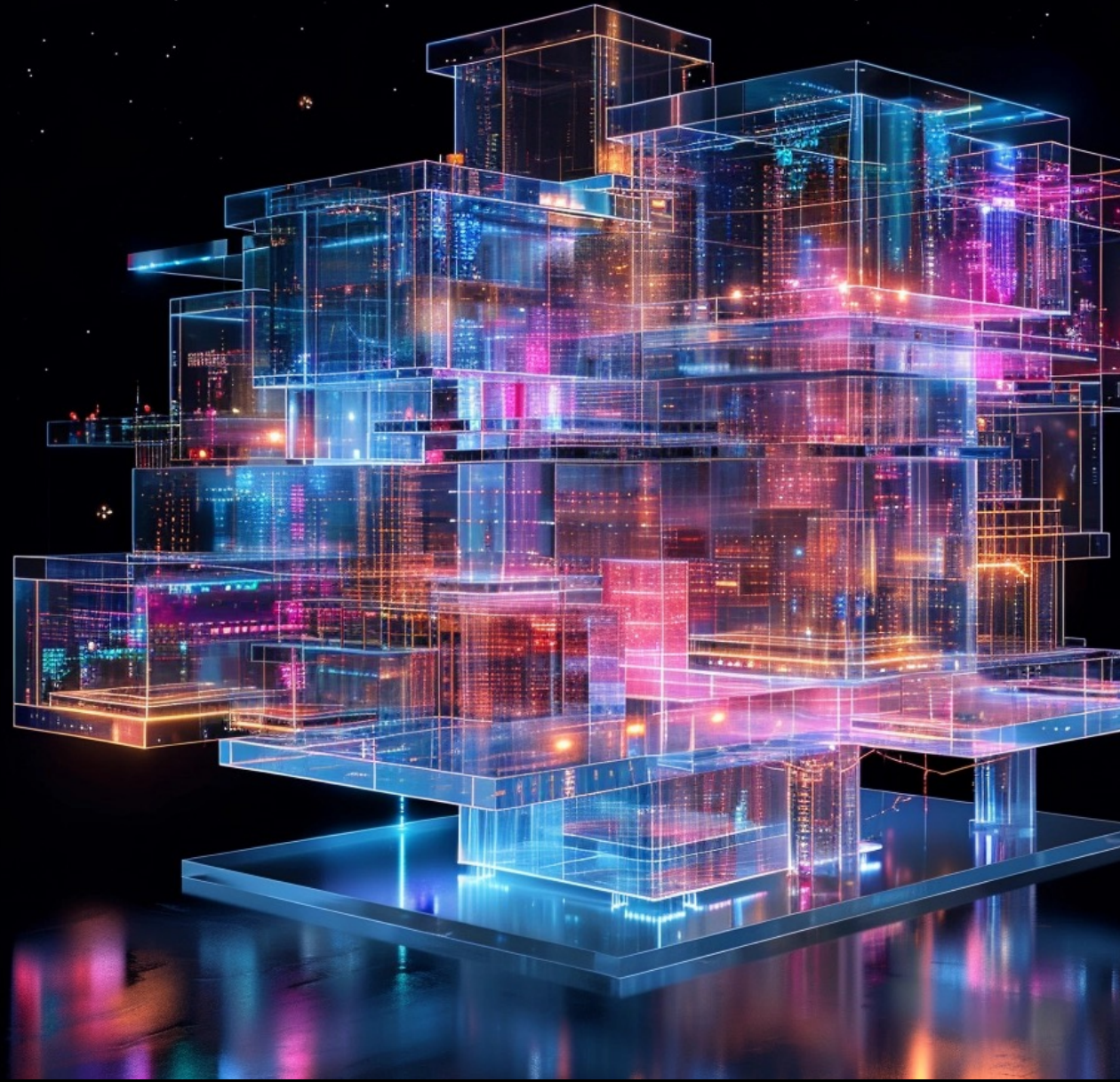


APRIL 2024

# The disruptive impact of Generative AI on the AEC industry

KUMAR R PARAKALA  
PRESIDENT, GHD DIGITAL



