



GREEN BUILDINGS FOR A SMARTER WORLD

www.edgebuildings.com

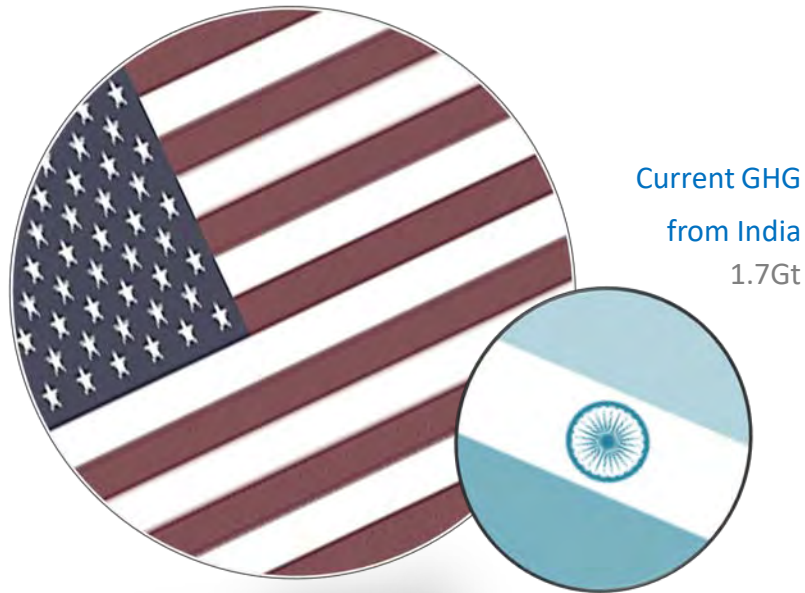
Prashant Kapoor
pkapoor1@ifc.org

**Emerging markets are in the
midst of a construction boom**

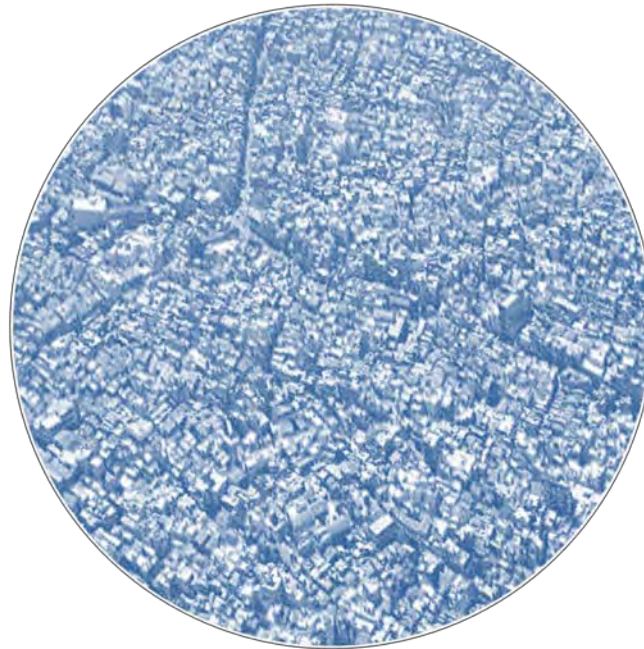


DESIGNING NEW BUILDINGS FOR GREATER EFFICIENCY IS ONE OF THE BIGGEST AND MOST COST EFFECTIVE WAYS TO REDUCE GHGS.

