



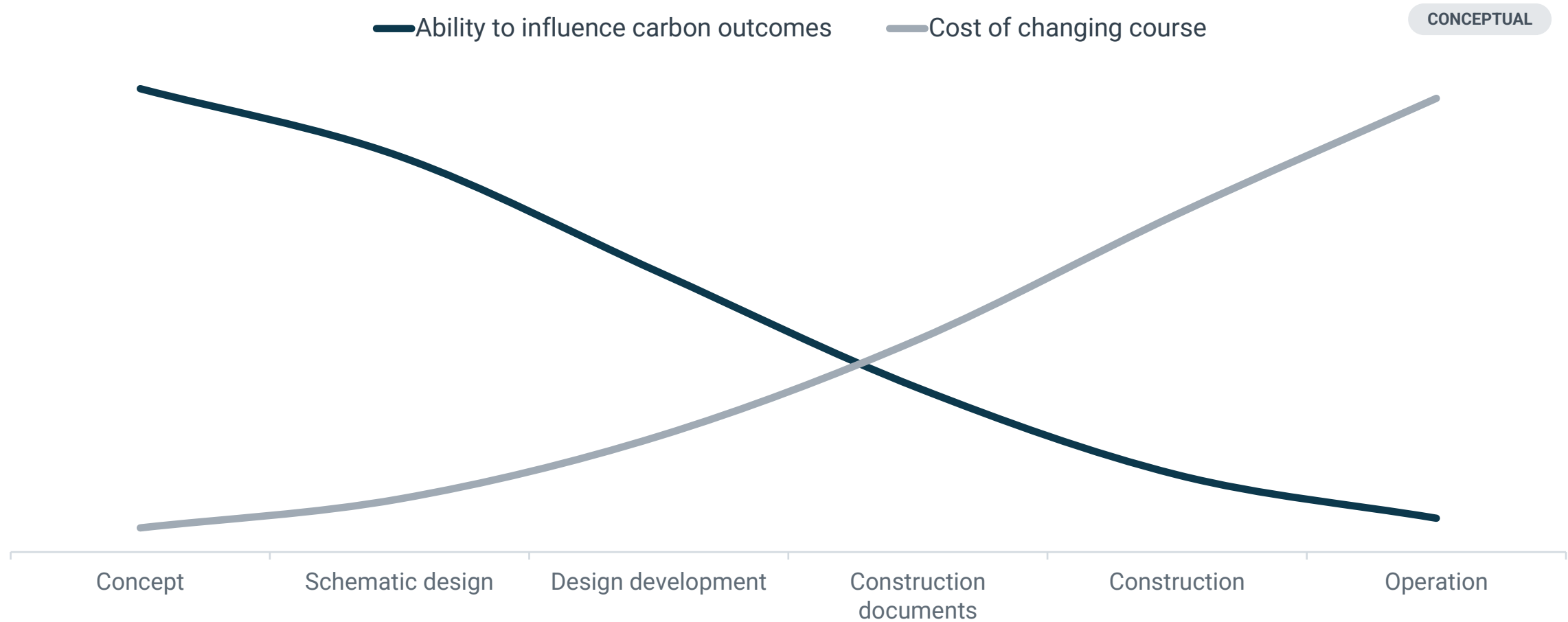
More Options, Less Carbon

Using project data to make better early decisions

Max Nevermann | AI Strategy Analyst - IMEG

Adam McMillen | Director of Sustainability - IMEG

THE DECISIONS THAT MATTER MOST COME FIRST



Conceptual illustration. No scale implied.



“

What if the team could see more options while there was still room to choose?

A REPEATABLE PROCESS



Six steps. Checking runs under all of them.





THE DATA FOUNDATION

1

The data has to exist.



2

The data has to be trustworthy.



3

The AI has to be connected to it.



