



ROAD INFRASTRUCTURE
MANAGEMENT FORUM

Our Carbon Equation

Rapid prototyping solves road testing problem fast

Luke McGregor | Company-X

in association with



LUKE MCGREGOR

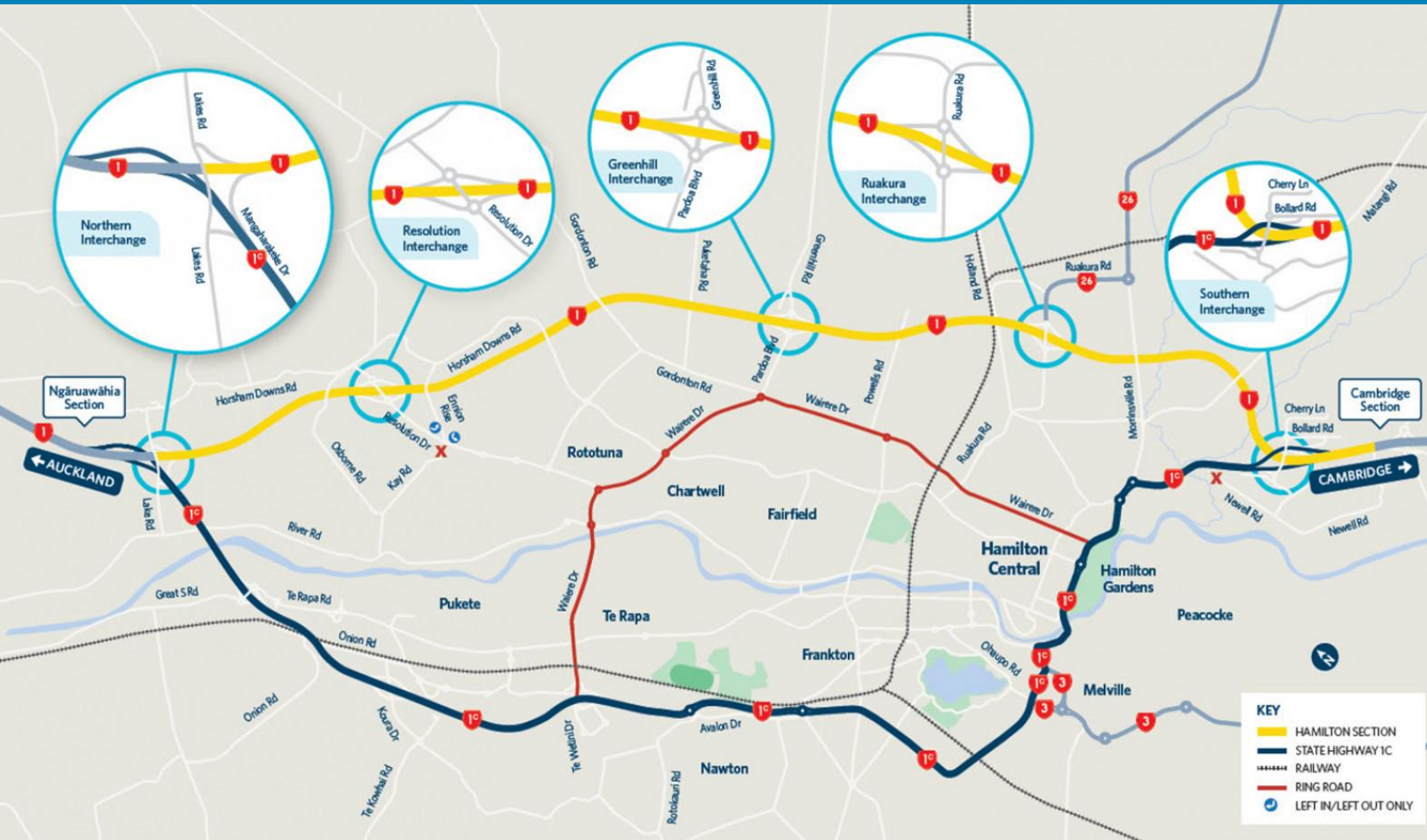
Software Architect

Company-X and the Roothing Sector

- Partnered with the Road Efficiency Group (REG) on REG Insights and AMCF.
- Worked with CityEdge Alliance to manage their test data.
- Partnered with Waka Kotahi on AMDS
- Worked with other businesses in the civil and geotechnical space.



CityEdge Alliance



- Beca
- Coffey Group
- Fletcher Construction
- Hick Bros
- Higgins Construction
- Waka Kotahi NZ Transport Agency

Company-X and the Roading Sector

- In 2018 we built the Waikato Expressway Testing Application (WETA)
- Over 150K individual tests with over a million data points and more than a thousand criteria to validate the tests.



CityEdge Alliance



“The CityEdge Alliance team who worked with Company-X only had good things to say about how proactive Company-X was in tailoring the system for what we wanted it to do.”

Paul Gurran

CityEdge Alliance

In this talk...