Current GHG
from USA
6.8 Gt

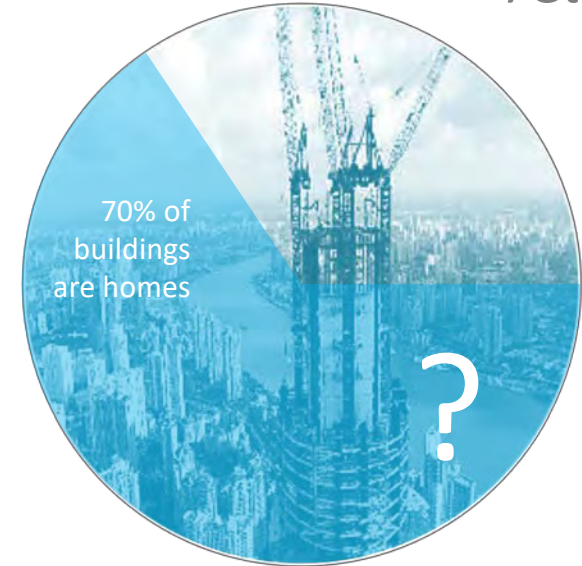


Current GHG
from buildings
9Gt



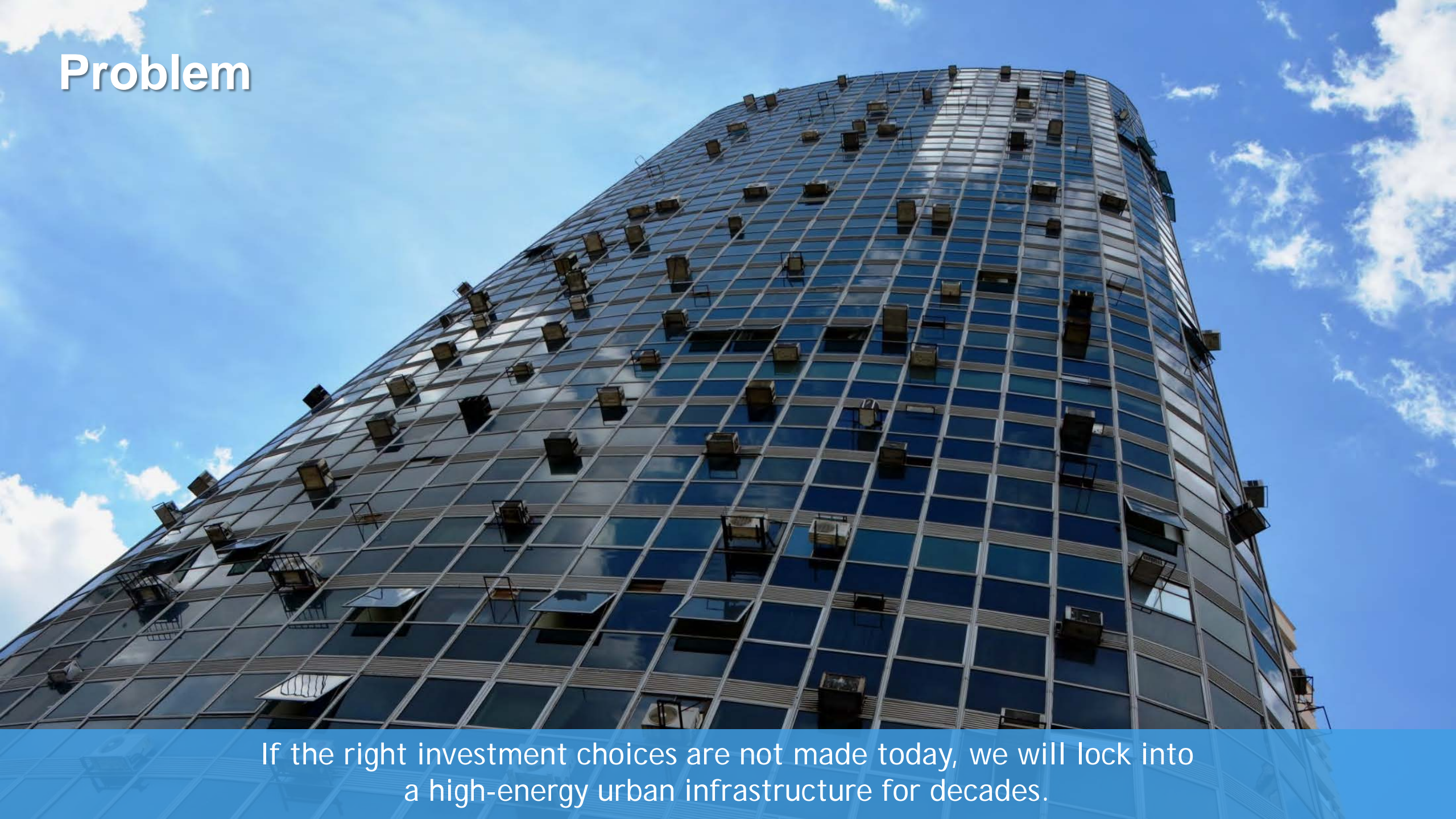
+

Additional GHG
from buildings
by 2030
7Gt



Green building options are commercially viable. By greening the building stock now one has the opportunity to make long term investments in low carbon.

Problem



If the right investment choices are not made today, we will lock into a high-energy urban infrastructure for decades.

Problem



Meanwhile, a lot of ordinary projects are been sold as green- creating a lack of trust and skepticism

Problem



How can green projects get recognized for it?

Problem

"We would fund efficient buildings, but there is no demand for them."



Home Owners

"We would like lower utility bills but there aren't any efficient homes."



Investors

CIRCLE OF
BLAME



Builders

"We would ask for energy-efficient homes, but investors won't finance them."