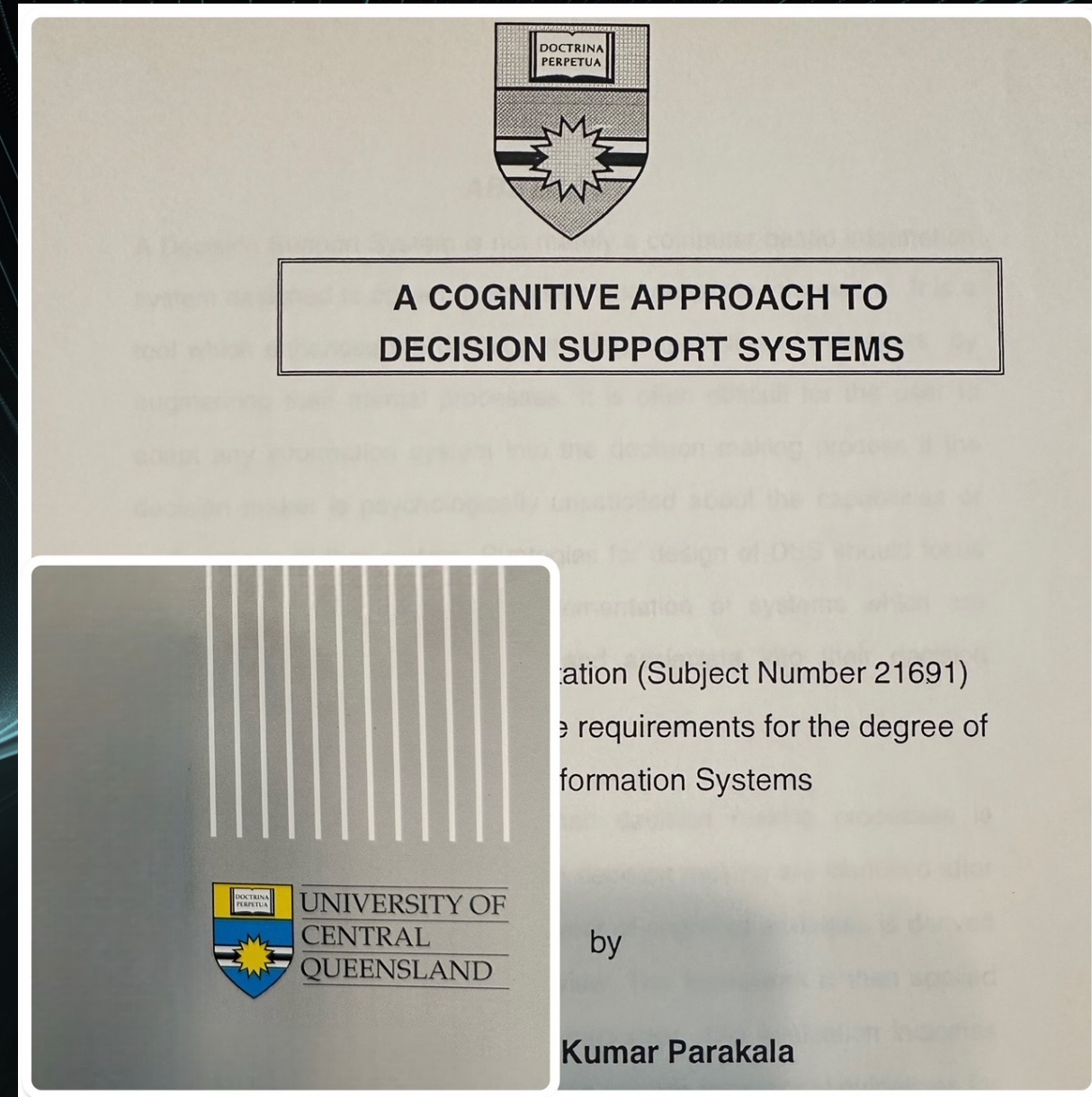


# The evolution of AI





# Cognitive Science and Computer Science

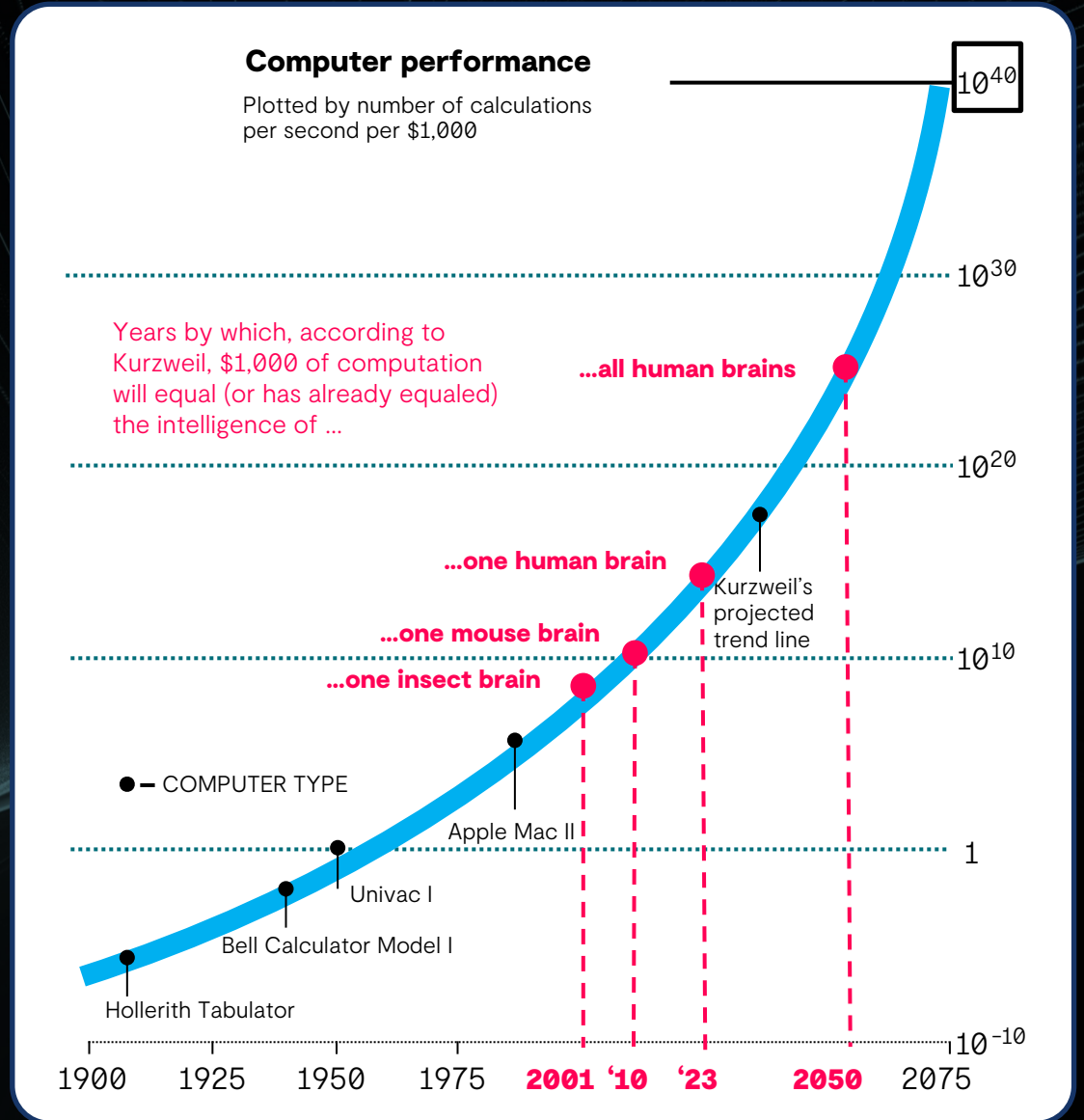




