

Empowering Arcadians: Leading the AEC Industry Into an AI-Driven Future

BST Global AI Summit 2025

Freek Matheij - Arcadis

7 May 2025

Agenda – navigating AI transformation in AEC



Introduction



Act I: Our Approach



Act III: Tech



Act II: Model



Act IV: Talent

Introduction: AI + CitDev, Reshaping How We Work

The pace of change is real. GPU performance, cloud scale, and LLM capabilities have accelerated rapidly. But this isn't just about hardware. It's about reimagining *how* work happens — across roles, processes, and entire project lifecycles.

And the journey is only starting...

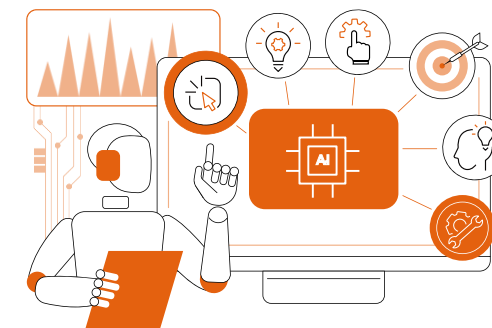
86% of firms say AI will transform their business by 2030

This isn't just about tools. It's about transformation — of talent, workflows, and operating models.

While 83% of global directors or higher said that their company was implementing a citizen developer program



The global AI Boom



AI Agents are here

Tech giants like **Microsoft**, **OpenAI**, **Google**, **Meta**, **Mistral**, and **DeepSeek** are racing to lead the age of *agentic AI* — systems that plan, learn, and act independently. This is no longer about assistive tools. It's the **rise of AI that executes**.

[Read more](#) 

Scaling is underway

Enterprises like **Shell**, **Accenture**, **Oracle**, and **PwC** are embedding GenAI across operations — with billions in investment and governance at scale.

[Read more](#) 

Enterprise adoption is real

GenAI now enables **individuals to match the output of entire teams**. Studies by Microsoft + Wharton: AI paired with structured workflows delivers **maximum ROI** through faster decisions and greater productivity.

[Read more](#) 

... However, many organizations are not well prepared yet to fully capitalize on the value and benefits of AI.

The rise of citizen development globally

The AI & Citizen Dev revolution isn't just technical — it's organizational. Scale depends on trust, talent, and transformation.

From Pilots to Platforms



Shell has successfully scaled its citizen development initiative, known as the "DIY" program, to over 4,000 active developers. This program is supported by a federated governance model and a dedicated Center of Excellence

“Shell has over 4,000 active citizen developers and 200 coaches, with formal IT-business collaboration frameworks.”



Forrester Research: 83% of global director-level developers or higher said that their company was either implementing a citizen developer program or had plans to do so in the next 12 months (i.e., what was once naive, then innovative, and then trendy is now normal and accepted).

From Control to Governance



Gartner proposes a zoning model — Green, Yellow, and Red — based on business criticality and application complexity:

“Mitigate shadow IT risks by working with business unit leaders to enlist citizen developers to establish trust and define safe activity zones.”

“Enable self-governing citizen development practices by fostering a community of practice across business units and with IT.”

From Gatekeeping to Enablement



Forrester emphasizes the shift in IT's role from control to enablement, highlighting the importance of governance in scaling citizen development.

“The role of IT is evolving — from building solutions to enabling innovation at scale”

Poll Question

Take a moment to reflect on your organization's position. Where are you today in this journey?

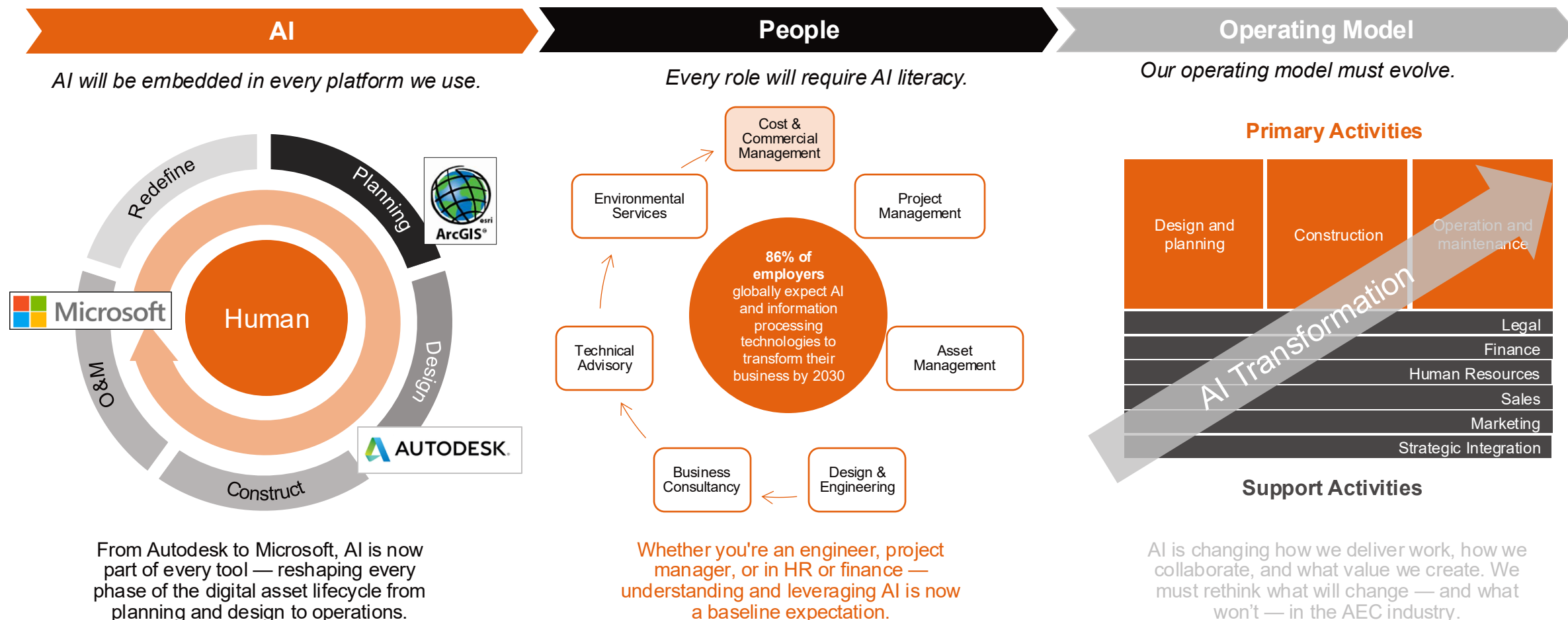
Citizen Development refers to empowering non-IT professionals to build digital solutions – such as apps, workflows, or AI tools – using low-code, no-code, or AI platforms, without IT support.