Developers

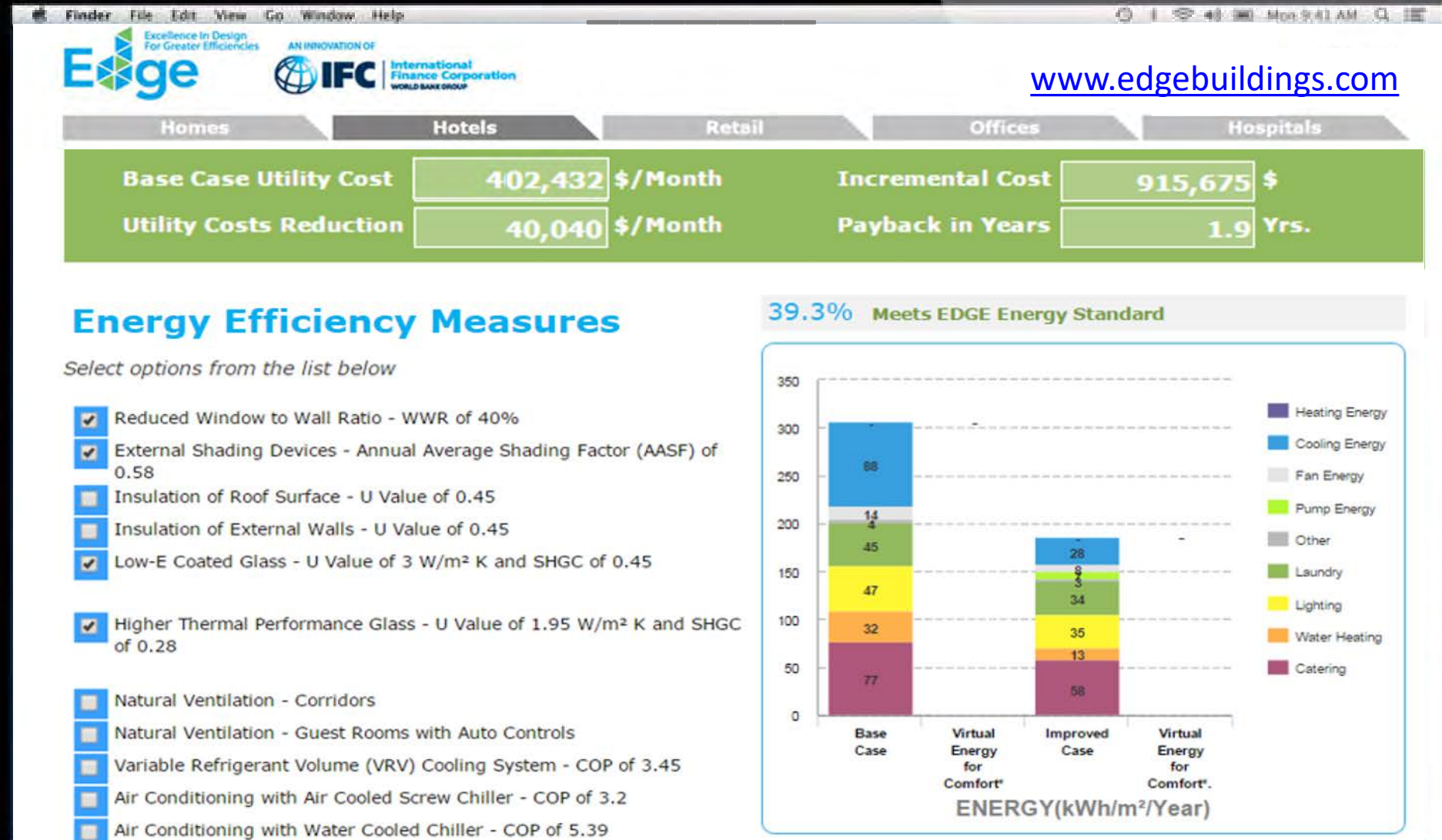
"We can build energy-efficient homes, but developers don't ask for them."

A high-angle, top-down photograph of a man with a shaved head and tattoos on his arms, sitting cross-legged on a light-colored floor. He is wearing a light-colored, short-sleeved button-down shirt and dark trousers. His hands are clasped together in his lap, and he is looking down at them with a thoughtful or distressed expression. Surrounding him is a large, circular area filled with numerous white sheets of paper and colorful sticky notes (yellow, pink, blue, red). The papers contain various types of content: some have pie charts, some have bar graphs, some have text, and some have small photographs. The papers are scattered in a somewhat organized but chaotic manner, creating a sense of being overwhelmed by information. The overall scene suggests a state of deep contemplation or a struggle to make sense of complex data or a problem.