- Why is making good software hard?
- What can go wrong?
- How we used tactics like rapid prototyping to make WETA a success

**How many of you have been
involved in a Software Project?**

**Who has used software
that doesn't do
what you think it should?**

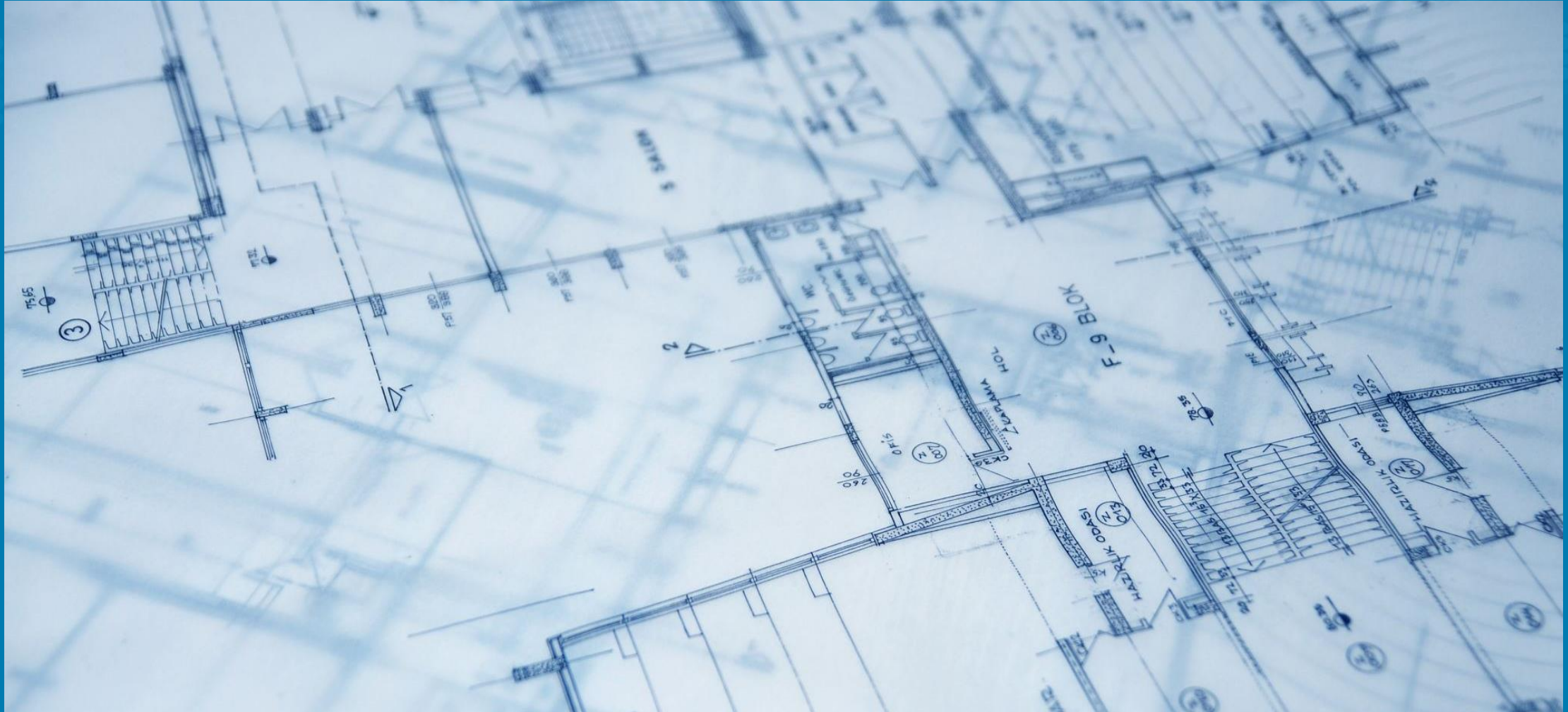
**Who here comes from
an Engineering
background?**

Sometimes we think that building software is like building a bridge



But this isn't quite right!

Building software is like making a blueprint



**Code is just a very detailed
specification document**

**Writing software is
translating intent into
a descriptive specification
that produces a useful application**

Communication is hard...

... and we
don't want
THIS



How the customer explained it



How the Project Leader understood it



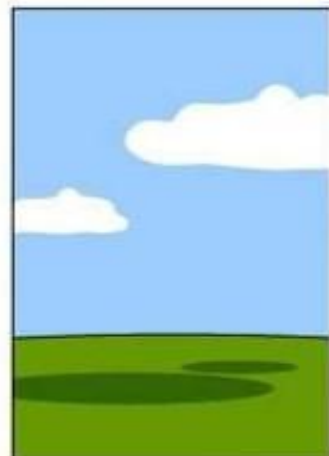
How the Analyst designed it



How the Programmer wrote it



How the Business Consultant described it



How the project was documented



What operations installed



How the customer was billed



How it was supported



What the customer really needed

The software solves the wrong problem

The software is too complex or confusing

The budget is exceeded before useful software is produced

Let's talk tactics...

Early feedback is key!

Put things in the hands of real users to try, as soon as possible

Tackle risky problems first

Be prepared to change direction

WETA for CityEdge Alliance

Early prototypes

**We deferred parts of the application
which would slow down feedback**

Weekly direction meetings

Knowing when to drop and add scope

Understanding the lifetime of the application

Communication is key!

Working software is the most efficient way of communicating the specification

**Shorter the feedback loops make
miscommunication cost less**

**We love solving problems
with software.**

Tell us yours

 0800 552 551  hello@companyx.nz  www.companyx.nz