# Technology acceleration curve

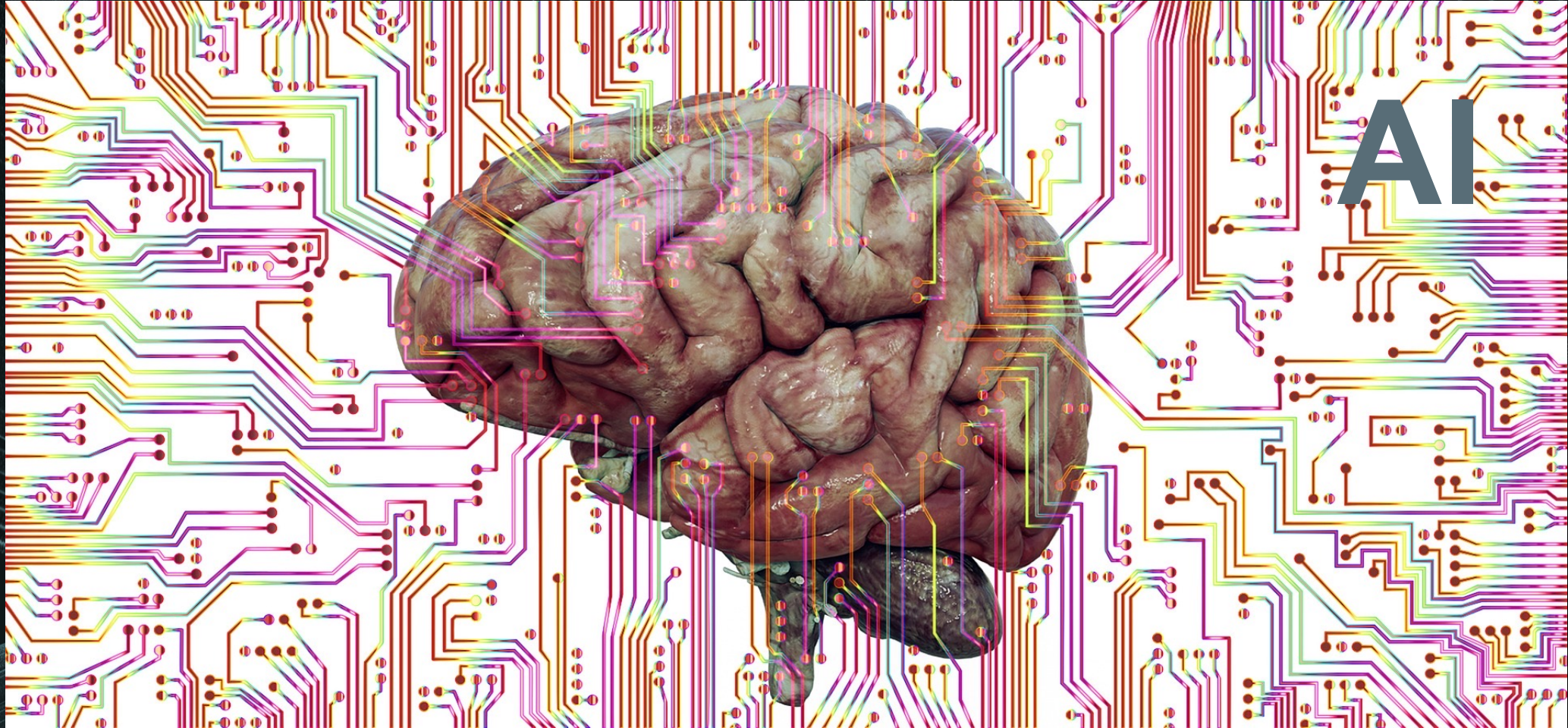
## THE KURZWEIL CURVE

Moore's Law is just the beginning. The power of technology will keep growing exponentially, says Kurzweil. By 2050, you'll be able to buy a device with the computational capacity of all mankind for the price of a nice refrigerator today.