Problem

How can clients make the right choices?

THE FREE SOFTWARE SHOWS HOW THE WAY TO RESOURCE INTENSITY



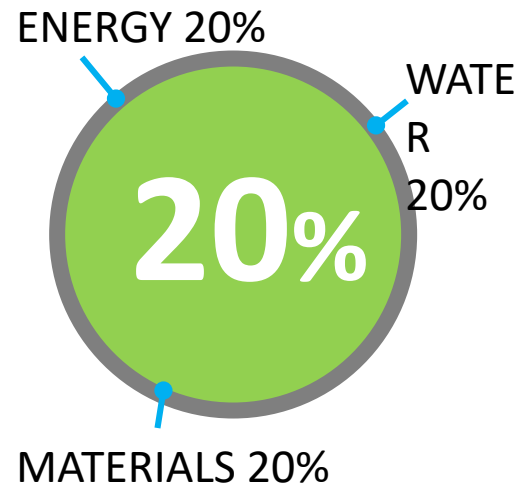
EDGE

EXCELLENCE IN DESIGN FOR GREATER EFFICIENCIES

① FREE SOFTWARE



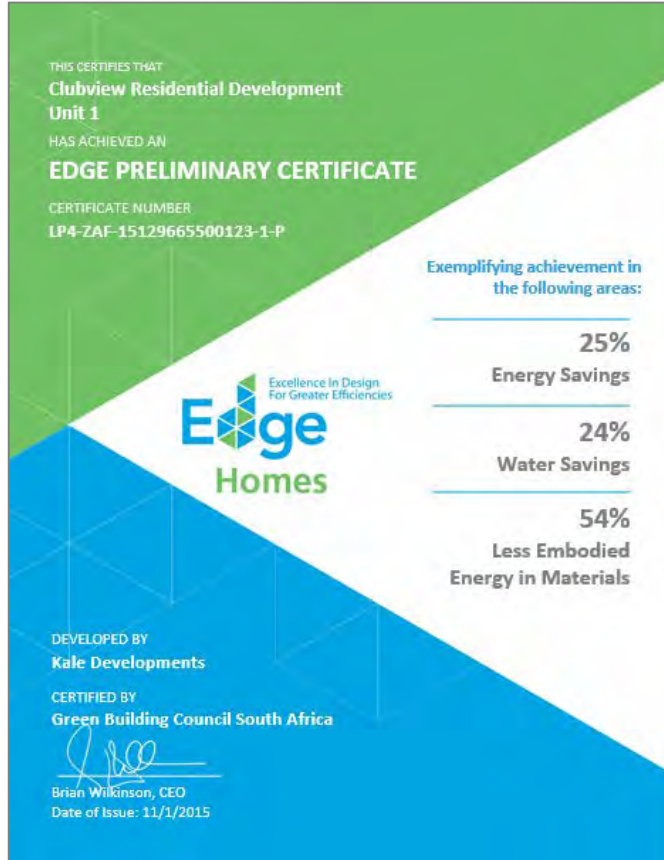
② SIMPLE STANDARD



③ SCALABLE LABEL



EDGE CERTIFICATION IS DELIVERED BY THE LARGEST AND MOST PRESTIGIOUS NETWORKS IN THE WORLD



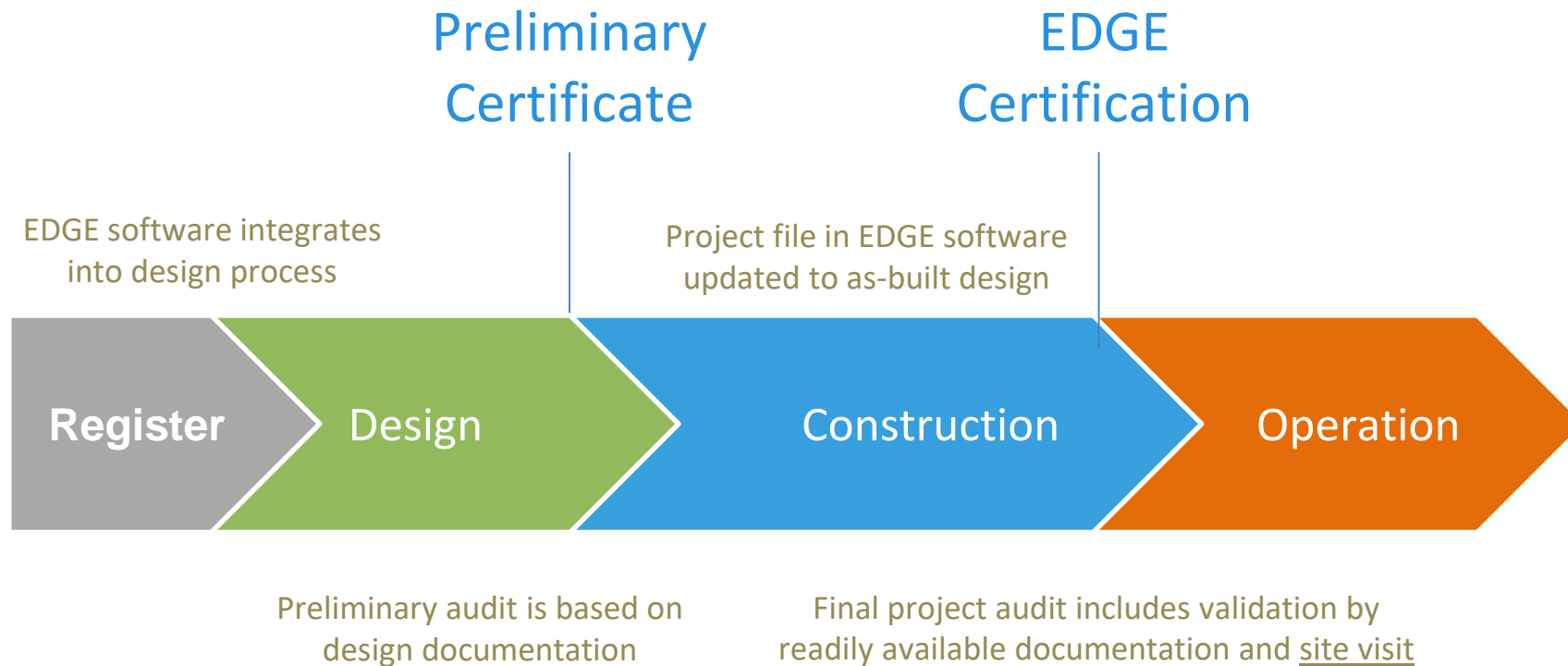
Worldwide

Green Business
Certification Inc.

thinkstep-SGS
joint venture

IFC currently works with five Certifiers
to help scale up green building growth.

EDGE CERTIFICATION PROCESS REQUIRES LITTLE ADDITIONAL DOCUMENTATION





ENERGY

33%



WATER

39%



MATERIALS

23%



THERE IS A CLEAR OPPORTUNITY TO ENGAGE MUCH MORE OF THE MARKET TO FOCUS ON GREEN BUILDINGS.



Recognizing that this approach was missing, IFC created EDGE

MILESTONES

- EDGE software: in 5 languages; 125 countries.
- EDGE certifiers are now the largest green building network in the world
- EDGE used by Green Bond Principles, commercial banks (India, Turkey, South Africa, Costa Rica, Oman, Philippines)
- Member: UN Global Alliance for Buildings and Construction; Building Efficiency Accelerator

2 billion +

Dollars Invested by IFC alone using EDGE software.
FY13-17.

1 million +

Square meters of area already certified across 100 projects

20,000

unique users



IFC INVESTMENT SUPPORTS DEMONSTRATIONS WITH DEVELOPERS AND FINANCIAL INSTITUTIONS

- Government regulations – new green building codes
- **Investing in construction of new homes**

