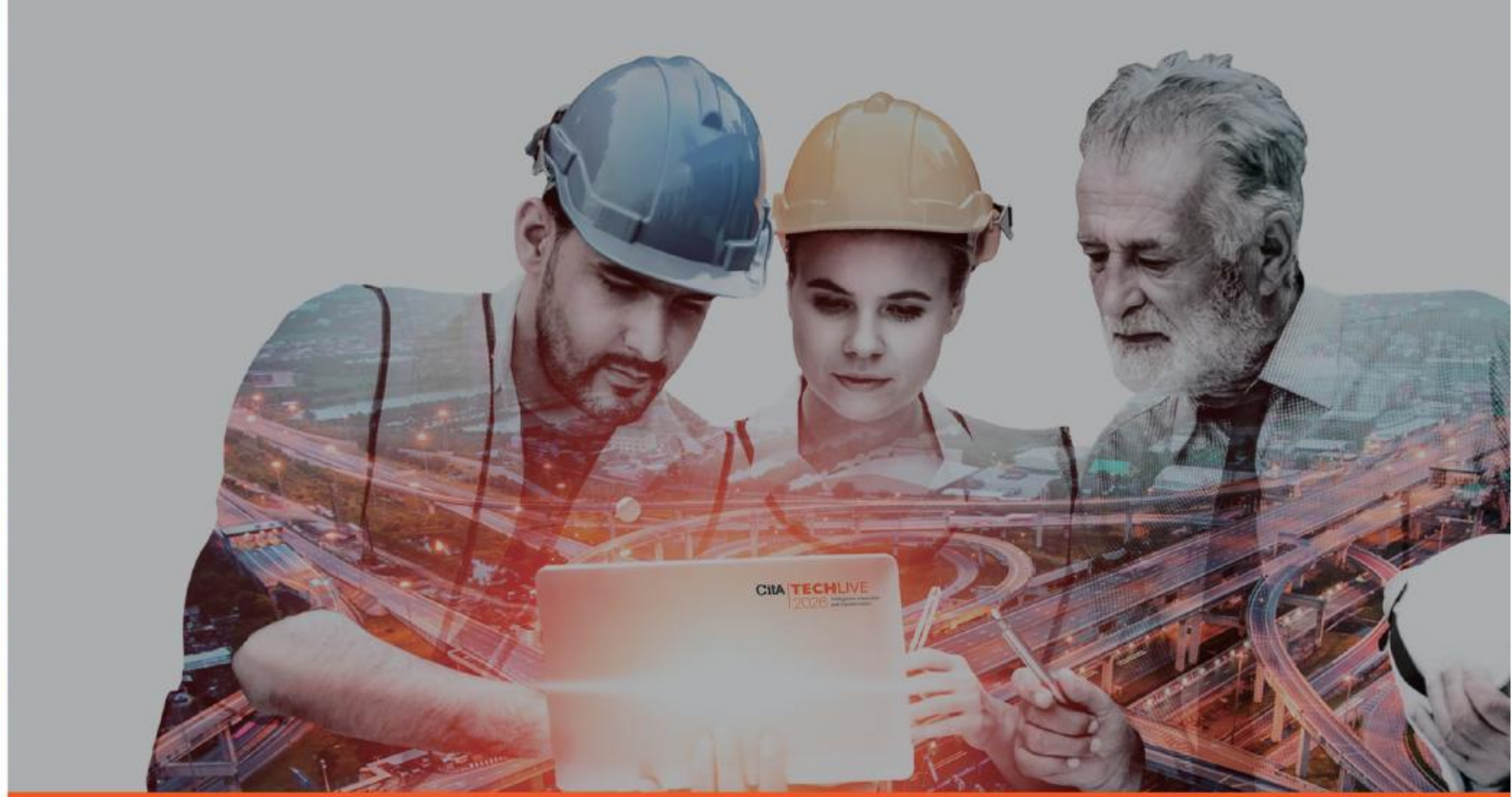




Shaping the Future of Construction

The industry that builds the world must now build its AI capability

From Individual use to organizational value

Frederic Vaeremans | Tetra Tech



Three questions.

