GTR 83
28 Aug 2026

Green Thinking REVIEW

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

Intelligence for Sustainable Design

Even AI Needs a Sense of Place

Floreat Vita | Let Life Flourish.

The Designer Still Decides

Cover:

AI can now generate forms, compare options, simulate performance, analyse data, and accelerate parts of the design process.

That changes practice. But it does not remove responsibility.

A design may be produced faster, tested more extensively, and presented more convincingly than before. Yet none of that guarantees that it belongs to its place, serves its users, or responds wisely to climate, culture, materials, cost, maintenance, and ecology.

These remain matters of judgement.

The designer must still decide which problems are worth solving, which data matter, which assumptions are questionable, and which recommendations should be accepted, adapted, or rejected.

This is especially important in sustainable design.

A tool may optimise energy use while overlooking local construction capacity. It may recommend a high-performing material that is difficult to source or maintain. It may produce an elegant form that performs well in simulation but poorly in everyday use. The question, therefore, is not whether AI can contribute to design. It can.

The more important question is whether the designer has enough contextual understanding to direct that intelligence well.

Good design still requires knowledge of place: sun, wind, rain, vegetation, infrastructure, culture, behaviour, resources, craft, maintenance, and the lives of the people who will inhabit the result.

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Inside this GTR:

Editor's Note:

Dear Green Thinkers,

Smart Is Not Enough

We are entering an age in which designers can generate options, analyse performance, simulate environments, compare materials, and test possibilities faster than ever before. That is remarkable.

But faster is not always wiser.

A tool may identify the most energy-efficient form and still know little about how people actually live there. It may optimise daylight without understanding privacy.

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It may calculate airflow without recognising cultural patterns of use. It may recommend a material without knowing whether it can be sourced, repaired, or maintained locally.

This is where design intelligence must become more than computational power.

Sustainable design requires a sense of place – an understanding of climate, people, culture, ecology, materials, resources, and the realities of building and maintaining what we design.

AI can expand what the designer can see.

It can reveal patterns, test alternatives, and help us ask better questions. But it cannot relieve us of judgement.

The designer still has to decide what technology belongs, where it belongs, and what human and ecological purpose it should serve.

That capacity – grounded in knowledge, professional judgement, and local reality – may become even more important as our tools become more powerful.

GTR 83 therefore does not ask whether AI will replace the designer. It asks a more useful question:

How do we use greater intelligence to make better, more responsible places?

Because the future of sustainable design will not be shaped by smart tools alone.

It will be shaped by people wise enough to know what those tools should be used for.

Floreat Vita | Let Life Flourish
– The Editorial Team

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AI can strengthen this process by making patterns visible, testing alternatives quickly, and expanding the range of possibilities considered.

But the designer remains accountable for the final choice.

This is not a defence of human judgement against technology.

It is an argument for responsible partnership.

The strongest future for AI in sustainable design may not be one in which machines decide more.

It may be one in which designers are able to decide better.

Green Thinking Insights

The Wisdom Beyond the Algorithm

👉 *AI can widen the field of possibility. It cannot determine what is worth pursuing.*

👉 *Data can describe conditions. Context explains why they matter.*

👉 *The most advanced solution is not always the most appropriate one.*

👉 *Good judgement includes knowing when not to use a technology.*

👉 *The designer's responsibility grows as the tools become more powerful.*

GTR Reflection

Intelligence can expand possibility. Judgement gives it direction. ***The designer still decides.***

Wisdom is not the opposite of intelligence. It is what gives intelligence direction.

The algorithm may expand the possibilities. The human still carries the responsibility.

The Designer Still Decides

Innovations & Best Practices:

Seven Ways to Keep Intelligence in Context.

AI can strengthen sustainable design, but only when it is grounded in the realities of place, people, climate, and use.

Here are seven ways to keep intelligence in context.

1. Start with Climate

Use digital tools to understand sun, wind, rainfall, heat, and seasonal patterns before generating design responses.

2. Read the Place

Site conditions, landscape, ecology, infrastructure, culture, and patterns of daily life should shape the questions we ask of technology.