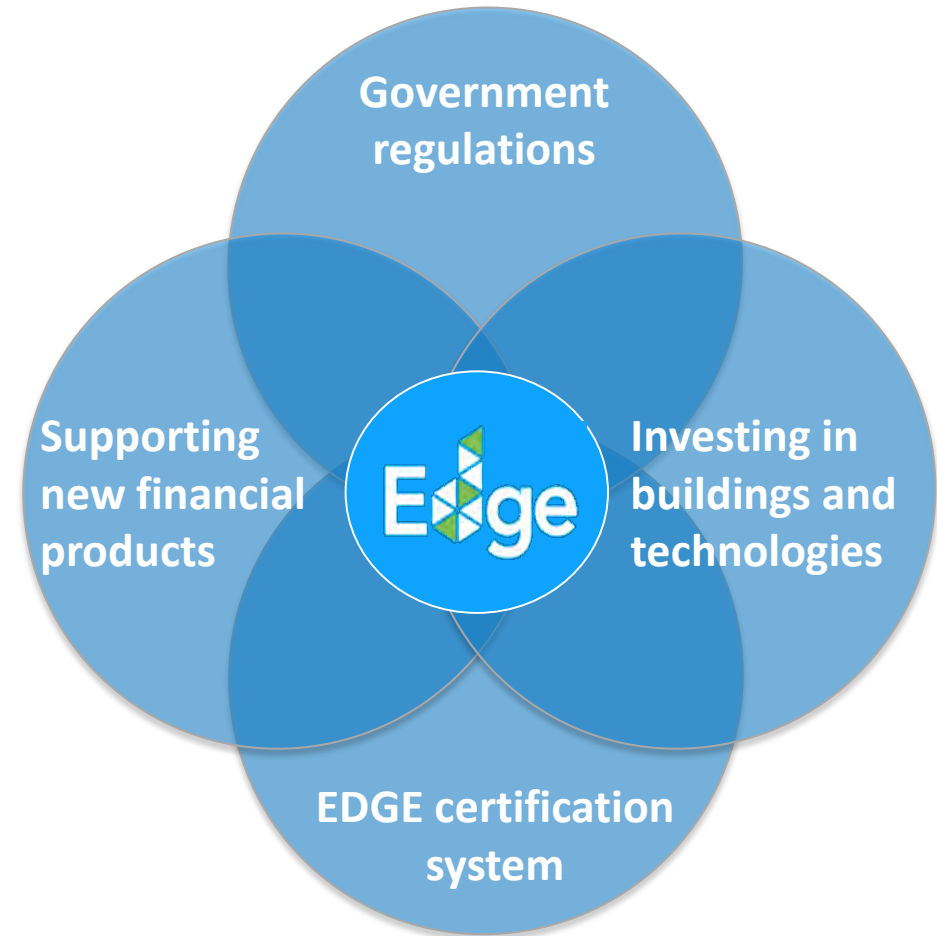
Creates green stock

- EDGE certification system
- Partnerships with local Green Building Council

Certifies green stock

- Training and capacity building with banks
- **Investment in credit lines**

Scales green stock



A four-pronged approach to incentivize market adoption of green building practices

IFC'S SUPPORT ON GREEN BUILDINGS CODES

1. Indonesia

National

Jakarta

Bandung

Makassar*

Surabaya*

Green Building Code

2. Vietnam

Energy Efficiency Code

3. Bangladesh*

4. Colombia

5. Philippines

National

Mandaluyong

Green Building Code

6. Peru* & Costa Rica*

** In development/
waiting approval*

7. Mongolia & Myanmar

In early planning stage

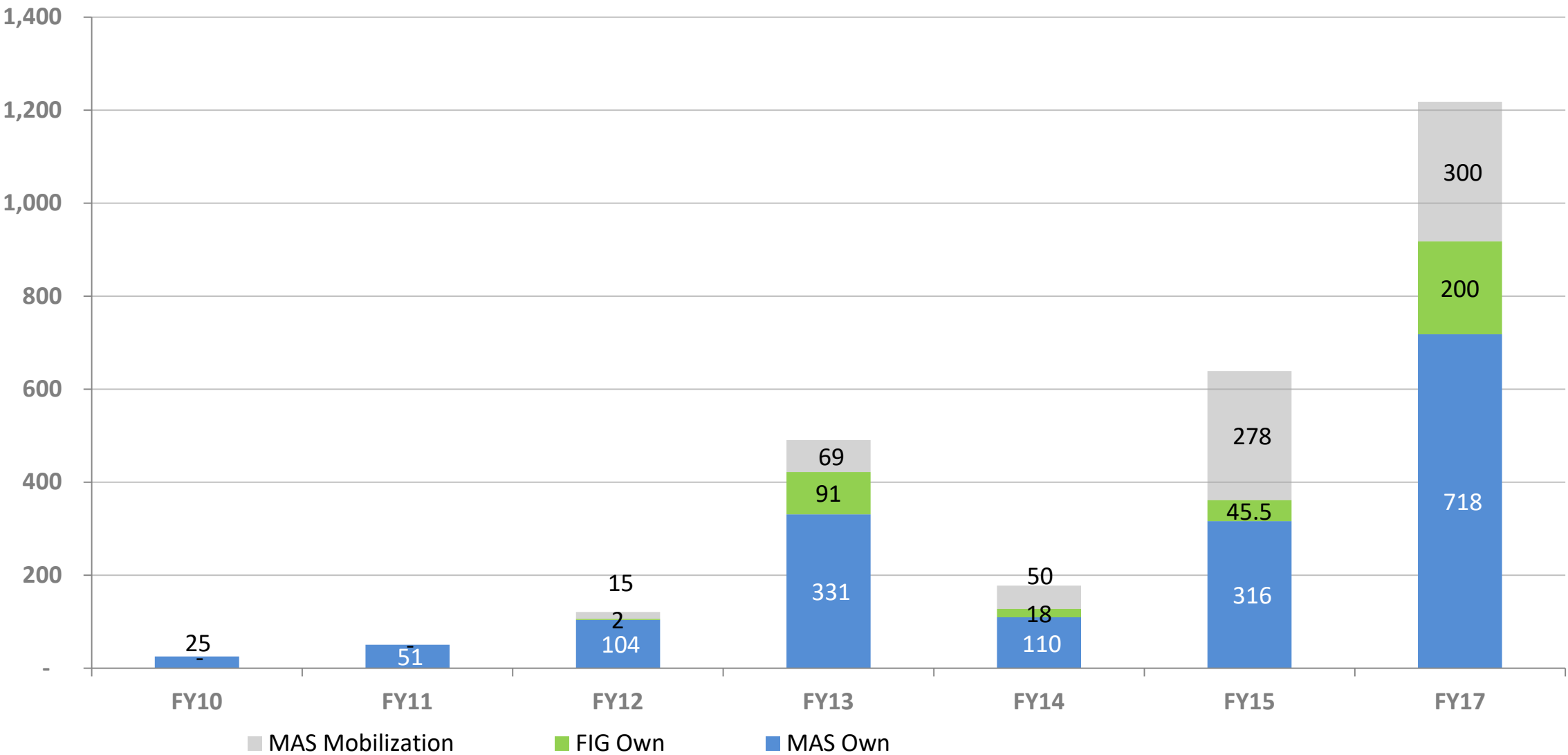
About
18 Million m2 of
new building space
has complied with
these codes