THE DATA FOUNDATION

Buy a product

- Faster start
- Generic data connections
- Less control

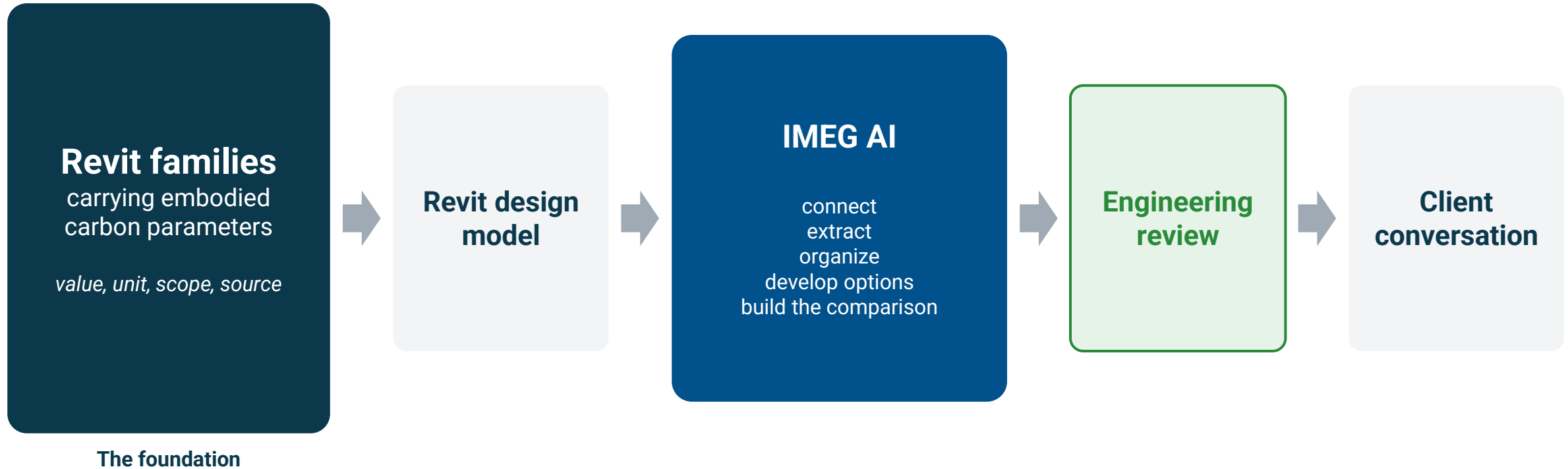
Build your own

- Fits your workflow
- Needs sustained investment
- More control

Either way, it needs access to useful, trustworthy project information.



THE DATA FOUNDATION





NEW TRINITY HOSPITAL

1 Connect to data

2 Bring into design

3 Extract, organize

4 Quantify options

5 Present comparison

6 Decide, keep checking

VALIDATE

New Trinity Hospital

BUILDING TYPE

Hospital

PHASE AT THE DECISION

Schematic Design

APPROXIMATE SIZE

135,000 sf

THE OPEN DECISION

Which mechanical carbon measures should the project pursue?

We do operating carbon all the time; how do we start thinking about embodied carbon?



Family parameters <i>illustrative</i>		
Parameter	What it must carry	New Trinity value
Embodied carbon value	The number itself	Per unit basis (i.e. lbs ductwork, pipe)
Unit	What the number is per	Metric tons CO2 equivalent
Scope	Life cycle stages covered	A1-A3
Source	Where it came from	Industry estimates (very few MEP EPD)

VALIDATION STARTS HERE

A carbon value is only useful if its unit, scope, and source are known.



NEW TRINITY HOSPITAL

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VALIDATE

What IMEG AI pulled from the model

Elements

Equipment

Quantities

Carbon parameters



What the team checked

Missing values

Mismatched units

Outdated
equipment

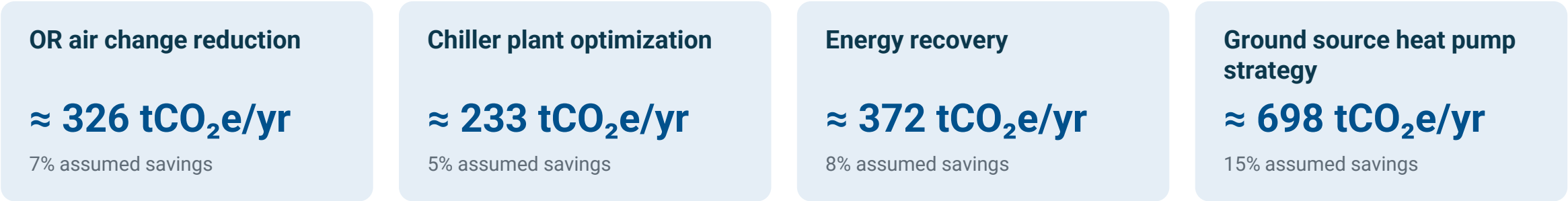
Quantities that do
not look right

SEVEN OPTIONS, TWO KINDS OF CARBON



OPERATIONAL annual, tCO₂e per year, share of the 4,653 tCO₂e per year modeled baseline