Before we move forward, we'd love to hear from you. Where does your organization stand today when it comes to enabling non-IT teams to use low-code and AI as part of a citizen development strategy?

- Don't know
- Implemented and currently expanding
- Implemented but no immediate plans to expand
- Implementing
- Planning to implement in the next 12 months
- Interested but no immediate plans in the next 12 months
- Not interested

AI is not a future trend—it's a now reality reshaping work...

The industry is at a tipping point—technology, talent, and operating models must evolve to stay competitive.



We will need to match vastly **different clock speeds**

Tech won't be the hard part —
people and organizational change will.

*“For every dollar you invest in Tech,
invest two dollars in people and
change” (BOI)*

A diagram on a dark orange background with a blurred image of a hand pointing at a screen. Three horizontal white arrows point to the right, each associated with a label and a time scale. The top arrow is short, the middle is medium, and the bottom is long, visually representing the increasing time scales from AI to the Operating Model.

AI

in seconds/minutes

People

in weeks/months

Operating
Model

in months /years

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Arcadis: Scaling Digital & Sustainable Impact in AEC

Arcadis

€3.7B
revenue
(FY2024)

Operating
30+
countries

1%
Globally for
ESG

Improving
quality of
life

Delivering
40,000+
Projects/year

36,000+ + professionals, 135-year legacy

serving public and private sectors

Top 1% Globally for ESG Performance

Purpose: Improving Quality of Life

Projects/year across four global business areas: **Resilience, Places, Mobility, Intelligence**

AI-Enabled Products. Scalable Delivery. Skilled Workforce.

Digital Products
Driving Client
Value

- Enterprise Decision Analytics (EDA),
- Net Zero Catalyst, Bridge Health, Climate Risk Nexus, CurbIQ

Empowered by
AI & Low Code
adoption

- 2,000+ Arcadians trained as Citizen Developers
- AI embedded via ArcadisGPT, Autodesk Assistant
- Visual programming and automation in design workflows

**AI + Human
Collaboration**

- Enhanced productivity
- Focus on scalable delivery with GECs

**Digital
Upskilling for
all**

- Skills Powered Organization: 15.000 Arcadians
- AI Training: 5000 Arcadians by 2025
- *Focused Upskilling: 500 Arcadians in Q2 2025*

