

CPD Points: 2 ECSA CREDITS



Consulting Engineers South Africa

INFRASTRUCTURE
Indaba
2026

18 - 19
March 2026
Durban ICC

Beyond Research and Reports

How Academia Can Co-Build Resilient Institutions
for South Africa's Infrastructure Renewal

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UKZN

Theme: Pioneering Change Engineering Infrastructure for Inclusive Growth

The Paradox of South African Infrastructure

World-Class Expertise

Brilliant engineers, advanced research, and global best practices.



Persistent Failure

Potholes return within months, water systems fail, and projects stall.



“Technical solutions collapse when institutions are weak.”

The Real Crisis is Capability, Not Concrete

Broken systems cause far more damage than broken pipes, pavements, or pumps.



- ✓ Understaffed departments
- ✓ Underfunded maintenance mandates
- ✓ Undermined by poor governance

What we really lack are **resilient institutions** to plan, build, maintain, and govern infrastructure over time.

The Report-and-Retreat Trap



The Result:

- Results sit on shelves; zero capacity transfer.
- Example: A municipality receives a 100-page asset management plan or climate risk assessment, but lacks the personnel to implement it.

Knowledge without action is just noise.

Solutions and Opportunities — Let's Challenge Ourselves

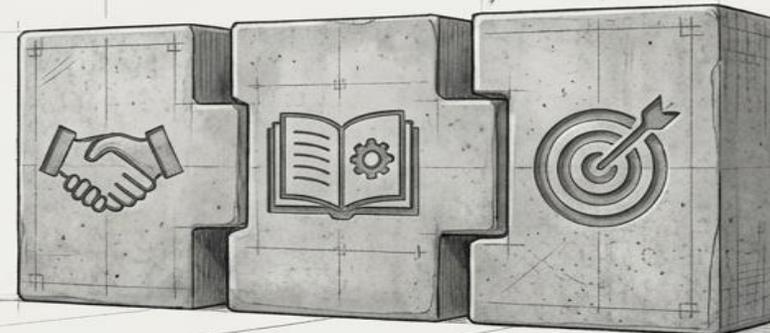
Bridge the Gap: From Observer to Co-Builder

Passive
Observer

STRg

Active
Co-builder

U-KZN-DoT
"Sustainable transportation
Chair"



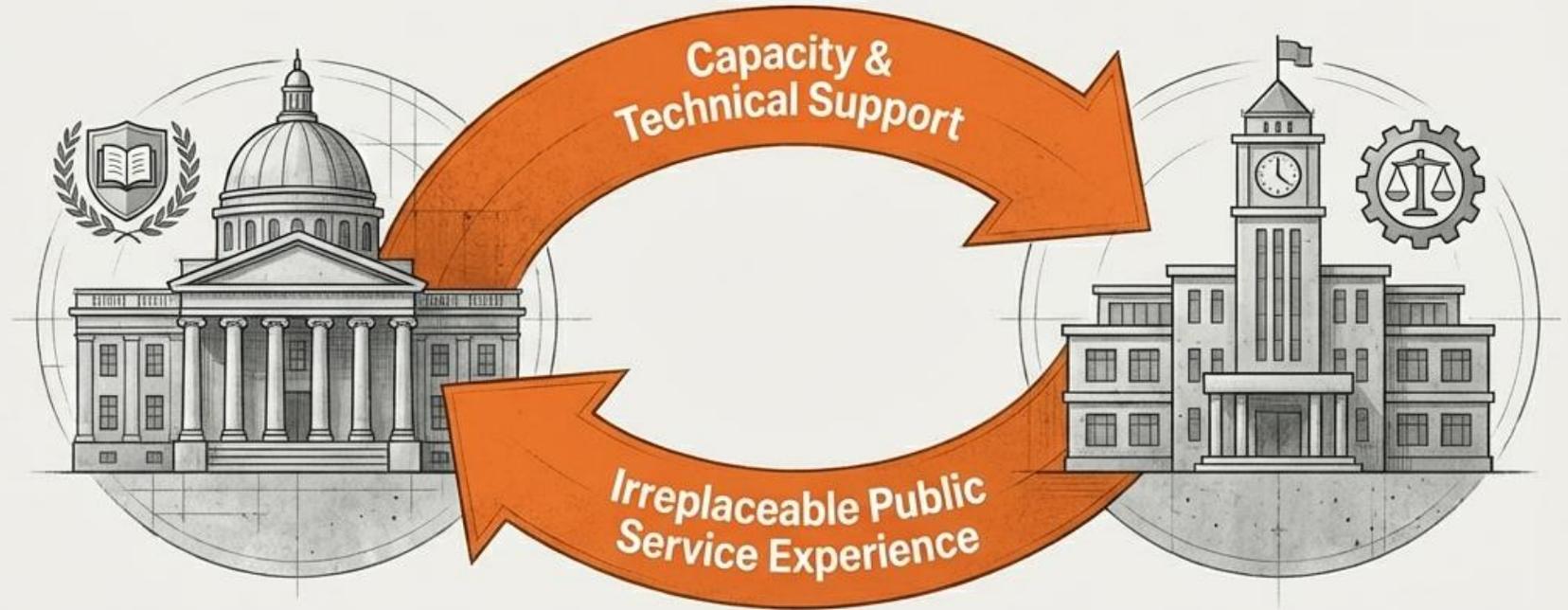
1. Embedded partnerships with municipalities.
2. Curriculum reform reflecting real-world complexity.
3. Impact metrics that prioritise public service over mere publications.

