CESA
Consulting Engineers South Africa
INFRASTRUCTURE
Indaba
2023
Engineering the Future Now!
9 & 10 March
Durban ICC, KwaZulu-Natal

MANINGA ENGINEERING

SESSION 5: Leadership and Technology

Exploring augment reality

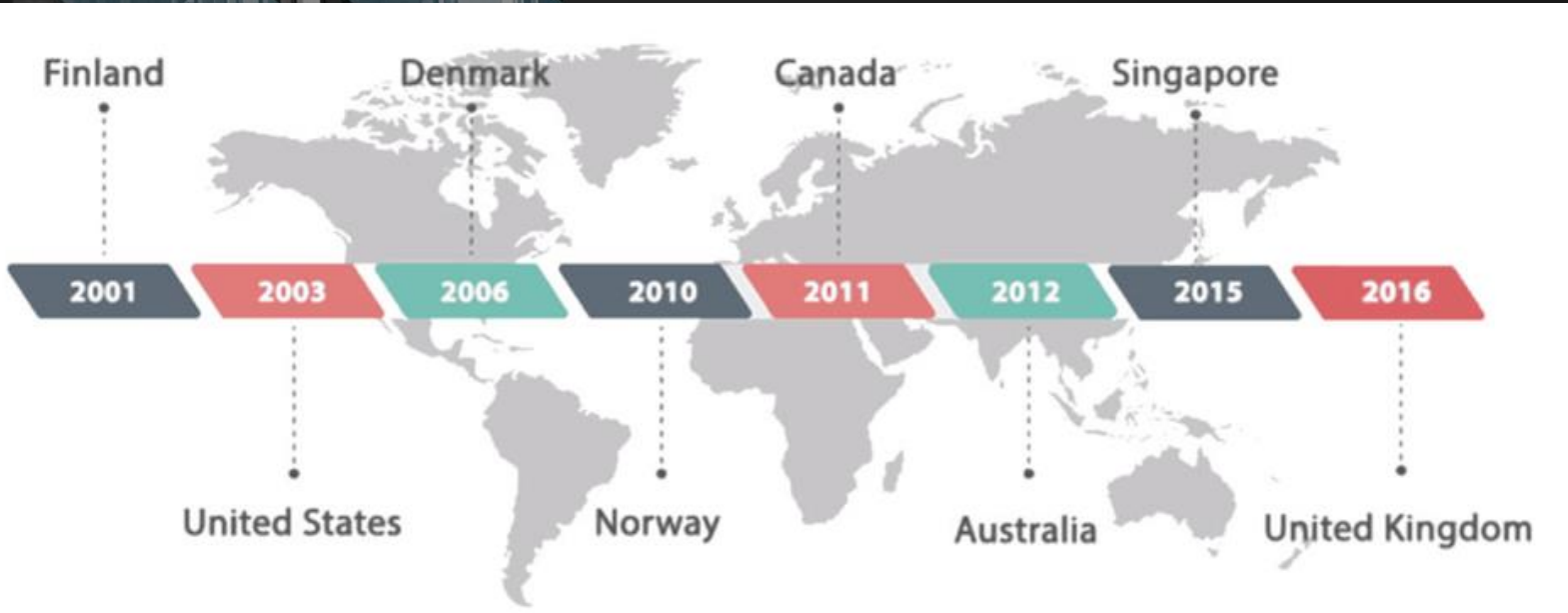
Sikhulile Nhassengo
Director Maninga Engineering,
CESA Technology and Engineering Innovation Forum
Committee Member

Building Information Modelling

- BIM is a set of technologies, processes and policies enabling multiple stakeholders to collaboratively design, construct and operate a Facility in virtual space

- The construction industry in Africa is slow to adopt the BIM process despite its numerous advantages.

Technology Required to sustain growth



Building Information Modelling (BIM)

- The drive towards Sustainable Building Design and High Performance in buildings is significantly growing.