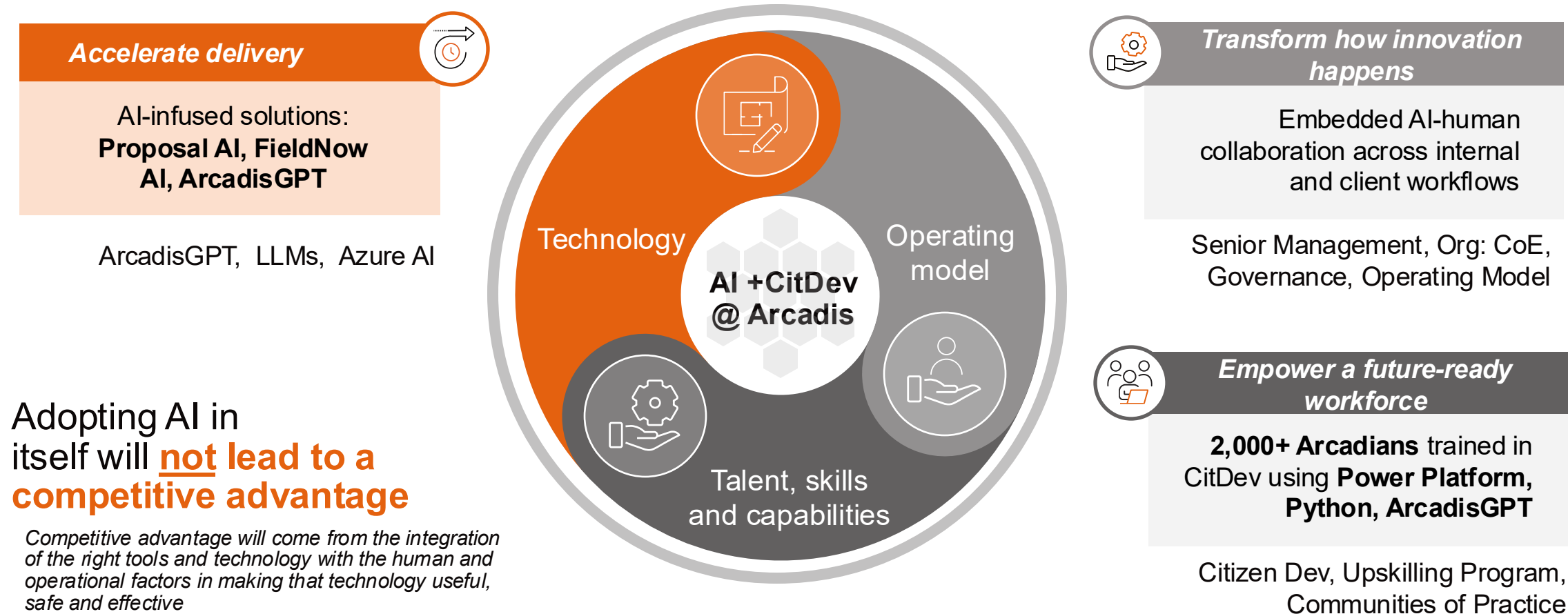


Through digital and human innovation, we can unlock the benefits of technology for our clients – and empower our people to do more fulfilling, creative work.”

—Alan Brookes, CEO

Our Model - Finding the Right Balance

The Arcadis Model: Scaling AI & CitDev Through Tech, Talent, and Operating Model



Our Approach – Three Pillars

Across each pillar — platforms, talent, and operations — we’ve built the foundations to move from experimentation to **end-to-end value creation**. Here’s how we’re doing it at Arcadis

AI-Infused Platforms & Partnerships



We’re investing in interoperable, connected platforms— not isolated pilots. Interoperable platforms – AI Platform, Citizen Development Platform, (Design) Automation Platform, ACC (AI)

Talent, Skills & Capabilities



A strategy is only as strong as the people who deliver it. That’s why we’ve trained 2,000+ Arcadians, built a citizen development and separate AI network, and embedded AI skills into everyday roles — aligned with global compliance standards like the EU AI Act.

Operational Model



We’ve operationalized AI through a dedicated AI Center of Excellence reporting directly to the C-suite. This isn’t experimentation — it’s **enterprise-grade innovation**, with **safety, scalability, and business outcomes** at the core

Our success with Citizen Development has proven that when you combine the right guardrails with enablement and empowered teams, innovation becomes scalable, safe, and impactful

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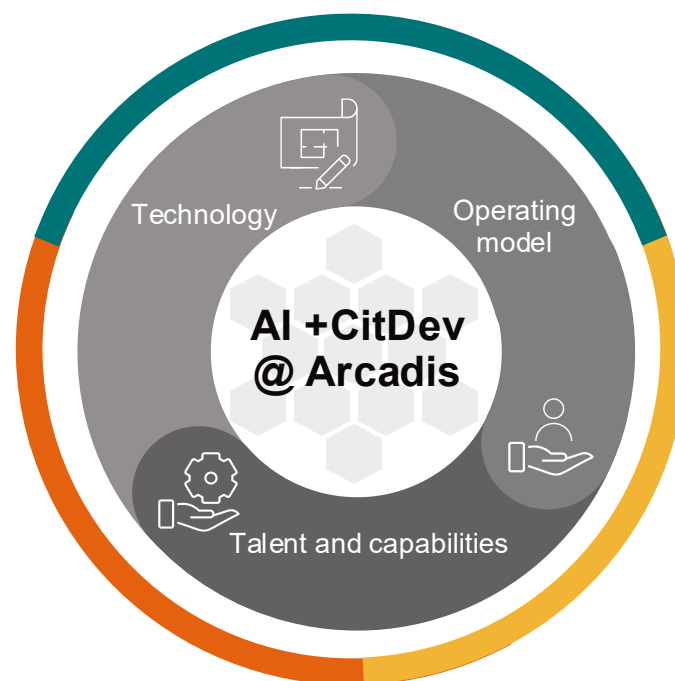
Act IV: Talent

Governance. Enablement. Self-Service

Digital Governance



Zoning, Playbooks, CoEs



Strategic Enablement

C-suite support, CoE Training, Community, AI Literacy



Self-service

CitDev Hub, Platforms, App Store, Automations



These aren't separate initiatives. They're embedded into the DNA of our operating model — governance ensures safety, enablement empowers people, and self-service accelerates innovation.

Center of Enablement (CoE)

Driving scalable citizen development with security, speed, and community at the core.



Approved Platforms

Defines the goals, guardrails, and ambition of your citizen dev strategy.



Secure by Design

Ensures apps are safe, compliant, and governed — without slowing down innovation.



Tech Enablement & Consult

Provides toolkits, platforms (like Power Platform, ArcadisGPT), and integrations.



