



26 July 2024: Session 1

Our legacy *is* building

Understanding the Big Picture

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Image Credit: Davey, adapted from Sam Rohn (22 February, 2016)

How many buildings are there in the world today?


100 Billion Buildings in the World

of all types and sizes in the world.

This number includes **everything** —
from **huts to high-rises**.

The vast majority of buildings are located in Asia and

Africa

An aerial view of a city skyline, likely New York City, shown in a circular fisheye projection. The city is densely packed with buildings, and the surrounding area includes water and a clear blue sky with scattered white clouds. The image is centered and occupies the entire background of the slide.

In 18 months, the global building stock will exceed

183 Billion

Square Meters by 2026

Navigant Research (26 April, 2018)



Cities represent

3%

of earth total surface

75%+

of planetary climate
resources problems

creating buildings +
(mis)management

2024

A world map where landmasses are dark and city lights are shown as bright yellow and white dots, primarily concentrated in North America, Europe, and East Asia. A white bracket on the right side of the map points to the year 2050.

+90%

additional
urban population
will be in Asia and **Africa**

+1.3B people

a doubling population in Africa alone

80%

expansion in cities

2050

An aerial night view of a city skyline. The sky is a deep blue, transitioning to a lighter hue near the horizon. The city is densely packed with buildings of various heights and styles. Many windows are lit up, creating a warm glow against the dark sky. In the foreground, several large, modern buildings with glass facades are prominent. In the background, a tall, slender skyscraper stands out, along with other high-rise buildings. The overall scene conveys a sense of a bustling, modern urban environment.

200%

increase in building stock alone

This does not even include infrastructure works yet

2050

Yes, globally new buildings are more energy efficient, sure...but

80%

of buildings that will be standing by 2050

have already been built.



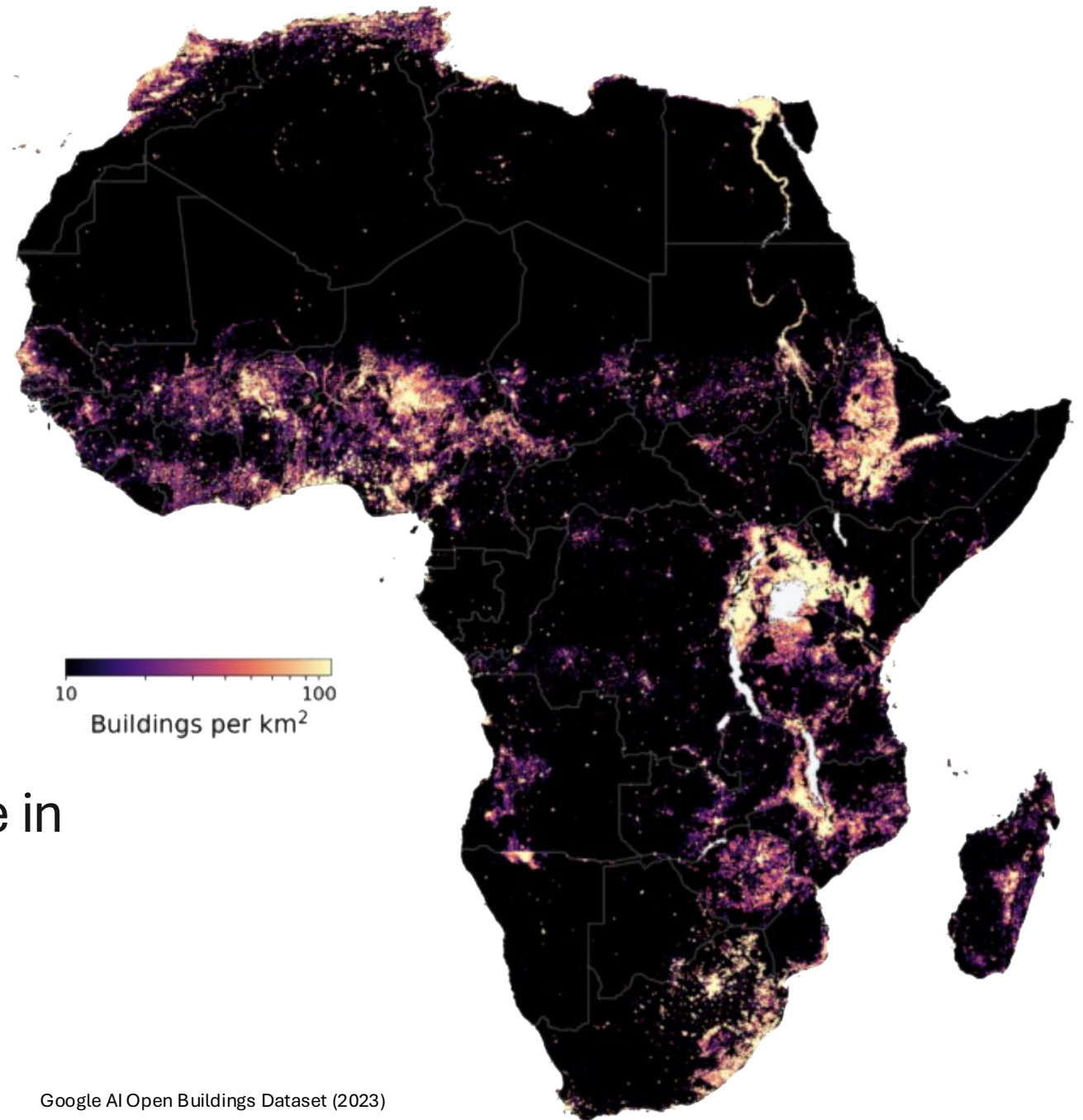
“We must prioritise upgrading the buildings we already have in order to avoid high embodied carbon emissions for decades to come.”