BIM – Structure / Process Flow

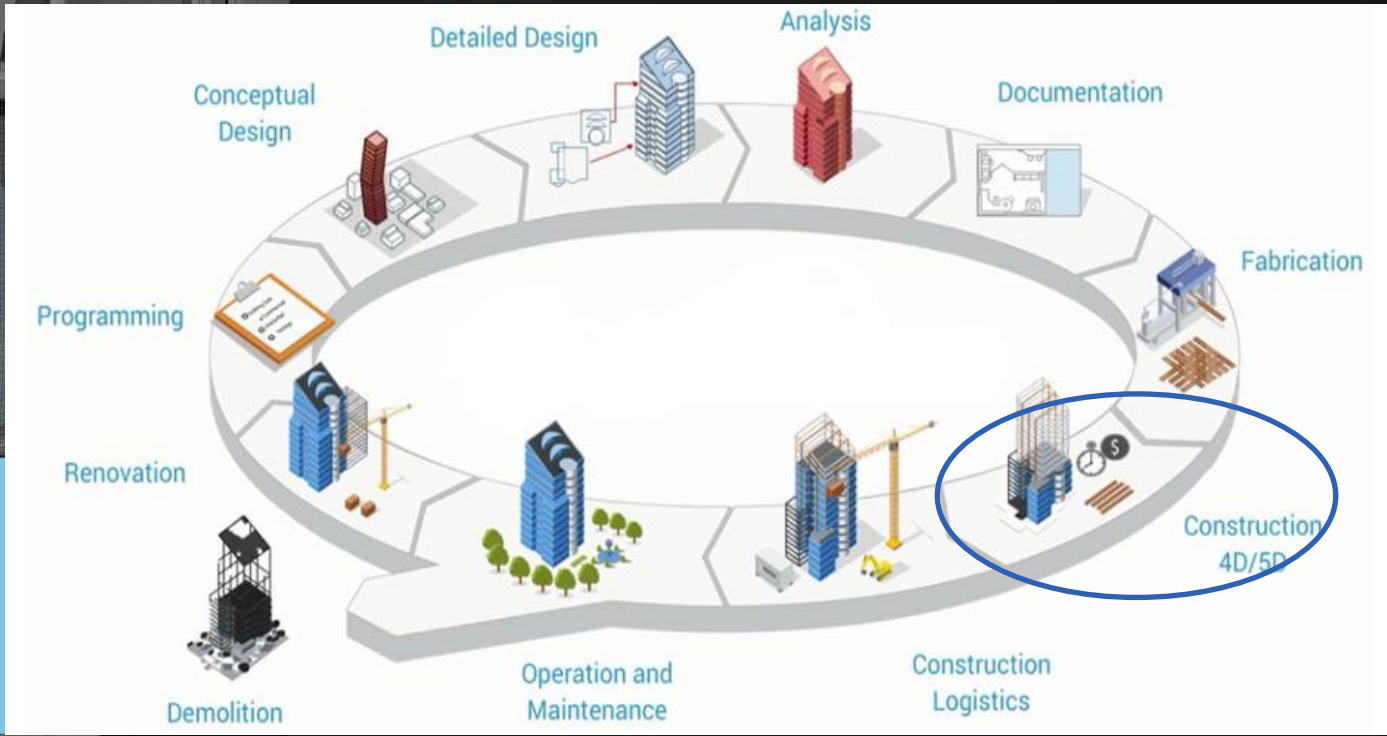


Figure 1. BIM Workflow (TheConstructor.orgby, Carol Dunn March 3, 2022)

BIM – Collaboration Software

Figure 2. BIM software to use in 2022 (Sébastien Lucas, Nov 20, 2020)