MODELED



EMBODIED one time, tCO₂e

ESTIMATED



HOW TO READ THESE NUMBERS



NEW TRINITY HOSPITAL

1 Connect to data

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3 Extract, organize

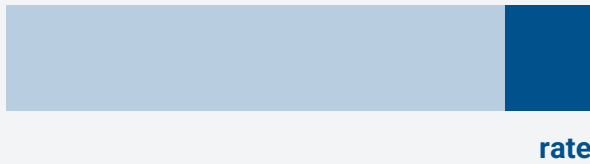
4 Quantify options

5 Present comparison

6 Decide, keep checking

VALIDATE

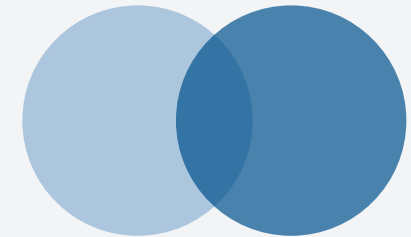
modeled baseline



Operational figures are assumed savings rates applied to a modeled baseline.



Embodied figures are ranges, not single answers.



Operational measures interact, so their effects are not simply additive.

THE DASHBOARD THE CLIENT SAW



NEW TRINITY HOSPITAL

1 Connect to data

2 Bring into design

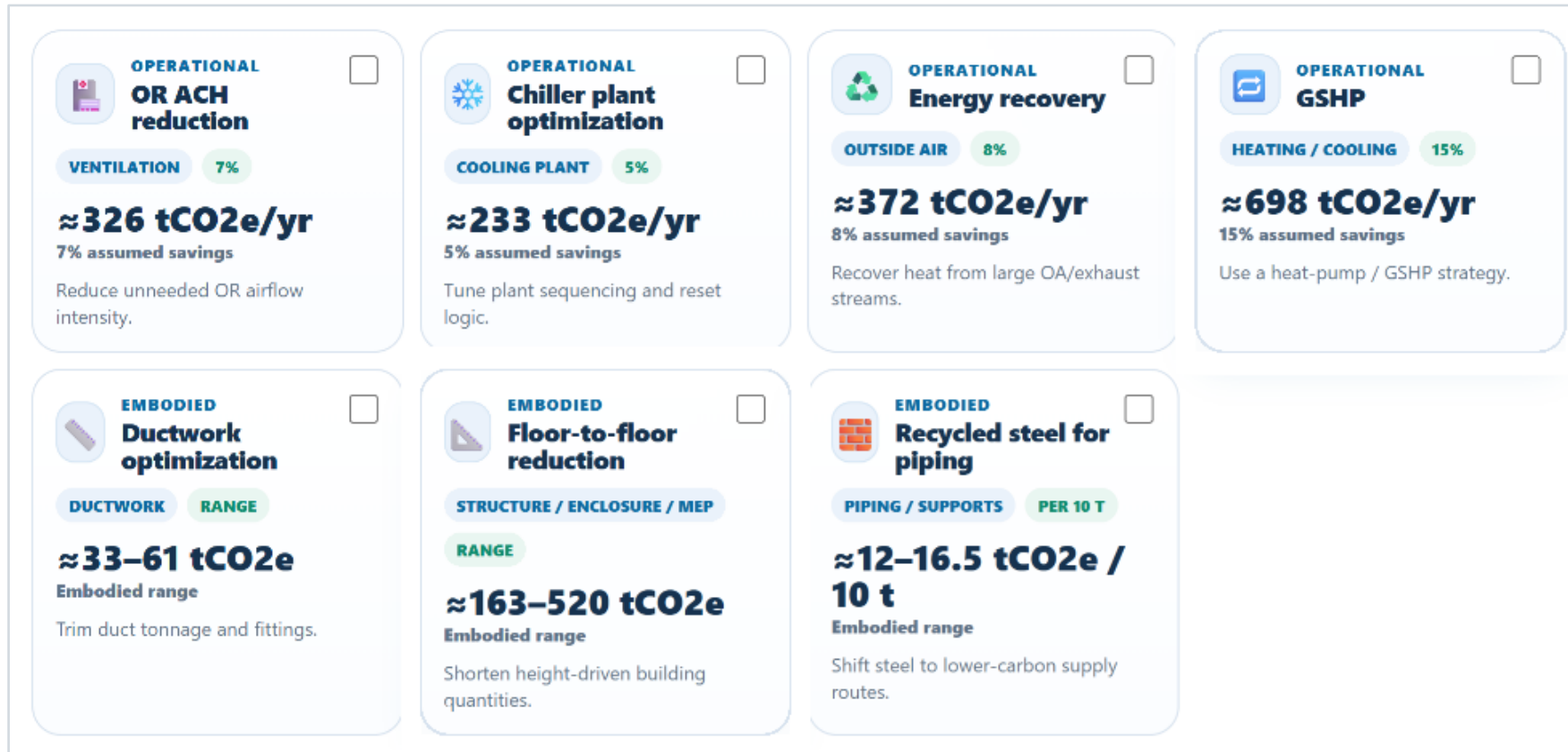
3 Extract, organize

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VALIDATE



Operational

annual, per year

Embodied

one time, shown as ranges

Built by Meg Studio
from the model data

Dashboard built by IMEG. Illustrative view.



NEW TRINITY HOSPITAL

1 Connect to data

2 Bring into design

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VALIDATE

The team modeled the options, quantified their expected effects, and presented the comparison. The client selected a direction.



The projected performance became something to keep checking.

