternatives remain open.

Responsibility also needs a clear home. A solar dashboard may reveal declining output, but someone must investigate. An access-control fault needs a response that preserves both security and safe escape. An automated water system needs people who understand its settings and can recognise a problem.

Handover should establish that capability through demonstrations, usable instructions, service contacts and an agreed maintenance budget. Staff changes should trigger further training.

The opportunity is substantial: technology supported by local knowledge, dependable service and informed ownership can remain useful as circumstances change.

Specify the system—and the arrangements that will sustain it.

OUTSIDE THE BOX

2040: When Smart Systems Serve



An imagined future
AI-generated editorial illustration

An imagined future.

At 2:15 p.m., the building notices that one meeting room is warmer than usual. Its first response is routine: check occupancy, shading and ventilation. Then it finds a conflict. The room's cooling demand has risen, but the electricity available from the solar system has fallen.

The operator receives a short message: ***The west meeting room is warming. An external shade has not responded. Shall I move the next booking to the cooler room while maintenance investigates?***

She checks with the meeting organiser and agrees.

The building records the fault, assigns a service request and shows the technician the component's maintenance history. Occupants can still adjust the room within appropriate limits.

By evening, the shade is repaired. The operator checks its movement before closing the request.

At the monthly review, a recurring fault prompts a different question: should that component be replaced with one the local service team can support more reliably?

The building supplies the evidence. People make the decision.

Perhaps this is a useful ambition for 2040: systems that handle routine tasks well, explain significant problems clearly and recognise when human judgement is needed.

Intelligence includes knowing when to ask.

GTR Closing Reflection

The Real Test Begins After Handover

A smart system earns its place when people can use it, maintain it and count on it. That is the test after handover, when the installer has left and the building has to serve people every day.

Before we specify the next system, let us ask: ***Who pays, who benefits, and who maintains it?*** *The answers tell us whether the technology will serve the people who live and work with it.*

Floreat Vita | Let Life Flourish.

A Question for Today

Which system in your building makes daily life easier—and who keeps it working?

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Make Smart Serve

Outside the Box

TECHNOLOGY HAS A JOB TO DO.

MAKE SMART SERVE.

> **A smart system earns its place when people can use it, maintain it and count on it.**

Floreat Vita| Let Life Flourish.



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