BIM – Software

Application of Augmented Reality

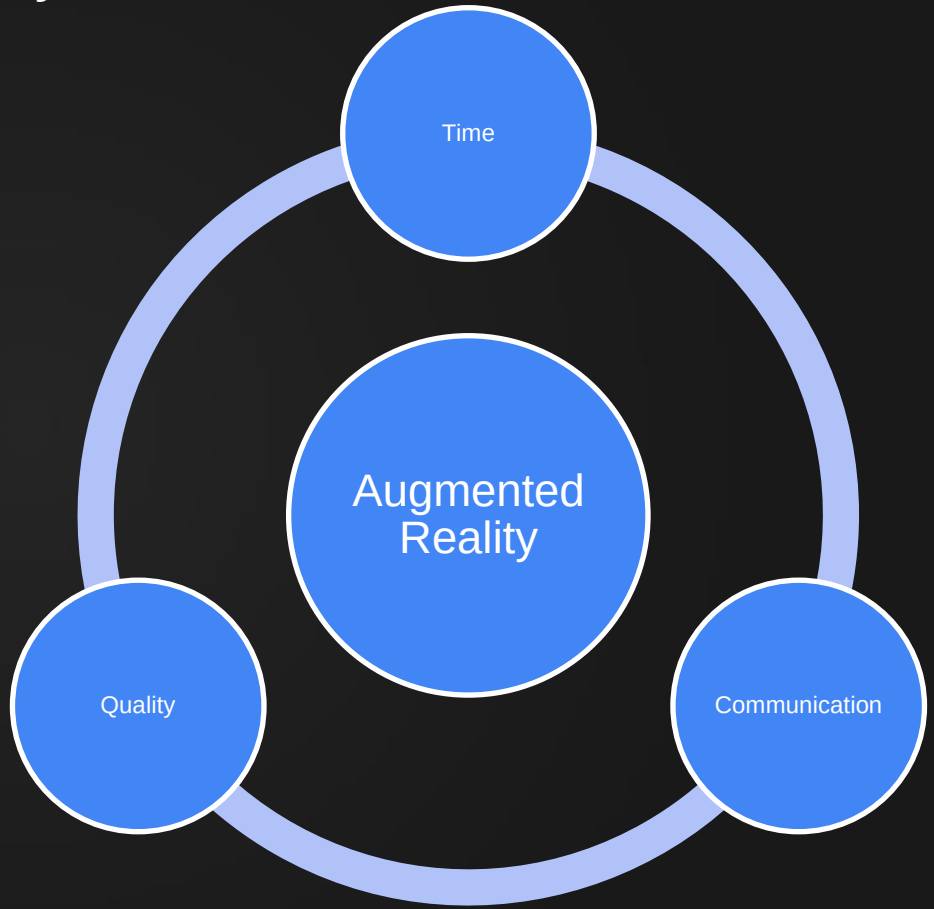
Burns Unit Project

The facility that treats people who have suffered severe burns and functions as a referral hub.

Also offers crucial training for all healthcare workers who have suffered severe burns.