Pillar 1: Embed Talent to Build Capacity

The Action: Place postgraduate students inside municipalities.

UKZN Proof of Concept:

- Build digital asset registers
- Assess road vulnerability to flooding
- Analyse maintenance backlogs



These are not internships—they are **institutional support missions**.
Universities must be **living labs**, not ivory towers.

Pillar 2: Engineer for Society

Civil engineering cannot just be about calculations and codes.



The Required Competencies:

- Ethics & professional conduct
- Public finance & procurement law
- Governance & stakeholder engagement

A PrEng who can design a bridge but cannot navigate a corrupt tender process will not serve society well. **Professional excellence means technical skill plus institutional wisdom.**

Pillar 3: Redefine Academic Impact

Reward contributions that genuinely strengthen institutions, rather than just generating paperwork.



THE OLD PARADIGM

Obsolete Metric: Mere Publications
Generates paperwork but zero
ground-level capacity.



New Metrics for Success (DSI/NRF Alignment):

- ✓ Helping a municipality pass an audit (e.g., through improved asset tracking).
- ✓ Reducing staff turnover through mentorship of young engineers.
- ✓ Co-developing maintenance plans that endure beyond short-term political cycles.

The Reality Check on Scaling Collaboration

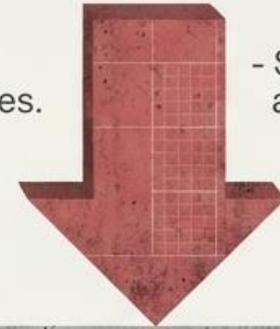
RISKA



- Risk-averse bureaucracy.



- Short-term political cycles.



- Siloed thinking across sectors.

OPPORTUNITIES



- MISA's on-the-ground presence and collaboration.



- CESA's established mentorship networks.



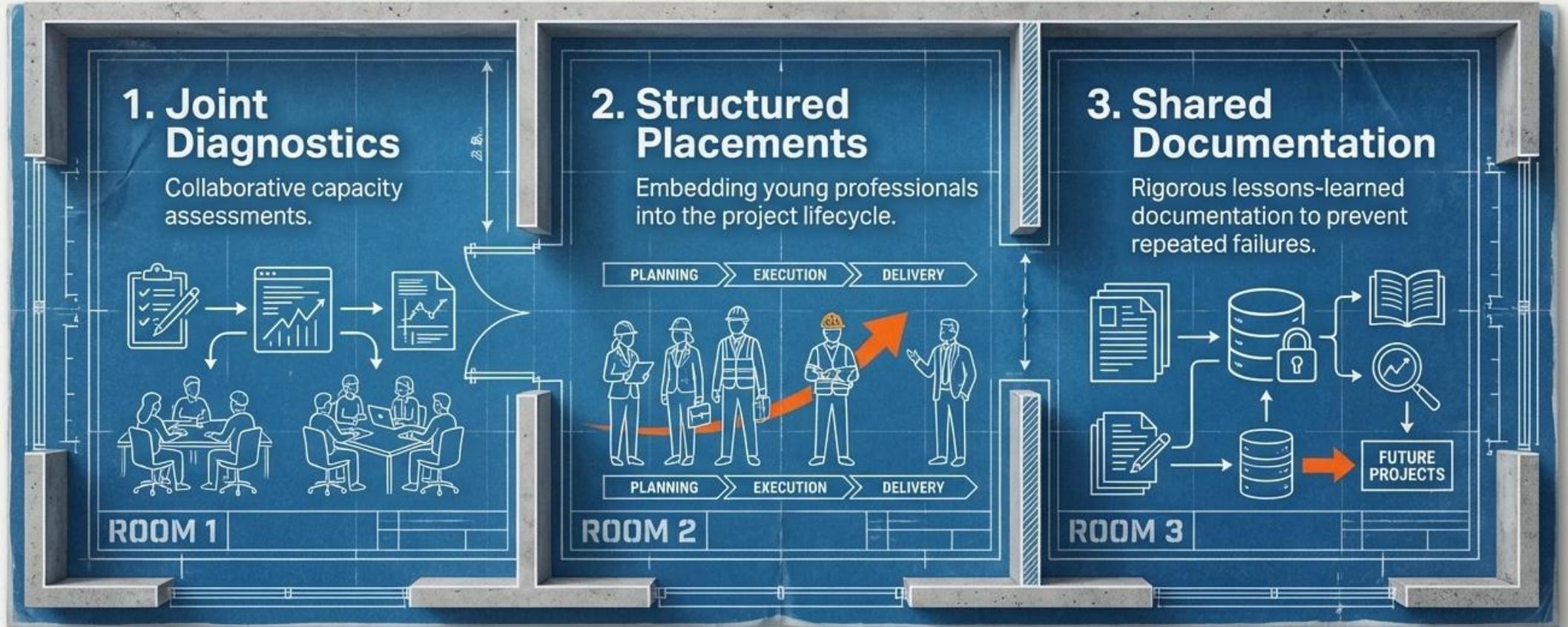
- DSI-funded university-municipality grants.