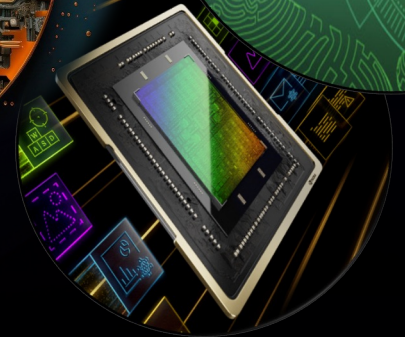
# From human intelligence to AI



AI

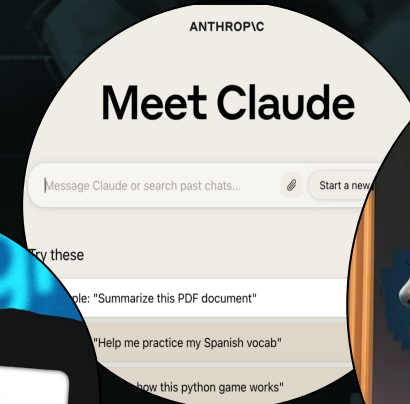


# Unforeseen advancements






# Gen AI models have taken the world by storm





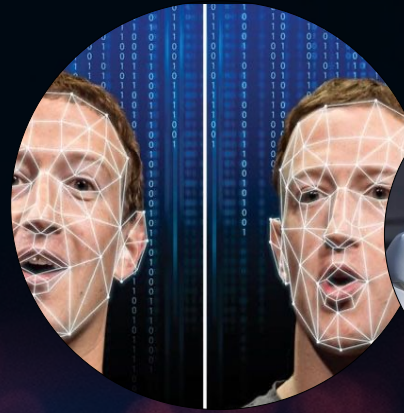


# ARTIFICIAL GENERAL INTELLIGENCE

$$IQ + EQ = AQ$$



# Future implications of AI





**ORIGINAL**



**EM HONEST**

**Y \*THIS\* ONE**

**DEEPFAKE**



**EM HONEST**

**Y \*THIS\* ONE**



# The Future of Life Institute

## Pause Giant AI Experiments: An Open Letter

We call on all AI labs to immediately pause for at least 6 months the training of AI systems more powerful than GPT-4.

[View this open letter online.](#)

Published  
March 22, 2023

PDF created  
May 5, 2023

Signatures  
27565

AI systems with human-competitive intelligence can pose profound risks to society and humanity, as shown by extensive research<sup>1</sup> and acknowledged by top AI labs.<sup>2</sup> As stated in the widely-endorsed [Asilomar AI Principles](#), *Advanced AI could represent a profound change in the history of life on Earth, and should be planned for and managed with commensurate care and resources.* Unfortunately, this level of planning and management is not happening, even though recent months have seen AI labs locked in an out-of-control race to develop and deploy ever more powerful digital



Anthony Aguirre

## Signatories

The below is a sample of the most prominent signatories. View the full list of signatories [here](#).

**Yoshua Bengio**, Founder and Scientific Director at Mila, Turing Prize winner and professor at University of Montreal

**Stuart Russell**, Berkeley, Professor of Computer Science, director of the Center for Intelligent Systems, and co-author of the standard textbook "Artificial Intelligence: a Modern Approach"

**Bart Selman**, Cornell, Professor of Computer Science, past president of AAAI

**Elon Musk**, CEO of SpaceX, Tesla & Twitter

**Steve Wozniak**, Co-founder, Apple

**Yuval Noah Harari**, Author and Professor, Hebrew University of Jerusalem.

**Emad Mostaque**, CEO, Stability AI

**Andrew Yang**, Forward Party, Co-Chair, Presidential Candidate 2020, NYT Bestselling Author, Presidential Ambassador of Global Entrepreneurship