Community Growth

Nurtures early adopters, runs events, and scales a grassroots maker movement.

The IT operating model is shifting

The CoE is the new platform layer of IT — not building the apps, but enabling everyone else to



Citizen Development Hub

- 1,050 Active Solutions
- 270 Monthly Users



Low-code Platforms

- 3,700 Active Apps, 20,600 Active Flows
- 900 Power BI publishers monthly



AI Platforms

- 100% MoM increase in ArcadisGPT usage
- Adoption of 4o as standard in ArcadisGPT



Training and Learning

- 2400 started, 400 completions of the AI Training 500 Participants for the Upskilling 2025



Financial

- Managing Licencing Costs (MSTF Copilot)
- Azure Costs (AI models)



Security

- 20% of accesses to ChatGPT redirected
- 200+ AI websites or applications blocked



IT Operations

- 50% Improvement in time to resolve tickets
- 4.2/5 Feedback score

Driving scalable citizen development
with security, speed, and community at
the core



Governance is intelligence based, not one size fits all



Enablement and speed can coexist with control



The CoE and IT org shift from gatekeepers to platform enablers



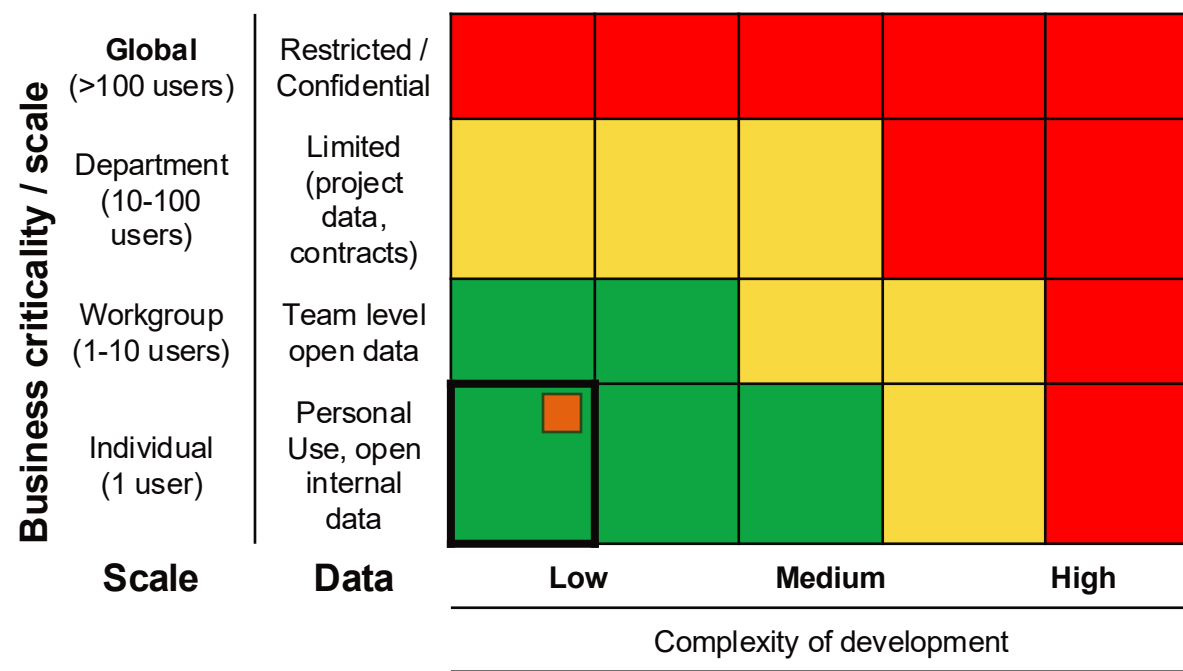
Indicate that all tooling must come from the Appstore:

- Power Platform, ArcadisGPT, DEAS, ESRI, Smartsheet, Airtable
- Blocked if not approved



All new solutions start in the Citizen Development Hub

Auto-triaged into Green, Yellow, or Red with data and business criticality checks



IT Zoning Model



Safe Zone: Self-Governing



Supported: Co-created with Professional Developers and Adoptive Governance



Danger: Require Tech Oversight and Governance Before Release

Citizen Development Hub: Self-Service with Smart Governance



Governance Built

Shows that governance isn't an afterthought — it's native to how solutions are created, classified, and scaled (e.g., risk matrix, solution zones).



Security & Compliance

Emphasizes auto-checks for sensitive data, access levels, and approvals baked into the system.



Templates & Reuse

Aligns with your “pre-built components,” reuse support, and lifecycle tracking. Encourages quality over quantity.



Personal Growth & Recognition

Tracks developer impact, assigns scores, and links to visibility across the org — turning app creation into a growth path.

ARCADIS

MENU

Manage

Create

Explore

Community

My Profile

SUPPORT LINKS

Help Guide

Tech in 60 Seconds

Send Feedback

Report Issue

TOOLS & UPDATES

Settings

Change Log

Ask Copilot

Hello, Freek Matheij!