3. Test, Don't Just Generate

Use AI and simulation to compare alternatives, reveal trade-offs, and test assumptions — not simply to produce more options.

4. Value Local Knowledge

Professional experience, craft knowledge, user behaviour, and community insight often reveal realities that datasets cannot fully capture.

5. Design for What Can Be Built

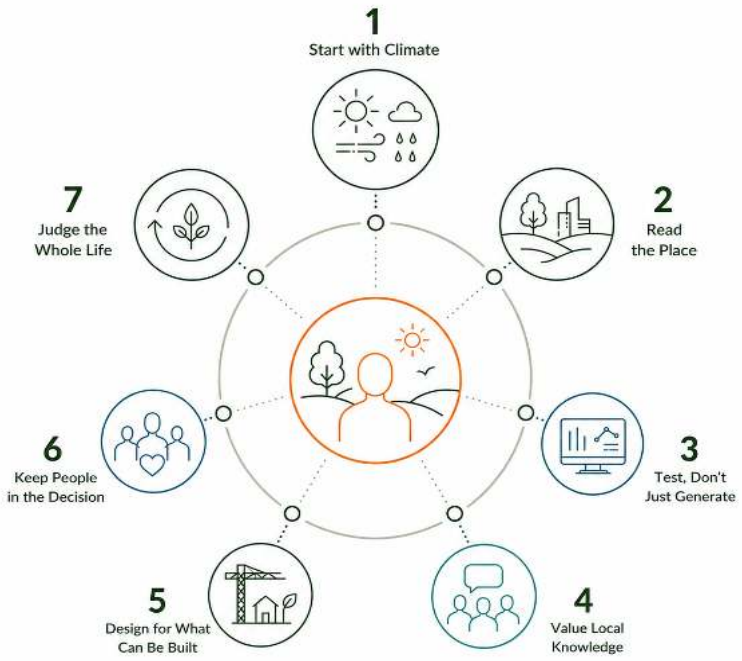
A solution is not truly intelligent if materials, skills, systems, or technologies cannot be sourced, constructed, repaired, or maintained locally.

6. Keep People in the Decision

Performance matters, but so do comfort, dignity, accessibility, safety, culture, and everyday experience. Sustainable design must remain human-centred.

7. Judge the Whole Life

Look beyond construction. Consider operation, maintenance, adaptation, replacement, resource use, and what happens when systems fail.



Green Thinking Insight

The value of intelligence lies not in how much it can calculate, but in how wisely it can be directed.

Context gives intelligence meaning. Judgement gives it direction.

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The Designer Still Decides

Top 5 Action Points

Five Questions Before We Call a Design Smart

Before adopting any AI-assisted or technology-driven design solution, ask:

1. Does It Understand the Place?

Has the design responded to climate, site, ecology, culture, infrastructure, and patterns of use – or only to available data?

2. Does It Improve Life?

Does the proposed solution make the building or place healthier, safer, more comfortable, accessible, resilient, and supportive of human well-being?

3. Can It Be Built and Maintained?

Are the materials, skills, systems, and technologies appropriate to local capacity? A solution that cannot be repaired or sustained is not truly smart.

4. What Are the Trade-offs?

Every optimisation has consequences. What is gained – and what may be lost – in cost, energy, carbon, comfort, culture, durability, or adaptability?

5. Who Still Makes the Decision?

AI can recommend, compare, and predict. Responsibility remains with the designer, client, consultant, policymaker, and community making the final choice.

Green Thinkers' Challenge

Take one design decision you are working on and ask these five questions before approving it. If the answer to any one of them is unclear, the design may need more intelligence – not necessarily more technology. Smart design is not defined by the sophistication of its tools.
It is defined by the wisdom of its decisions.

Resources for Further Study

Learn More. Think Deeper. Design Wisely.

