Subject Matter

INFRASTRUCTURE COLAB
FIRST COHORT REPORT

The future is built together.

What 15 organisations, 55 people and 21 months of structured collaboration taught us about solving infrastructure's shared problems.

INDUSTRY / GOVERNMENT / RESEARCH

2022–2024

A BIGGER TABLE. A SHARED PURPOSE.

Some problems are too big for one organisation.

The Infrastructure CoLab brought industry, government and research together around one ambition: an infrastructure sector that is sustainable, circular and net zero.

Infrastructure is one of the largest consumers of resources in the economy. The decisions that would change that sit across supply chains, investment, policy and research, and no single organisation holds all of them. The CoLab created a neutral place where those organisations could work on a shared problem as one team, with government in the room and research alongside.

Co-created by Subject Matter and The University of Queensland, and seeded by the Queensland Government with matching investment from industry and academia, the program launched in 2021 and ran its first cohort over 21 months, from July 2022 to March 2024. This report sets out what the cohort did, what participants valued, what we learned, and what comes next.

15
organisations across industry and government

55
participants working in cross-sector teams

4
project tables, each founded by an industry leader

20+
facilitated design sprints

25+
sector problems identified, three taken into development

75%+
of participants surveyed agree co-innovation will accelerate sustainable infrastructure in Queensland

FOUNDATION PARTNERS

ARUP · KBR · Downer (Relationships creating success) · accenture

THE CASE FOR WORKING DIFFERENTLY

The sector was ready to innovate. The system wasn't built for it.

Pressure to decarbonise, protect biodiversity and move to a circular economy has made infrastructure organisations more willing to change how they work than at any time in a generation. Willingness has not been the constraint.

The research behind the CoLab, and the interviews conducted through it, point to the same set of barriers. They are structural, they sit between organisations, and no one organisation can remove them alone.

- Project contracts that leave no room to work across departments or supply chains
- Commercial sensitivity that stops partners and competitors sharing what they know
- No common data, standards or indicators for comparing options
- No capacity for the slow work of innovation alongside delivery

WHAT MADE THE COLAB DIFFERENT

Industry sets the problem

Each table starts with a commercially relevant challenge that an industry leader owns and is prepared to lead, aligned with government priorities.

Government is at the table

Queensland Government representatives joined sprints across departments, outside the usual single-project, single-contract relationship.

Research runs alongside

University of Queensland researchers brought current evidence into each sprint and studied the program itself as it ran.



Infrastructure CoLab launch, Brisbane, May 2021: 85 senior leaders from industry, government and research.

STRUCTURE THAT TURNS ENERGY INTO PROGRESS

Collaboration, designed to go somewhere.

Every table follows the same path. A founder brings a problem it owns, a cross-sector team forms around it, and a facilitated sprint program takes that team from problem to tested concept.

00

Prepare

Form the table. Agree the charter, expectations and the base concept.

01

Understand

Frame the issue, set out problem hypotheses, and test them with stakeholders and experts.

02

Shape and prototype

Develop options, test the riskiest assumptions and build first concepts.

03

Validate

Run experiments with the people who would use or approve the solution. Keep what survives.

04

Scale

Business model, roadmap and the ask: who needs to do what next, including government.

8

half-day sprints across the four phases

4–6 months

elapsed from kick-off to tested concept

2–4 weeks

between sprints for research and validation

WHO DOES WHAT

Table founder	Brings the problem and sponsors the team at executive level.
Participants	Bring the capabilities and perspectives the problem needs.
Government	Joins sprints, tests assumptions against policy, hears the ask directly.
University of Queensland	Evidence reviews, project research and independent evaluation.
Subject Matter	Designs and facilitates the process, and carries the workload between sessions.



A CoLab design sprint under way in Brisbane.

FROM IDEA TO FIRST COHORT

Four years in the making.

2020–21 — Designed with the sector

Program and governance model co-designed with industry, government and academia, drawing on local and global expertise. A senior advisory board is recruited.

2021 — Launched

Public launch in Brisbane with 85 senior attendees and a high-level panel. The partnership receives the Innovation Partnerships Award at the UQ Research Innovation Awards.

2022 — Seeded

Queensland Government seed funding secured, with matching investment from industry and academia. Arup, KBR, Downer and Accenture join as foundation partners. UQ funds the Sustainable Infrastructure Research Hub, and the first peer-reviewed article on the CoLab model is published.