Overview

Action Items0

Solutions0

Risk ProfileN/A

Search via CDH Solution name

Select Status

Select Risk Profile

Create Solution

CDH Solution Name

Start Date

Environment

Remaining Days

Action Items

Total Apps3.721K

High Risk 47
Medium Risk 504
Low Risk 3.17K

Total App Owners641

High Risk 19
Medium Risk 159
Low Risk 578

Conditions:

Scale:

- High - More than 100 viewers, shared with more than 100 people, or shared with external + shared with more than 10 users.
- Medium - More than 10 viewers, shared with more than 10 people, shared with tenant or shared externally.
- Low - Shared or viewed by less than 10 people.

Complexity:

- High - Store or process personal data*
- Medium - Uses on premises connections
- Low - None of the above

*Access to personal data can only be determined by Apps assessed in the Citizen Development Hub.

Solution GBA (CDH)

Owner's GBA

Owner's Country

Classification

Scale

Complexity

Arcadis Apps Risk Matrix

High	410	9	47
Medium	167	2	10
Low	2981	22	73

LowMediumHighComplexity

High Risk App Owners

sheena.verdad...	20
phoebe.bacerra...	5
alvil.baibuenaa@...	3
sa_o365digital@...	3
kristian.delgado...	2
andrew.miraflore...	1
christina.espejon...	1
gecspadmin@ar...	1

CDH

App Name

Classification

Scale

of Viewers

Users Shared

Shared Externally

Shared with Tenant

Complexity

Personal Data

PII

Uses Gateway

✓ [AM] 011 - Solicitação de Faturamento

Medium

High

183

101045

True

True

Low

✓ [AM] Fundo Fixo

Medium

High

120

101039

True

True

Low

✓ [DM] Solicitação Seguro Garantia - Financeiro

Medium

High

21

101038

True

True

Low

✓ [FT] 010 - Equipes de Campo - Cofia

Medium

High

122

101040

True

True

Low

✓ [FT] 010 - Portal TKI

Medium

High

19

101037

True

True

Low

2261

48

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ArcadisGPT: Embedded Intelligence at Scale



Time savings of 3.5 hours per user per week



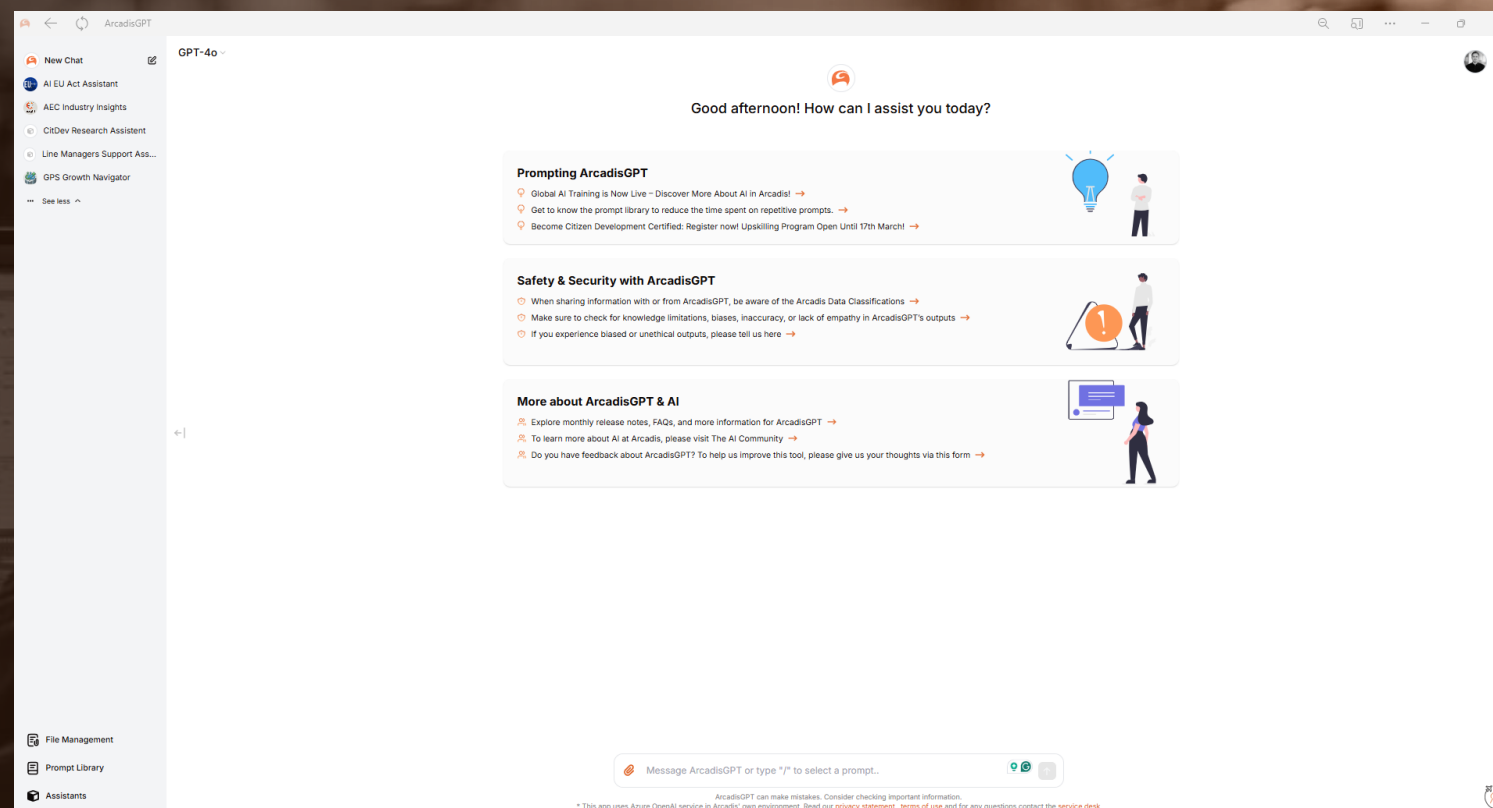
2.5M+ AI-Platform powered interactions in the last 30 days