Where are we on the journey from use to organisational value?

1. **Have you used AI at work this week?**
2. **Have you used an AI Agent to help you complete a recurring task?**
3. **Is the AI agent now part of how your whole team does that work?**



Source: Autodesk, 2026 State of Design & Make: AI Pulse.

AI is already mainstream.

The adoption debate has moved from access to application.

98%
use at least one AI tool

59%
Use or plan to use agentic AI within a year

19%
have integrated AI into workflows

The differentiator is moving from access to integration.

outperform others on:
- Decision making (+18 percentage points)
- Quality of output (+15 pp)
- Cost (+12 pp)
- Productivity & time saved (+7 pp)



Source: RICS, Artificial Intelligence in Construction Report, 2025.

Construction is experimenting.

Embedded adoption remains rare.

45%
HAVE NO FORMAL PLAN

→

34%
EARLY-STAGE PILOTS

→

12%
REGULAR USE IN SPECIFIC PROCESSES

→

1.5%
WIDESPREAD USE ACROSS PROCESSES AND FUNCTIONS

Interest is not the constraint. Integrated capability is.



Source: McKinsey, The state of AI in 2026: On the road to ROI.

The AI value gap.

Adoption is widespread. Organisational value is not.

80%

say AI improved their own productivity

THE GAP

37%

report a positive EBIT contribution

ADOPTION ≠ VALUE



What high performers do differently.

They redesign work, broaden the ambition and build the conditions to scale.

1 **REDESIGN WORKFLOWS**

Change the process, not just the task.

2 **GO BEYOND EFFICIENCY**

Use AI to improve capacity, quality, client outcomes and innovation.

3 **LEAD, MEASURE + GOVERN**

Set clear ownership, establish a baseline and build in human review.

4 **BUILD THE FOUNDATIONS TO SCALE**

Invest in the data, technology, governance and skills needed to repeat what works.



The biggest gains come from changing the design.

The first shift is from task efficiency to workflow value.

OLD QUESTION

How can AI make this task faster?

TASK EFFICIENCY

NEW QUESTION

How would we design this workflow if AI were available from the beginning?

WORKFLOW VALUE



From individual use to organisational value.

Scale the proven workflow, not simply access to the tool.