LAKE OKHISSA: MODELED PERFORMANCE ON ONE PAGE



LAKE OKHISSA RESORT

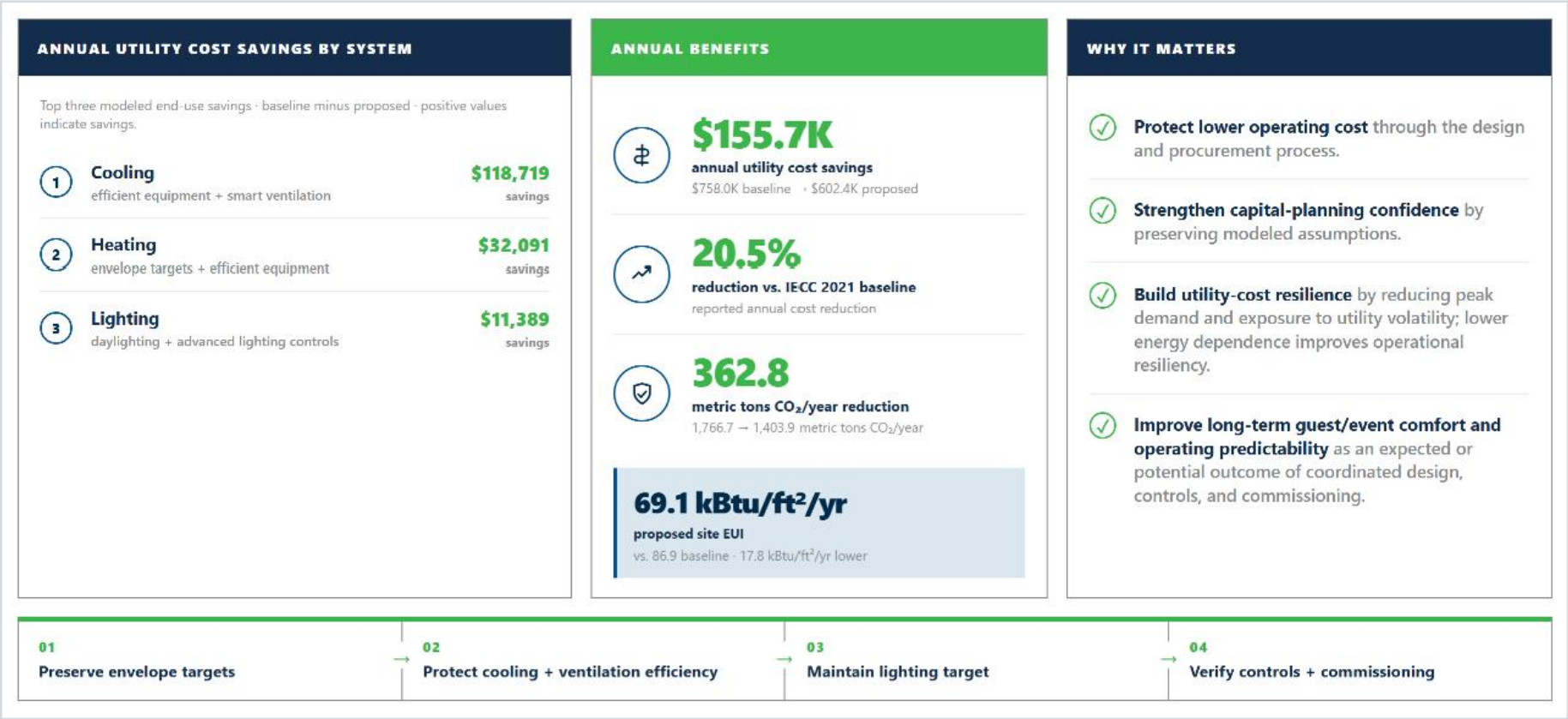
206,861 SF

Mississippi

4 floors

IECC 2021 baseline

Climate Zone 3A



MODELED COMPARISON VERSUS IECC 2021 BASELINE

The page the client saw (excerpt)