READ 👉 RIBA AI Report 2025
Royal Institute of British Architects
A useful profession-wide view of AI adoption, opportunities, ethics, professional responsibility, and the continuing importance of architectural oversight. (Architecture.com)
Link: architecture.com — search *RIBA AI Report 2025*

👉 Recommendation on the Ethics of Artificial Intelligence
UNESCO
A global framework addressing human oversight, accountability, sustainability, inclusion, and environmental responsibility in the use of AI. (UNESCO)
Link: unesco.org/en/artificial-intelligence/recommendation-ethics

EXPLORE 👉 Ladybug Tools
Open-source environmental design tools for climate, daylight, solar, thermal-comfort, and other performance analyses that help designers understand place before making decisions. (Ladybug Tools)
Link: ladybug.tools

👉 AI & Sustainable Design in AEC
Autodesk University
Explores how AI and machine learning can support environmental simulation, early-stage performance analysis, carbon assessment, and design iteration. (Autodesk)
Link: autodesk.com/autodesk-university

Green Thinkers' Takeaway

Use intelligence to expand what you can understand — not to avoid the responsibility to understand.

The Designer Still Decides

Case Study Snippet

Sierra Leone: When Computation Listened to Climate - Maternal Center of Excellence, Koidu City.

Image Credit: https://mohs.gov.sl

In Koidu City, Kono District of Sierra Leone, digital intelligence was not used to make architecture look futuristic. It was used to help a building respond better to its place.

For the Maternal Center of Excellence, Government Hospital, Build Health International incorporated BIM, generative design, energy and daylight analysis, and computational fluid dynamics into the design process. The tools helped the team study natural ventilation, daylight, solar exposure, material efficiency, and energy use. (Build Health Intl)

But the computation had a clear brief: respond to local realities.

Sierra Leone's heat, long wet season, intense rainfall, unreliable electricity, operating costs, and need for maintainable systems shaped the questions being tested. The resulting design uses low and high louvers, pitched roofs, ceiling fans, shaded and semi-enclosed spaces, and natural ventilation to reduce heat buildup and dependence on mechanical cooling. (Build Health Intl)

Context also meant understanding people. Courtyards, waiting areas, family accommodation, privacy-sensitive spaces, and other planning decisions respond to patterns of care and community life around maternal health. The 120-bed facility welcomed its first patients in February 2026. (Build Health Intl)

The lesson for sustainable design is not that computation produced the answer.

It helped designers test better answers against the realities of climate, resources, use, and place.

Image Credit: https://mohs.gov.sl

Green Thinking Tip

Intelligence becomes valuable when it listens before it optimises.
The technology expanded what could be tested.
The designer still decided what mattered.

The Designer Still Decides

Outside the Box

2040: When Buildings Learned Before They Were Built.

By 2040, some of the most important lessons a building will learn may happen before construction begins.

Imagine a design tested against years of possible futures before a foundation is laid.

How will it behave during extreme heat? Where will wind accelerate or disappear? How will daylight change through the seasons?
What happens when power fails, rainfall intensifies, materials become scarce, or occupancy changes?

Digital models may allow designers to rehearse these futures in advance — comparing options, exposing weaknesses, and revealing consequences that were once discovered only after occupation.

But the breakthrough will not be prediction alone.

It will be judgement.

A model may identify the lowest-energy option. The designer must still ask whether it is affordable, maintainable, culturally appropriate, comfortable, resilient, and right for its place.

The buildings of 2040 may therefore become "smarter" before they exist — not because machines have learned to design independently, but because designers have learned to use intelligence more deliberately.

The best outcome will not be a building that knows everything.

It will be a building whose important questions were asked early enough.

A Question for Today:

The next time a digital tool recommends a design solution, pause before accepting it. Ask:

Does this solution understand the place — or only the data we gave it?

Consider the climate, people, culture, materials, resources, maintenance, and ecology that may not appear fully in the model.

Because intelligence can suggest. ***The designer still decides.***

GTR Closing Reflection:

The future of design may depend less on predicting everything — and more on knowing what deserves to be tested before we build.