— Emily Parish, The Climate Group (12 August 2022)

In Africa,
the situation is reversed

In Africa,
100s

Smaller African cities double in
size every 20 years



A dramatic silhouette of a construction site at sunset. A large tower crane dominates the left side, its long jib extending across the top of the frame. In the foreground and middle ground, several workers are silhouetted against the bright orange and yellow sky, working on a building's steel framework. Scaffolding and structural beams are visible throughout the scene. The overall mood is one of active construction during the 'golden hour' of the day.

In Africa,
the situation is reversed

80%
of African building stocks are yet to be built

Lifecycle Math

Commercial Building Design (ave max)
3 yrs (dev & design) + 3 yrs (construction)

6%

designing & making of a building
(*physical + informational work*)

High-performing regions
9 months - 24 months = 4%

Merely 6% of a buildings life is in its
design and construction

94%

of its life lies in the use of building.
(*physical + informational work*)

Maintenance, operations, utilities,
deconstruction, upgrades, etc...

An aerial night view of a city, likely Cape Town, South Africa, showing a dense urban area with numerous lights. The foreground is dominated by the dark, bare branches of trees, creating a silhouette effect against the city lights. The sky is a mix of dark blue and purple, suggesting twilight or early evening. The city lights are a warm yellow and orange, with some brighter spots that create a starburst effect. The overall scene is a contrast between the natural, dark environment and the artificial, glowing city.

Where does our effort go to?

How do we spend our time when we work in the built environment?

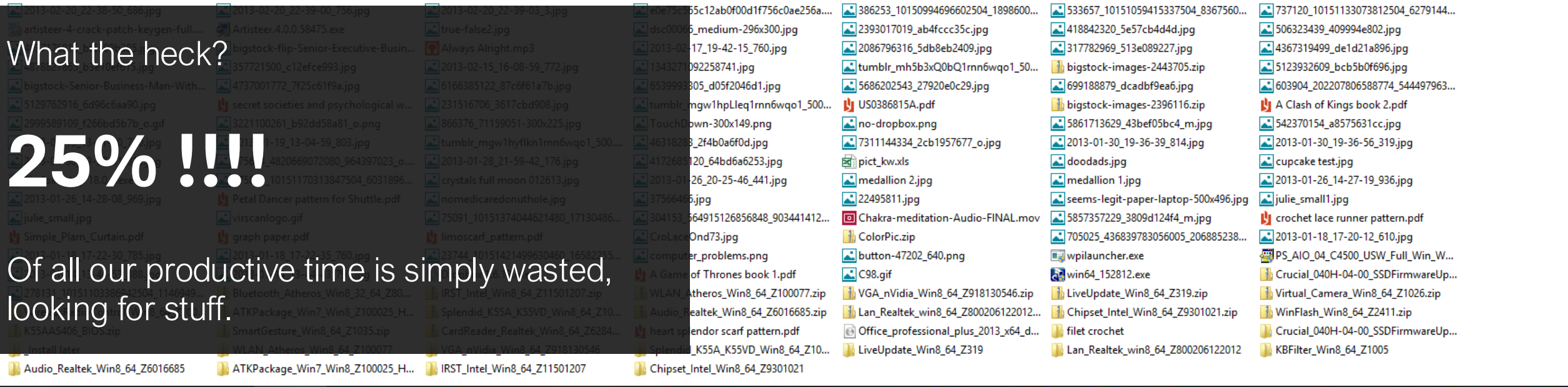
- The average employee spends 2.5 hours a day looking for information
- Adds up to 8.8 hours per week => than 1 full workday per person
- McKinsey found that employees spend up to 1.8 hours per day