**John J Hopfield**, Princeton University, Professor Emeritus, inventor of associative neural networks

**Valerie Pisano**, President & CEO, MILA

**Connor Leahy**, CEO, Conjecture

**Jaan Tallinn**, Co-Founder of Skype, Centre for the Study of Existential Risk, Future of Life Institute

**Evan Sharp**, Co-Founder, Pinterest

**Chris Larsen**, Co-Founder, Ripple

**Craig Peters**, Getty Images, CEO

**Tom Gruber**, Siri/Apple, Humanistic.AI, Co-founder, CTO, Led the team that designed Siri, co-founder of 4 companies





**Changing  
available  
intelligence**



**Changing  
how we live  
and work**



**Changes in  
social  
structures**

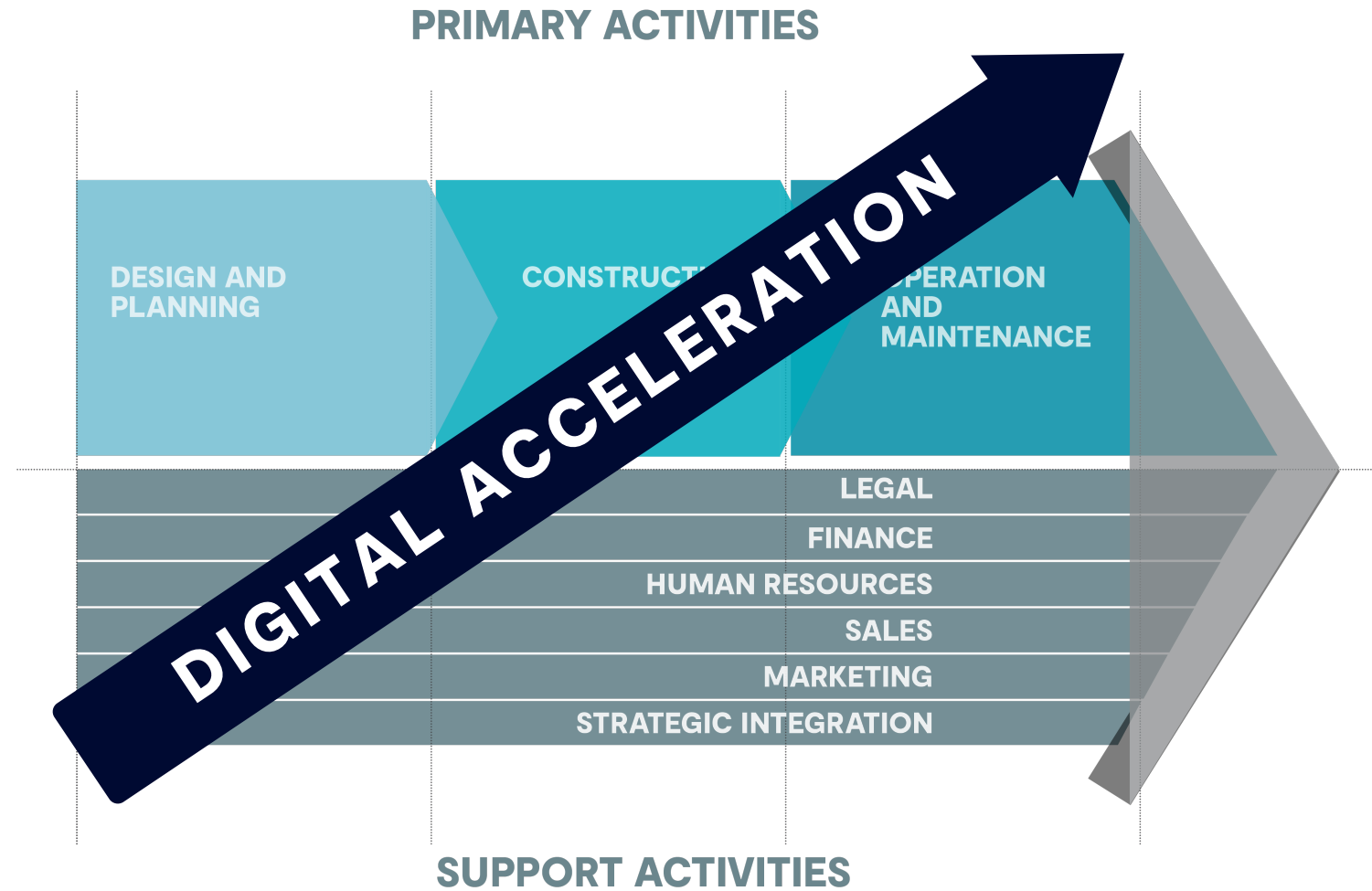


# Impact on the AEC Industry

The background of the slide features a photograph of two construction workers. They are wearing hard hats and high-visibility safety vests. One worker is holding a large set of blueprints, and the other is pointing at it. They are standing on a construction site with scaffolding and building structures visible in the background. The image has a color overlay, with a blue tint on the left and a yellow/orange tint on the right.