TARGETS TO PROTECT



LAKE OKHISSA RESORT

01

**Preserve envelope
targets**

02

**Protect cooling and
ventilation efficiency**

03

**Maintain lighting
target**

04

**Verify controls and
commissioning**

DELIVERY PHASE

Design

DELIVERY PHASE

Procurement

DELIVERY PHASE

Design and controls

DELIVERY PHASE

**Construction and
commissioning**

VALIDATE keep each target visible in every later conversation



ACCESS RESORT RESILIENCE AND FLEXIBILITY

STORM RESILIENCE = PROTECT PEOPLE, SUSTAIN ESSENTIALS, RECOVER QUICKLY

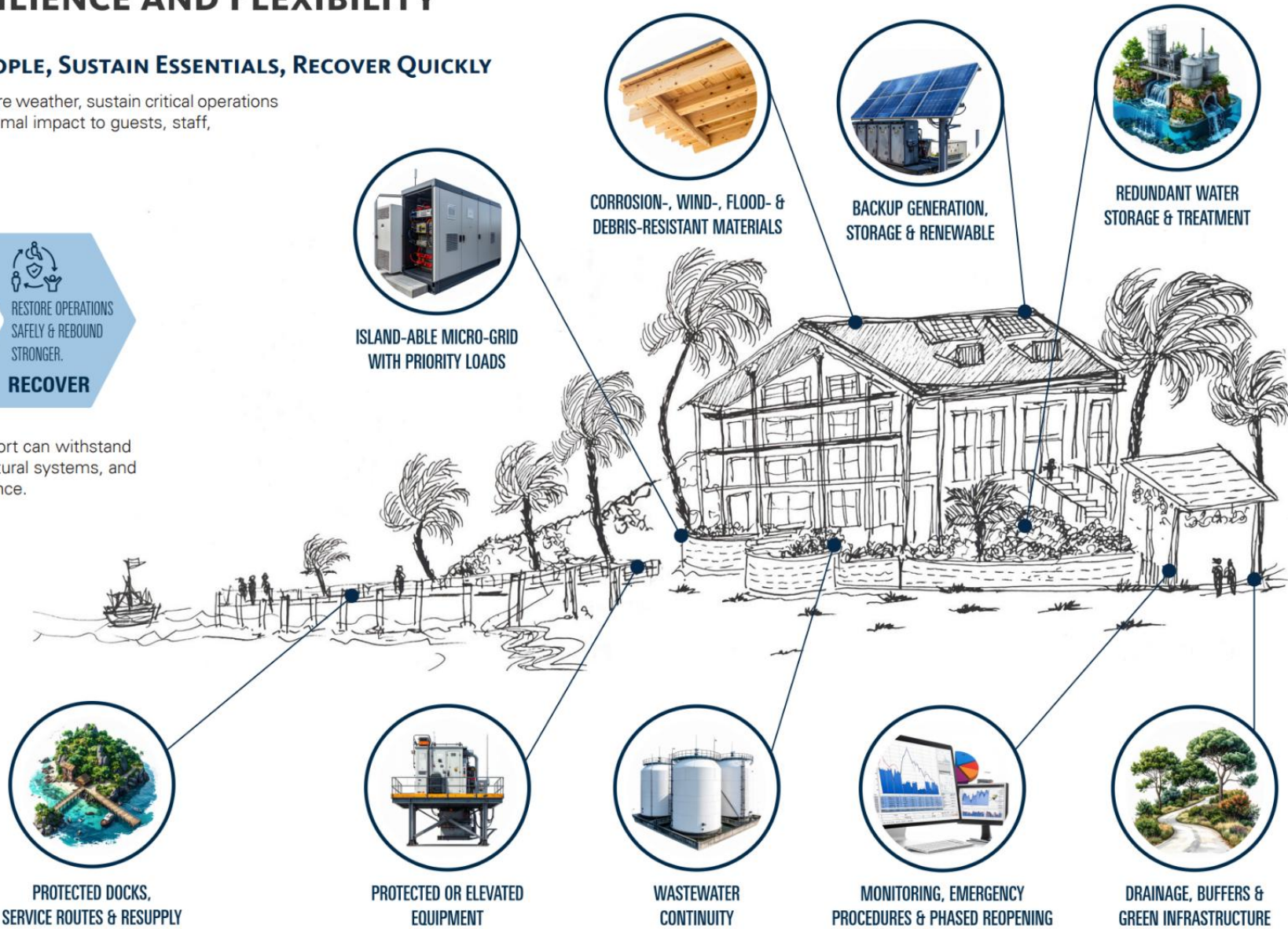
A resilient resort is designed to prepare for severe weather, sustain critical operations during disruption, and recover quickly with minimal impact to guests, staff, and the environment,

OPERATING PHASES



By integrating resilience from the start, the resort can withstand storms, maintain essential services, protect natural systems, and return to full operation with speed and confidence.

PRIORITY SYSTEMS





VALIDATION

1

Before building options

- Carbon values in families have known sources, units, and scope
- Relevant elements, equipment, and quantities are present and current

2

After extraction

- Review what was pulled
- Flag missing or mismatched information

3

When presenting

- Operational and embodied stay separate
- Ranges and assumptions are visible

4

As design advances