The question isn't whether it's possible—it's whether we have the will to scale it.

PROPOSAL

The Proposal: The CESA-Academia Compact

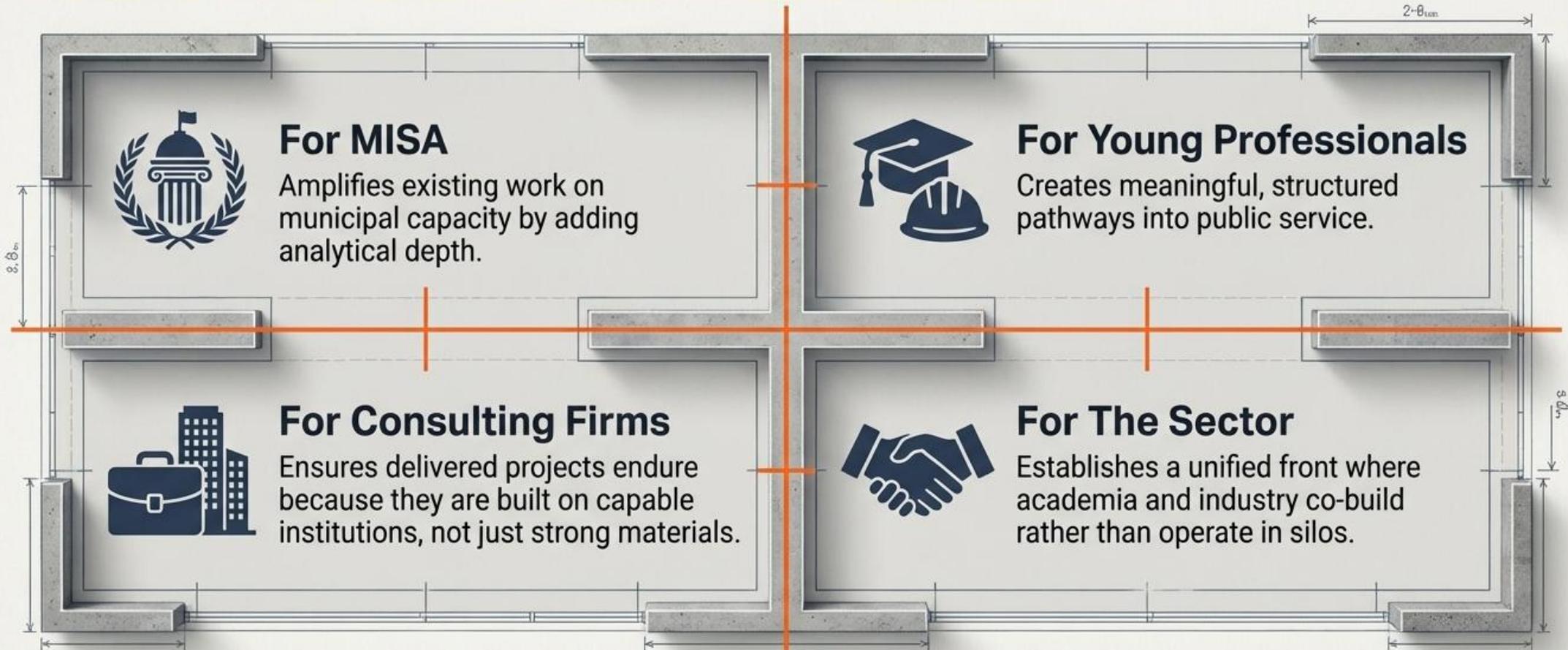
Every major infrastructure project must include an academic partner for capacity transfer, not just oversight.



BUT WHY?

Strategic Alignment: Why This Matters Now

Directly answers the call for Professional Excellence Across Sectors.



So? Let's

Stop Studying the Crisis and Co-Build the Cure

To Academia:

To Industry (CESA):

To Government:

Engage

No amount of concrete will fix a system that lacks integrity, skills, or continuity. Let's stop just studying the crisis—and **start co-building the cure.**

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Thank you!

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