Augmented Reality

Key Focus Area



Site Inspection – Actual construction versus Augmented reality

Engineers at Site

Project Engineers analysing the model for potential clashes

Site Inspection – Actual construction versus Augmented reality

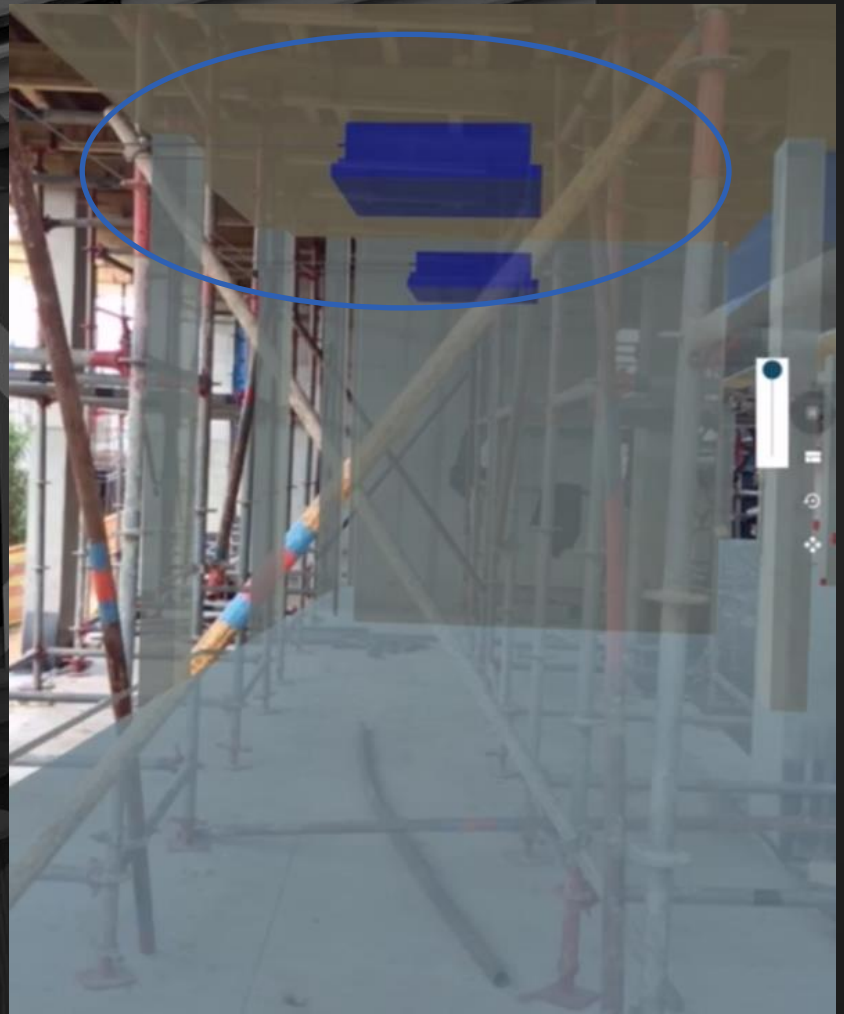
Water supply piping connections

Site Inspection – Actual construction versus Augmented reality

Water supply line passing through Column

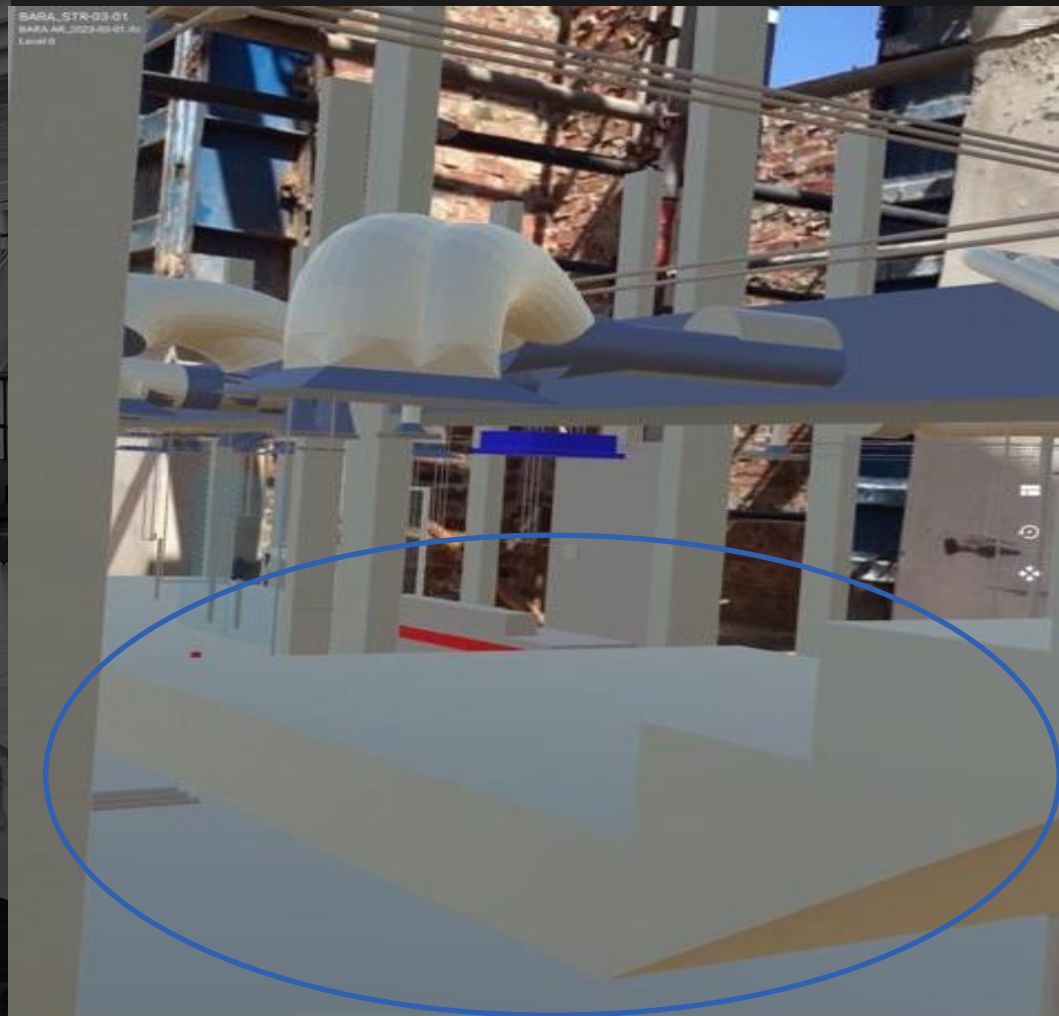
Lining up cassettes to the pillars

Site Inspection – Actual construction versus Augmented reality



Site Inspection – Actual construction versus Augmented reality

Clash detected with supply air being distributed on the staircase



Site Inspection – Actual construction versus Augmented reality

Medical Gas - Penetrations

Site Inspection – Actual construction versus Augmented reality

HVAC System aligned with casted column

Site Inspection – Actual construction versus Augmented reality

Project Setup

Select Project

Upload Model

3 Share Project

Invite users by their email address

Email *
Lungelo@maninga.co.za
Admin

Email *
sikhulile@maninga.co.za
Guest

Email *
caleb@maninga.co.za
Restricted User

Title (Required)
Clash

Description
Offset pipe clashing with colomn.

Revision Status
Open

Due Date
2023/03/09

Assign To
Lungelo Sibande (Maninga Engineering) ;

Floor
Ground floor

MANINGA
ENGINEERING

Thank you

Contact details:
Sikhulile Nhassengo
Director Maninga Engineering
sikhulile@maninga.co.za