ArcadisGPT reaching 15,000+ unique users during last 30 days



Embedded within our AI training program



Generative Design and Visualization Workflow

Problem Statement



Generative design tools enable the rapid creation of hundreds of design variations — but producing high-quality visuals for all those options is time intensive and often unfeasible.

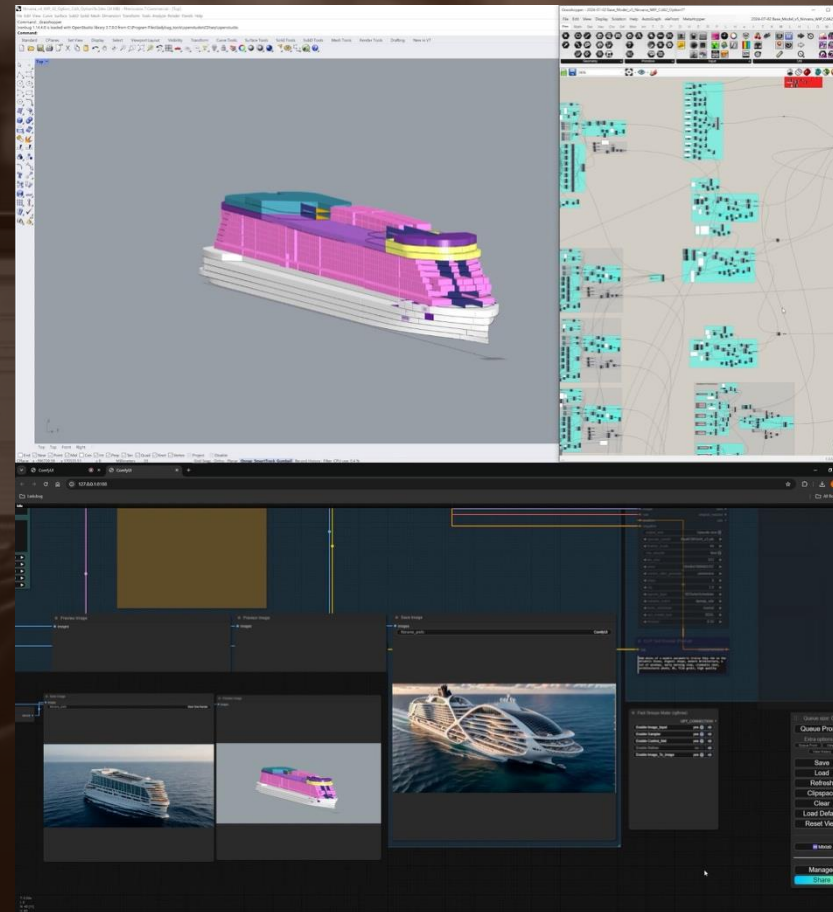


Common AI image-generation tools lack precision — they distort scale, dimensionality, and material logic, making them less suitable for architectural and urban design use cases.



Traditional workflows (CAD, pen and paper) are too slow for the rapid pace of early-stage design ideation and rely on limited visual references.