# The current AEC value chain





# Gen AI is changing the AEC industry



TIME & COST  
SAVINGS

01



INNOVATION

02



DECISION  
MAKING

03



SUSTAINABILITY

04



SAFETY

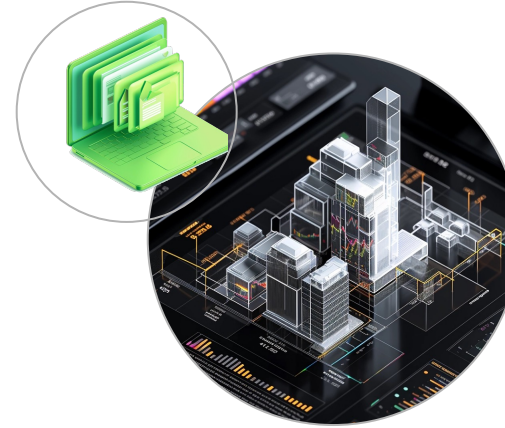
05



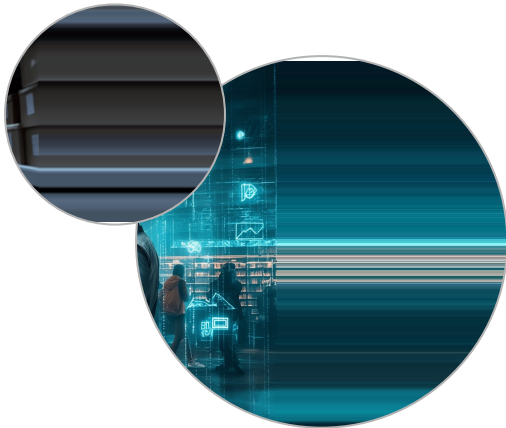
# How we are utilizing Gen AI to help GHD clients



Trailblazing road safety with multiple world firsts



CitiBot: A Govstack™ customer service assistant, similar to the ChatGPT experience for government agencies














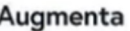















Our team have created a gen AI 'librarian' capable of processing and analyzing vast amounts of document data



Generative design takes digital urban planning to new heights near Abu Dhabi



# AI-powered tools for AEC

Planning & Programming	 TESTFIT  Archistar  delve  AIRWORKS  AURIVUS
Schematic Design	 Midjourney  VERAS  ARCHITECTURES  PLANALOGIC  maket
Design Development	 HYPAR  Augmenta
Construction Documentation	 SWAPP  BLUEPRINTS <sup>AI</sup>
Bidding & Negotiation	 TOGALAI  workorder
Construction	 OPENSOURCE  Kwant  CUPIX  nyfty.ai  SMARTVID.IO  HOLO BUILDER  CANVAS  DUSTY ROBOTICS  BUILT ROBOTICS
Post-Construction	 SightPlan  spaceti