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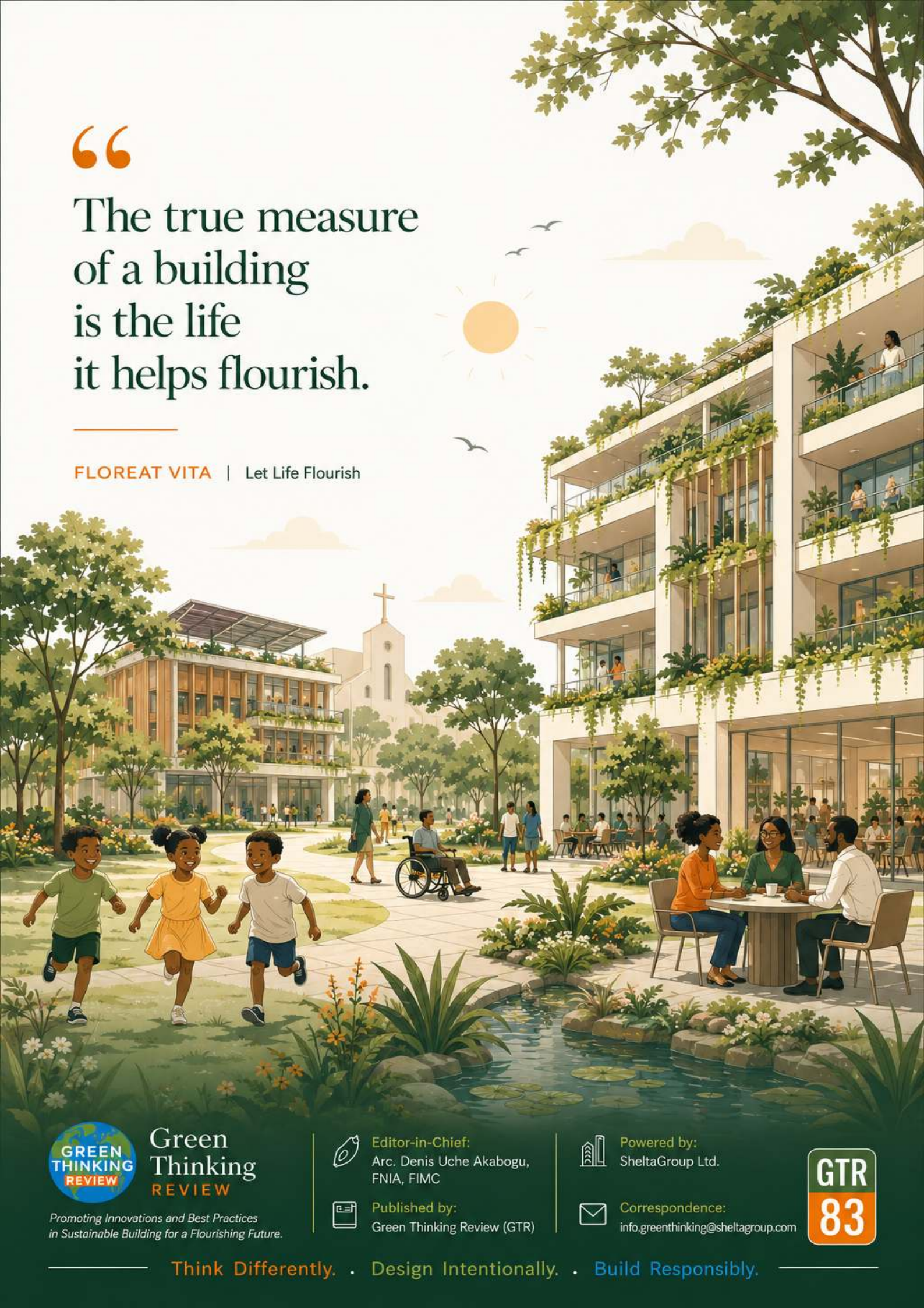

GREEN THINKING REVIEW
Green Thinking REVIEW
Promoting Innovations and Best Practices in Sustainable Building for a Flourishing Future.

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Published by:
Green Thinking Review (GTR)

Powered by:
SheltaGroup Ltd.

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