Solution: Integrating Stable Diffusion with Grasshopper



Autodesk Assistant within OTL Optimizer

Problem Statement



Difficult to access and interpret 3D model data efficiently

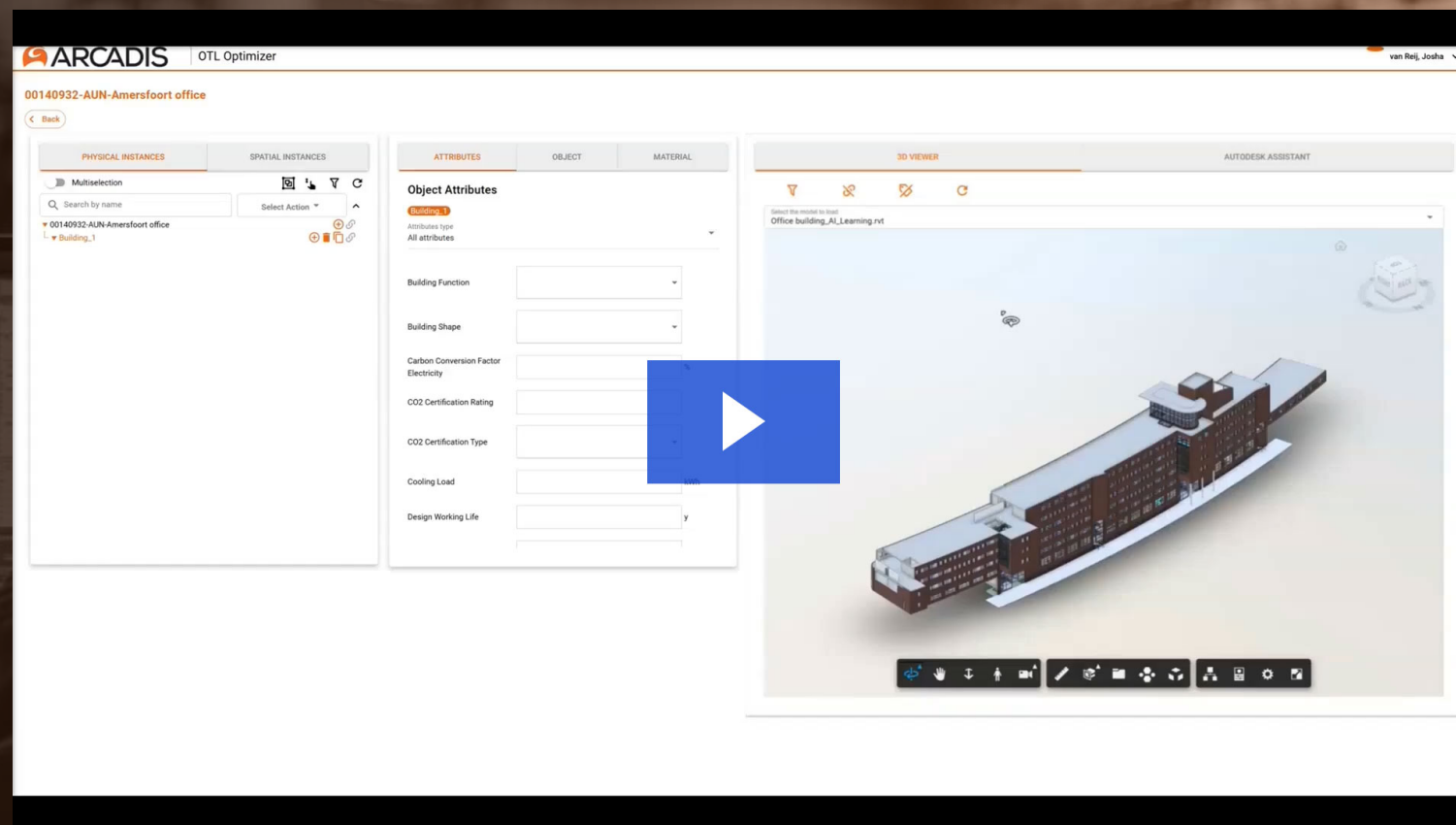


Manual effort needed to identify, validate, tag, and extract information



Limited ability to search and interact with geometry based on data

Solution



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AI Literacy is a key differentiator

“ *The greatest untapped asset in an enterprise today is the ingenuity of its people* ”
 -- Tom Davenport, *All Hands on Tech – The AI-Powered Citizen Revolution*

AI Skills are a competitive advantage

Transformation of skills

Gartner predicts that by 2027, 60% of labor hours will be disrupted, shifting focus to skill-based structures over traditional job positions.

Gartner

Read more



AI Literacy is essential

This is supported by LinkedIn data showing that **AI hiring has been rising 30% faster than overall hiring since last fall**. Additionally, LinkedIn's COO stated that fluency in AI skills is increasingly a topic in job interviews, reflecting the growing demand for AI proficiency

LinkedIn

Read more



AI above experience?

According to the “2024 Work Trend Index Annual Report” by Microsoft and LinkedIn, two-thirds of leaders globally would not hire candidates lacking AI skills. Furthermore, 71% of leaders stated they would prefer less experienced candidates with AI skills over more experienced ones without them