- Revisit the comparison when model content, equipment selections, or assumptions change
- Keep efficiency targets in front of the client and delivery team

THE PROCESS, AGAIN



VALIDATION



VALIDATE checking runs under every step

New Trinity

carbon parameters
in Revit families

New Trinity

the design model
as the source

New Trinity

AI extraction, then
team review

New Trinity

seven modeled
options, two kinds
of carbon

New Trinity

the dashboard
Lake Okhissa
the one-page brief

New Trinity

a direction selected
Lake Okhissa
targets to protect



AI'S OWN FOOTPRINT

What IMEG measured, 2024

ESTIMATED INVENTORY

≈ **20.66K t**

IMEG firm wide, metric tons CO₂e

≈ **0.6 t**

software usage, including Meg

What IMEG estimated

ESTIMATED

≈ **1 to 3 t**

CO₂e per year from annual AI use

Assumes 3,000 staff sending 10 messages per day

HYPOTHETICAL SCENARIO

Not achieved savings. If AI supported decisions on 1,000 projects of 30,000 SF each, with 5% savings:

OPERATIONAL, PER YEAR

≈ **13,000 tCO₂e per year**

EMBODIED, ONE TIME

≈ **40,000 to 50,000 tCO₂e**

Shown separately. Never added together.



More options, while there is still room to choose.

Connected project data let the team quantify alternatives early. The client saw the expected carbon effects and selected a direction. The projected performance became something to keep checking.





Questions & Discussion

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