Learn more: [www.aecplustech.com](http://www.aecplustech.com)



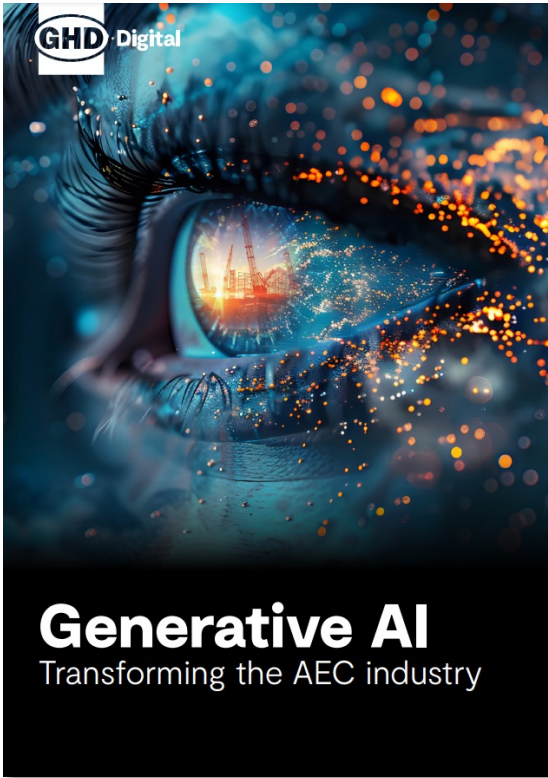
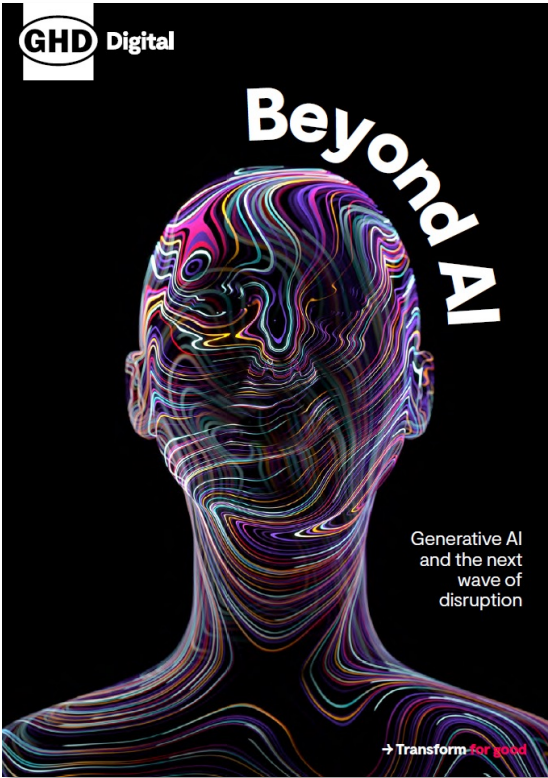
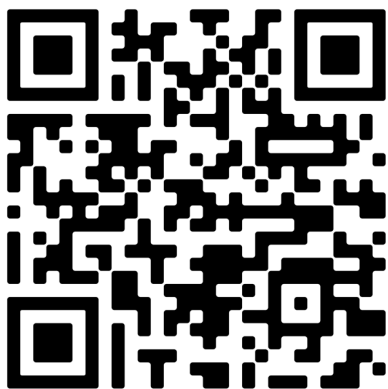
# The way forward



# Download our thought leadership

## Beyond AI: Generative AI and the next wave of disruption

A GHD DIGITAL PUBLICATION 2023



## Generative AI: Transforming the AEC industry

A GHD DIGITAL PUBLICATION 2024





# THANK YOU!

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