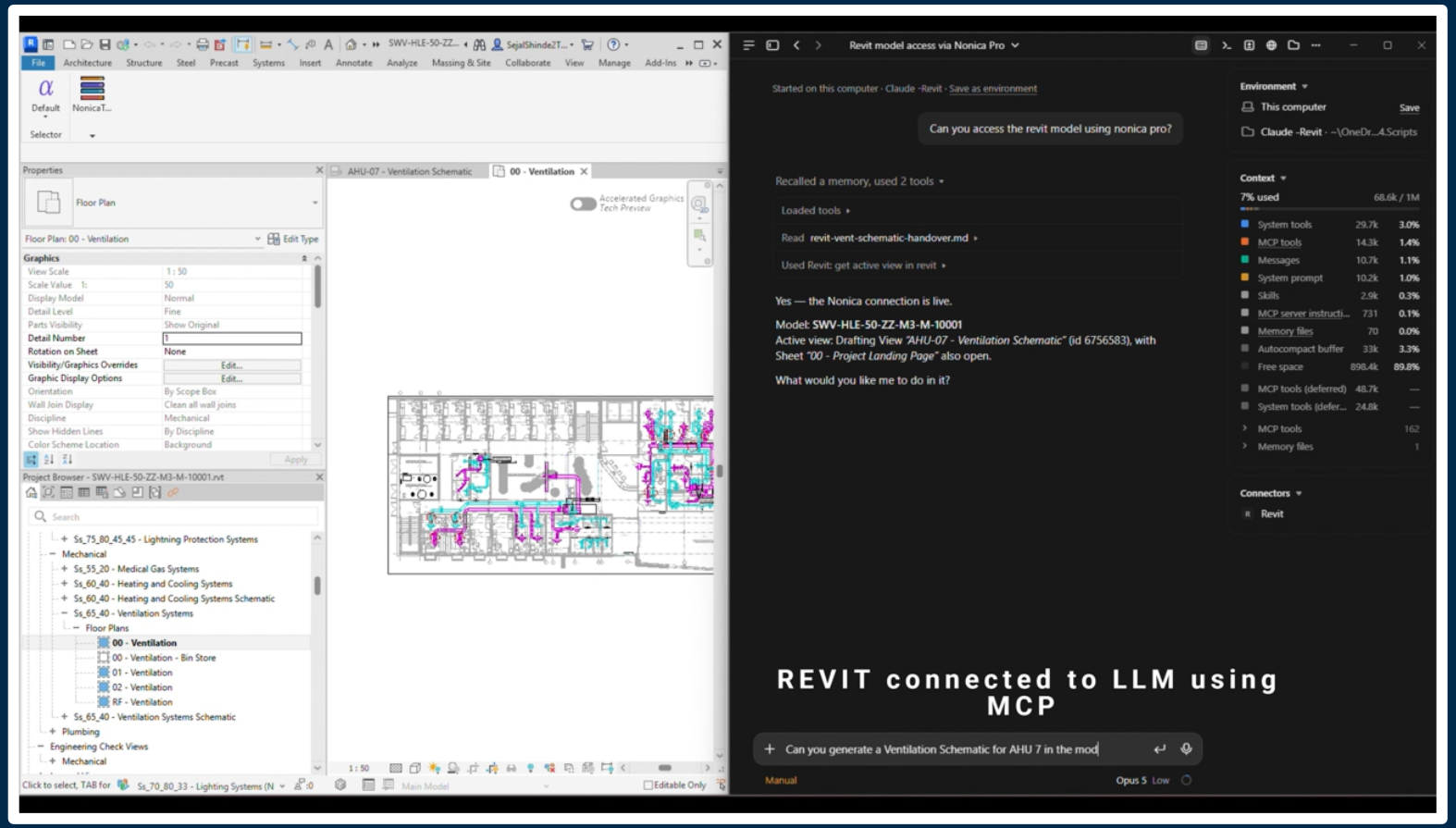
INDIVIDUAL		TEAM		ORGANISATION
1 **SPOT** Find a repeated, valuable use.	→ 2 **PROVE** Test on real cases. Measure value, quality and risk.	→ 3 **PACKAGE** Capture the method, data, controls and owner.	→ 4 **ADOPT** Make it a shared team workflow.	→ 5 **EXTEND** Integrate, govern and reuse across processes & org

Repeatable method · clear ownership · proportionate controls · measured value

8. The industry that builds the world must build its AI capability



Using AI to interact with a Revit 2D model





AI opportunities across the asset lifecycle

From one use case to a portfolio of opportunities.

1 PLANNING

Operational AI Agent

Environmental Regulatory Requirements Assistant

A specialized AI agent helps project teams navigate environmental regulations across federal, provincial and municipal jurisdictions, identify applicable requirements and potential permits or approvals, and support early project planning.

- Identify applicable requirements
- Navigate multiple jurisdictions
- Support early project planning



2 DESIGN

Operational AI Agent

Engineering Standards Assistant

A specialized AI agent helps engineers navigate technical standards and regulatory requirements for water and sewer design, providing relevant guidance to support engineering decisions and design reviews.

- Quick access to relevant standards
- Find requirements and best practices
- Support design reviews and QA/QC





AI opportunities across the asset lifecycle

From one use case to a portfolio of opportunities.