2022–23 — Sprints begin

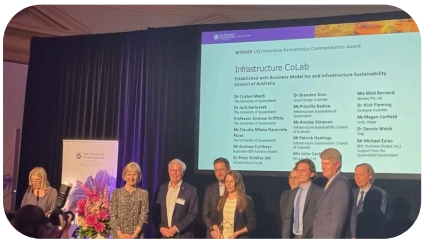
The design sprint program starts in July 2022. Teams present to senior government officials, including Directors-General, and the program is presented to the Australian Design Council. Research on preparing the infrastructure workforce for sustainability transitions is co-funded with KBR.

2023 — Depth and reach

A government steering committee meets alongside the teams. A second article, on circular economy in infrastructure procurement, is published, and the model is presented to an international audience at Cardiff University.

2024 — Evaluated

The third table kicks off in February with government representatives taking part in sprints. The program is evaluated at March 2024. Dr Cristyn Meath is named an overall winner of UQ's Early to Mid-Career Researcher Industry Engagement Awards for the collaboration.



Innovation Partnerships Award, UQ.



CoLab community event, Brisbane.



Regular community events kept the network connected.

THREE CHALLENGES WITH SECTOR-WIDE RELEVANCE

Big questions. Practical directions.

Each table was founded by an organisation that owned the problem and was joined by others with a stake in solving it. Progress is reported as at March 2024; the work described here was still in development.

01 Circular wind energy

How could the growth of wind energy in Queensland also advance a circular economy?

Founded by Arup · Acciona · PwC · Struber · Boral

WHAT THE TEAM DID

Reviewed how other jurisdictions are approaching circularity in wind, mapped the local value chain, and tested the barriers that would stop circular practice taking hold. The work was aligned with the Queensland Climate Action Plan and the Queensland Energy and Jobs Plan.

WHAT EMERGED

- A blueprint for circular wind farms
- An industry stewardship framework built on global best practice
- A research hub for wind power innovation
- A demonstration precinct, or living lab, for testing in practice

At March 2024: well advanced through the sprint program, refining concepts and prototypes and validating them with industry, community and government.

02 Carbon in investment decisions

How could carbon be costed earlier, when choices have the greatest influence?

Founded by KBR · CleanCo · FTI Consulting · EPEC

WHAT THE TEAM DID

Began with a concept for a digital tool to quantify and cost carbon in infrastructure projects. Research surfaced the limits of current carbon costing and accounting, and the value of a portfolio-level view. The team pivoted from building a tool to defining a standard that many tools and organisations could work to.

WHAT EMERGED

- A standardised framework for costing carbon in early investment and planning decisions
- Industry-led, designed to be recognised by government
- Flexible enough for each organisation's data and operating environment, and scalable beyond Queensland

At March 2024: midway through the sprint program, with the framework approach defined and in development.

03 Safer infrastructure decisions

How could better risk insight support the people who own and operate infrastructure?

Founded by Downer | NHVR | Microsoft | Mirvac | Sirius Beta | FTI Consulting

WHAT THE TEAM DID

Set out to design a next generation risk modelling and decision-making tool for asset owners and operators. The problem needed very large volumes of data and specialist technology, so the first task was assembling a table with the right capabilities. That took time, and trust.

WHAT EMERGED

- A concept that combines conventional modelling and machine learning with the ability to reason about why a model reaches its conclusions
- A way to model unknowns and events with no precedent
- A table spanning contractor, regulator, technology and property

At March 2024: table formed and sprint program kicked off in February 2024.

04 A fourth table

Founded by Accenture, working with The University of Queensland, Subject Matter and the Queensland Government to define its focus.

Founded by Accenture

At March 2024: opportunity area in scoping.

WHAT THE THREE PROJECTS HAVE IN COMMON

None could be solved inside one organisation

Each needed owners, contractors, suppliers, advisers or regulators who do not normally sit in the same room without a contract between them.

Each changed shape once the team looked properly

A tool became a framework. A product idea became a question of who needed to be at the table. The first brief was rarely the real problem.

All aimed at how the sector works, not one project

The ambition was to change business as usual: frameworks, standards and shared infrastructure that others could adopt.

THE VALUE WAS ALSO IN HOW PEOPLE WORKED

New connections. A different way forward.

