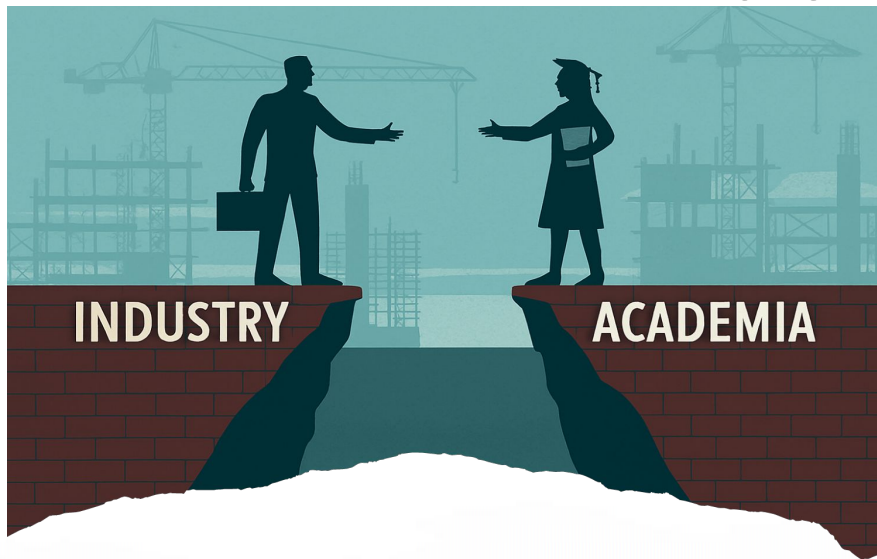


Research and Development in Construction: Driving Innovation through Academia and Industry Partnerships



University of Zimbabwe
CIFOZ 2025 Annual
Congress
24 to 27 September
2025

Introduction & Context

- Importance of construction in economic development and job creation
- Global challenges: urbanization, climate change, infrastructure gaps
- Infrastructure Development is one of our National 10 Priority Areas
- The roles of universities and industry in addressing these challenges

Why R&D Matters in Construction

- Productivity challenges in construction
- Digital transformation:
 - Building Information Modelling
 - AI
 - Automation
 - Robotics
- Sustainability: green materials, circular economy approaches
- Safety and resilience

Academia's Role in R&D

- Knowledge creation through research
- Training future-ready engineers and professionals
- Neutral ground for experimentation and policy influence



Industry's Role in R&D

- Budgeting for R&D— specific % of the budget must be R&D
- Sharing research priorities with the University for collaborative R&D
- Providing testbeds for research
- Scaling and commercialization of academic outputs



The Power of Partnerships



Collaborative
research centers
and consortia



Joint funding
models (grants, co-
investment)



Bridging theory
and practice

Case Studies of Successful Partnerships

Smart Pavement Materials – Masvingo– Beitbridge Corridor

The University of Zimbabwe's Construction & Civil Engineering Department worked with Bitumen Construction Services to trial a locally sourced nano-modified asphalt on a 10 km stretch.

Improved pavement durability by ~25% and reduced maintenance costs.



Case Studies of Successful Partnerships

AI-enabled Building Information Modelling & Digital Twin Pilot – Harare CBD

In 2024, a joint program between UZ's Faculty of Engineering and the Built Environment and a local contractor tested AI-driven clash detection and automated progress tracking on a commercial building.

18% fewer on-site design errors and 12% less rework costs compared to earlier phase

Barriers to Effective Collaboration

- Misaligned priorities (publishing vs. deadlines)
- Funding challenges
- Intellectual property management
- Limited communication channels





Course of Action

- Establishing joint research centres that come out of Industry specific R&D budgets
- Encouraging student-industry innovation programs
- Instituting student internship programmes for continuous research agenda
- Strengthening global networks



Call to Action & Conclusion

R&D is the engine
of innovation

Partnerships are
the bridge
between ideas
and impact

Call for stronger
academia-industry
collaboration