statista

Read more

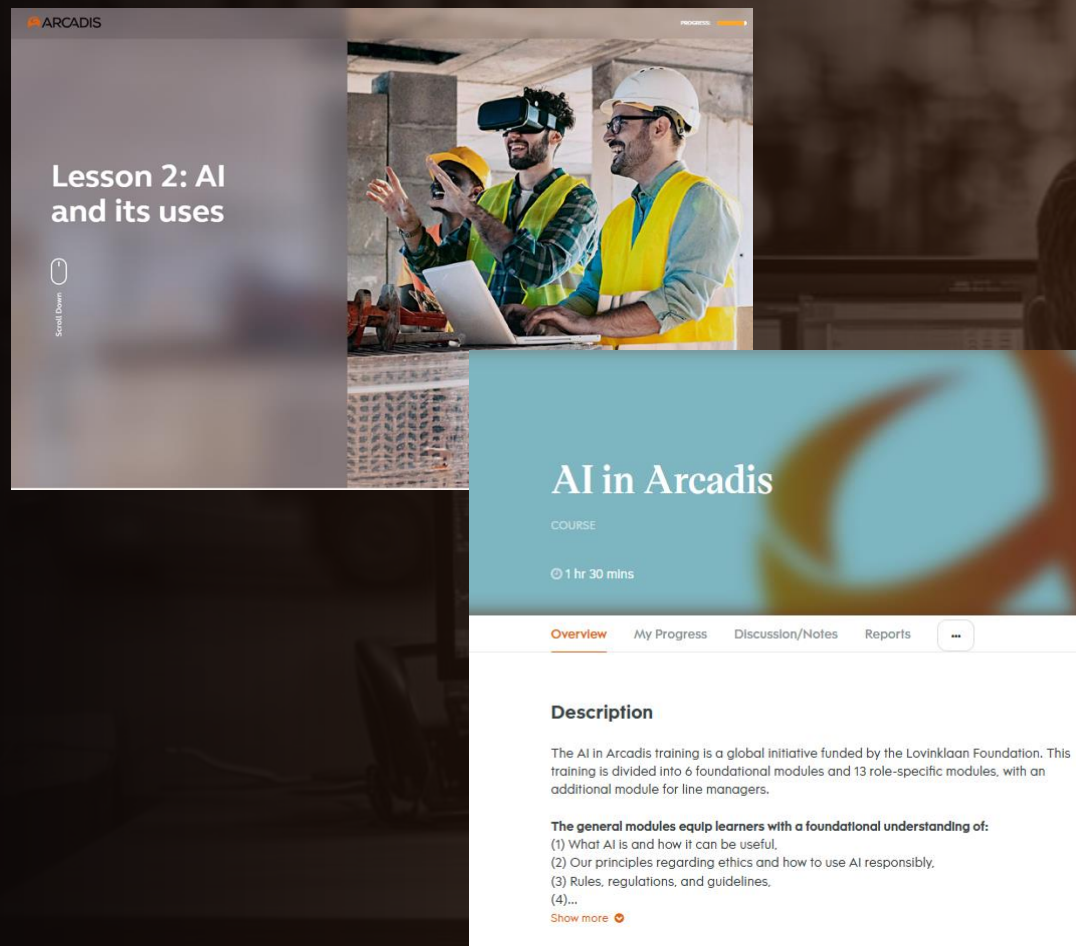


To enable this also means that IT needs to change its ways of working.

- “AI-skilled job seekers get hired faster.”
- “More than half of hiring managers wouldn’t hire someone without AI skills.”
- Emphasize: “AI literacy is the new digital literacy.”

Growing Skills: Arcadis AI Training

AI + CitDev are not new roles — there are new expectations for all roles.



Advisory



Architecture



Asset Management



Cost & Commercial Management



Digital



Design & Engineering



Environmental Services & Sciences



Finance



Legal, Compliance & Audit



Operations



People



Project & Program Management



Sales & Growth



Line Managers

AI Community: Change Management and Reaching Our People



2500 members in AI community



Monthly calls, first to receive updates



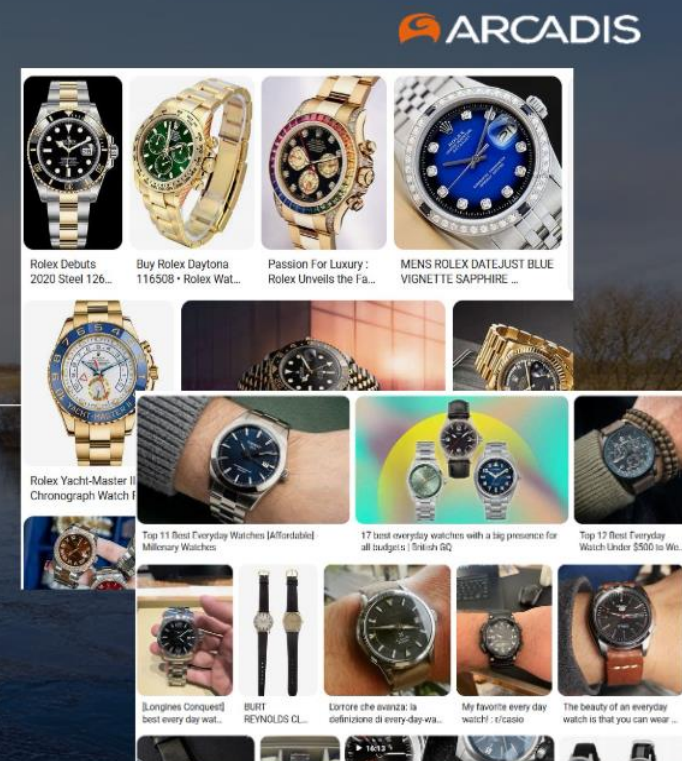
Demos, resources, and beta testing for enthusiasts



Community interaction and collaboration

Training Content Limitations

- Google "Rolex Clock", or any type of "Clock", "Everyday Watch", etc.
- You will see that most of these images show the time "10:10"
- This is the most aesthetically pleasing, visually balanced, and symmetrical appearance a watch/clock has
- Copilot has been fed information with over 300 billion tokens, but what if the information available is only of clocks showing 10:10... What would happen in a different, more impactful situation?
- Try this other prompt: "Generate the image of a watch being worn by a person", this image will most likely generate a man.
- **Implications:** Trained in English... What about knowledge in other languages? Have you ever noticed the difference between Wikipedia in English and Wikipedia in Spanish?



04/11/2023

AI Community slide explaining training limitations and AI response bias

Lead the change – together

At Arcadis, we're investing not just in AI, but in our people —
Fostering design intelligence, citizen development, platform governance.
Join us — as leaders, as builders, as partners — to shape the next decade of our industry.
The decisions we make in the next **12–24 months will define the next 10 years of our industry.**

The future isn't about winning alone — it's about building together.



Freek Matheij

Global Citizen Development & AI Director

Thank you!

- Let's connect
- Let me know if you want to know more about AI and Citizen Development @ Arcadis