3 CONSTRUCTION — Operational AI Agent

Change Order Documentation Assistant

A specialized AI agent supports construction supervision teams in preparing structured justifications for contract amendments and change orders, improving documentation consistency and reducing administrative effort.

- Prepare structured justifications
- Align with contract requirements
- Reduce administrative effort

Change Order Assistant

Draft a justification for a change order related to unforeseen rock excavation.

Draft justification (V-1572):

1. **Description of the work** — Unforeseen rock excavation...
2. **Reason for the change** — Site conditions...
3. **Impact on cost and schedule** — Additional quantities...
4. **Supporting information** — Photos, plans, and references...

4 OPERATIONS — Applied on Client Projects

AI-Powered Roadway Asset Recognition

Computer vision detects and classifies roadway assets from imagery, accelerating asset inventory production and generating structured information to support infrastructure condition assessments and asset management.

- Detect and classify roadway assets
- Generate structured asset data
- Support condition assessment and asset management



Detected assets

Guardrails	Signs	Drainage structures
12	8	6



Go beyond efficiency.

Measure the business outcome, not the AI activity.

01 CAPACITY

Protect expert time and create delivery capacity.

MEASURE WITH

Cycle time
Hours released
Throughput

02 QUALITY

Reduce errors, rework and inconsistency.

MEASURE WITH

Error rate
Rework
First-time-right

03 CLIENT OUTCOMES

Improve responsiveness, insight and decision speed.

MEASURE WITH

Response time
Decision speed
Client satisfaction

04 INNOVATION

Create new services and better propositions.

MEASURE WITH

New offerings
Conversion
New revenue



Maturity needs foundations.

Generating sustainable AI value requires capability around it.

PEOPLE

Do people have the skills and role clarity to work differently with AI?

GOVERNANCE

Can we use AI safely, accountably and transparently?

TECHNOLOGY

Do we have fit-for-purpose tools and integration?

PROCESS

Has the workflow been redesigned around the outcome?

DATA

Is the information trusted, accessible and traceable?

Leadership - Adaptability – Change Management

13. The industry that builds the world must build its AI capability



Foundations in practice.

People, process, data, technology and governance must work together around real outcomes

PEOPLE

Global AI lead + Network of AI Champions

Training at tool, skill, and role level

Communities of Practice

GOVERNANCE

AI Council

Policy

Risk-based governance & controls

TECHNOLOGY

Enterprise AI platforms + approved AI apps only

MCP/API integration

AI register

PROCESS

Embedding and scaling via Agent marketplace

Mandatory testing, evaluation, and sign-off

DATA

AI access controlled via data labelling + RBAC

Trusted and verified data only



Professional accountability stays human.

The workflow can change. Professional accountability does not.

HUMAN REVIEW

Review critical outputs

TRUSTED DATA

Protect and verify data

TRACEABILITY

Trace sources and decisions

OWNERSHIP

Name the accountable owner

MONITORING

Monitor quality, value, and risk

@ TetraTech: AI amplifies and extends human professional expertise

Five actions you can take now

Start with a repeatable workflow where AI can assist and professionals can verify.

Look for work that is repetitive for people, structured enough for AI and important enough to measure.

1 SELECT

A repeatable workflow

Find, compare, extract, report or flag.

2 NAME

Owner and users

Involve the people who do the work.

3 BASELINE

Current performance

Time, quality, rework, response or capacity.

4 DESIGN

Human + AI roles

AI assists. The professional interprets, validates or approves.

5 TEST

Real cases

Review value, quality and risk. Stop, standardise or scale.

GOOD FIRST CANDIDATES

Standards and procedures · document review · model interrogation · recurring reports · quality or compliance checks

Practical starting point: one process, one owner, one measure and one review date.



Remember:

THE TOOLS WILL KEEP CHANGING.

THE CAPABILITY & ADAPTABILITY WE BUILD IS WHAT LASTS.