- Jani Viljoen, BakerBaynes, Big 5 Construction, South Africa, June 2024

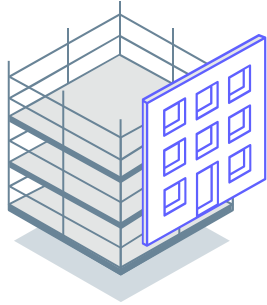
What the heck?

25% !!!!

Of all our productive time is simply wasted, looking for stuff.

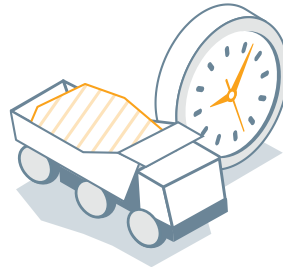


Impact of poor Information Management in Construction



\$280B/yr

Industry annual **rework costs** caused by poor project data and communication



35%

of **time** spent on non-productive activities by GCs



96%

Of all **data goes unused** in engineering and construction

- Source: FMI, Jani Viljoen, BakerBaynes, Big 5 Construction, South Africa, June 2024

The Cost of Constructions Data Dilemma

Material waste and schedule overruns are common concerns in construction and those challenges are only increasing in scale over time.

A recent study from Transparency Market Research projected that global construction waste will reach 2.2 billion tons by 2051.

And with mega-projects becoming increasingly common undertakings, McKinsey found that 77% of them are delivered at least 40% late.

GLOBAL CONSTRUCTION
WASTE BY 2025

**2.2 BILLION
TONS**

77%

OF MEGAPROJECTS
DELIVERED AT LEAST

40% LATE

In 2020, Bad Data Cost the Global
Construction Industry Over

\$1.84 TRILLION

14% of all Rework in Construction
Globally is Caused by Bad Data

An aerial night view of a city, likely Cape Town, South Africa, showing a dense urban area with numerous lights. The foreground is dominated by the dark, bare branches of trees, which are silhouetted against the city lights. The sky is a deep twilight blue. The city lights are a mix of warm yellow and orange, with some brighter spots that create a starburst effect. The overall scene is a high-angle, wide shot of a city at night, viewed from a hillside.

Where does our effort go to?

How do we want to spend our time when we work in the built environment?



Harambee.

Together.

We are building the digital commons for thriving buildings, cities, communities, and environments in Africa.



BIMCommunityAfrica

Before we Tech,
we must Culture.



BIM
Harambee
.Africa

1

Leave your badge at the door.

2

Do something good for someone else.

3

Take care of the future.

BIM Culture & Purpose

Before we BIM, ask Why?

Owner's Project Requirements

“Why do we want to work together?”

“How do we want to work together?”

“What and who are we building for?”



BIM Culture & Purpose

Before we BIMHarambee, first ask Why?

Owner's Project Requirements

“Why, how, what, and who are we BIM-ing for?”

- 1) To talk about BIM in Africa*
- 2) To practice BIM in Africa*
- 3) To demonstrate that new and better ways are possible*
- 4) To get new people to do better things in the built environment of Africa*

BIM Culture & Purpose

- BIM is **not** about perfect **products**, but about intelligent **processes**
- BIM => *Better Information Management*
- Lead and serve **others** through behavioural change within **our** work

To expose a **new generation** of African built environment practitioners to **process-driven** and **collaborative** ways of working together





Our goal is not to show you
“perfect BIM” but support you in adopting

BIM Behaviors

Collective Project Culture through BIM Technologies