"I feel that we've achieved more in the 2 sessions, than probably what I've done in other sort of collaboration or working groups."

Participant interview, program evaluation, March 2024

"We can have beneficial outcomes. But it takes the whole chain."
Participant interview

"We want their [government] collaboration in this to have a higher chance of success."
Participant interview

"It's one of the reasons we wanted to be involved, to see what this process was actually like ... It's definitely different to the way we would typically work."
Participant interview

"One of the greatest challenges ... in terms of delivering on its ambition around sustainability requires cross governmental working. But the contract[s] that we typically operate within are not set up to do that."
Participant interview

WHAT THE EVALUATION HEARD

A wider view of the problem
Stepping outside a specialism and hearing constraints across the supply chain and government.

Room to speak openly
A neutral facilitator and clear governance made it possible to share commercially sensitive material.

Government as collaborator
Working with several departments on system-level challenges, not one project at a time.

Less load, more thinking
A structured process, with the recording and synthesis done for the team.

Relationships that last
Trust built around solving a shared problem, not delivering a contract.

The evaluation was led by The University of Queensland as part of a multi-year research agenda. By March 2024 it had drawn on 26 interviews with participating companies and government steering committee members, and observation of 20 design sprints and meetings.

AN HONEST ACCOUNT

What we would do differently.

The first cohort proved the model and showed where it strains. These are the lessons from the evaluation, and what each means for the next round.

1	**Forming the right table takes longer than running the sprints.** One table needed specialist technology and data partners before it could start, and took more than a year to assemble.	NEXT ROUND Tables are formed and committed before the sprint clock starts.
2	**Momentum is won or lost between sprints.** Teams made the most progress when someone owned the follow-up between sessions.	NEXT ROUND Every table has a dedicated project lead from kick-off.
3	**The work between sessions is where solutions get built.** Research, validation and synthesis took more effort than planned.	NEXT ROUND Working sessions and research support are scheduled, and resourced, between sprints.
4	**Government time is scarce, so timing matters.** Government involvement had the greatest effect at particular phases, not throughout.	NEXT ROUND Government joins at the points where it changes the outcome.
5	**The first brief is rarely the real problem.** Tables that revisited their problem early made better progress later.	NEXT ROUND Each round is shaped with industry and government around specific, owned challenges.

RECOGNITION

Innovation Partnerships Award

UQ Research Innovation Awards, for the Infrastructure CoLab partnership.

UQ Industry Engagement Awards 2024

Dr Cristyn Meath named one of two overall winners of the Early to Mid-Career Researcher awards for the CoLab collaboration with Subject Matter.

RESEARCH

A studied model

The CoLab is the subject of peer-reviewed research, including *Co-designing a multi-level platform for industry level transition to circular economy principles: A case study of the Infrastructure CoLab* (Meath et al., 2022) and later work on circular economy in infrastructure procurement.

The research finds the CoLab is one of few initiatives working at the level between individual projects and whole-of-sector policy.

WHO TOOK PART

ARUP · KBR · Downer (Relationships creating success) · accenture · NHVR · Microsoft · cleanco queensland · SIRIUS BETA · epece · pwc · acciona · mirvac · FTI CONSULTING · STRUBER · BORAL · The University Of Queensland AUSTRALIA · Queensland Government · Subject Matter

Co-created by Subject Matter and The University of Queensland. Seeded by the Queensland Government, with matching investment from industry and academia.

AN INVITATION TO INDUSTRY, GOVERNMENT AND RESEARCH

Bring the challenge. Help shape what comes next.

What important problem is your organisation struggling to solve because the answer sits across several organisations?

The next round of the Infrastructure CoLab is open to industry-led teams. We are looking for organisations ready to found a table: to bring a problem they own, sponsor it at executive level, and lead a cross-sector team through a structured program to a tested concept.

REGISTER A TEAM

infrastructurecolab.com

TALK TO US

hello@subjectmatter.com.au

About this report. Program activity, project status and participant experiences reflect the Infrastructure CoLab program evaluation of March 2024. Projects were in development at that date; implementation and longer-term impact were still to be evaluated. Subject Matter is the current name of the delivery partner identified in the original records as Business Models Inc. Photographs are from the 2021 Launch Event Report and program records.

We acknowledge the Traditional Owners of the lands on which we work and pay our respects to Elders past and present.