Equivalent to
~1/3rd of office
buildings in
Manhattan



IFC GREEN BUILDING INVESTMENTS HAVE BEEN GROWING RAPIDLY

USD millions



WHAT WILL SUCCESS LOOK LIKE?



DEVELOPERS USE EDGE TO DIFFERENTIATE



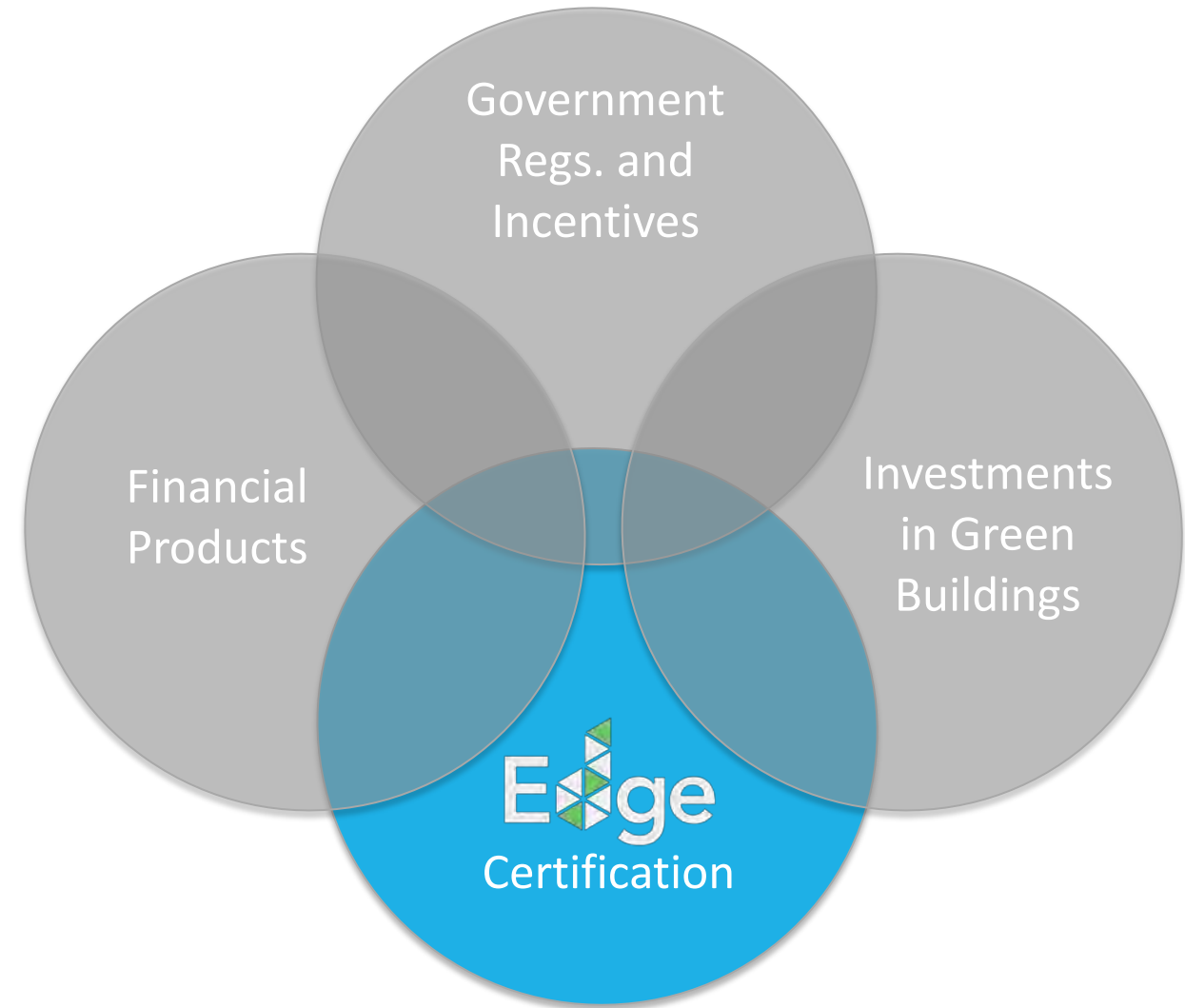
BANKS TARGET GB MARKET WITH NEW PRODUCTS



OWNERS RECOGNIZE OPERATING BENEFITS



GOVERNMENT OFFER INCENTIVES AND
ENABLES ALIGNMENT OF EE CODE



20% of new construction to be green in target markets in 5-7years.

“GREEN” DIFFERENTIATION MEASURES ARE BEING EMPLOYED BY DEVELOPERS

(1/2)

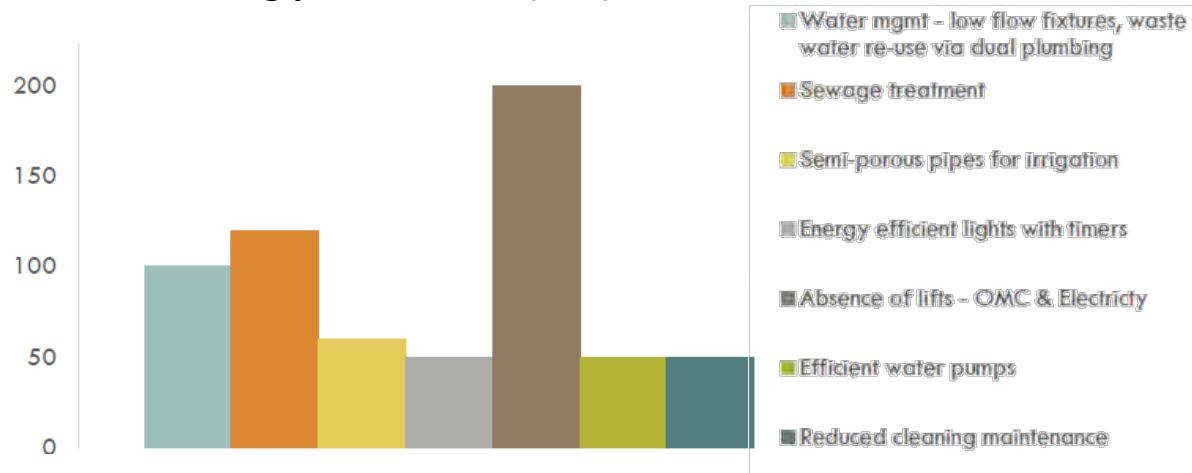
Lower maintenance and utility costs

Developers especially in the low income and affordable housing space are the most keen users of “maintenance cost” differentiation.

The EDGE certified Kesar City project in India is a case-in-point –it achieved 80% savings in maintenance over benchmark costs.



Actual saving per measure (INR)






Kesar was the **fastest to sell** among 14 projects which went to market in 2015 in the Maraiya region despite being the largest. Several projects in the vicinity remain unsold.

NEW BUSINESS MODELS ARE HELPING ALIGNMENT OF SPLIT INCENTIVES IN GREEN HOMES (1/1)

In Philippines, Imperial Home's Via Verde is a solar powered community of 1,000 houses.

Imperial Homes install 500 watts roof top solar PV panels with every on every unit for free to allow buyers to enjoy lower electricity rate through the **PV lease-back program**.



PREDICTED SAVINGS		TECHNICAL SOLUTIONS
	32% Higher Energy Efficiency	Reduced window to wall ratio, energy-saving lighting, and solar photovoltaics.
	28% Higher Water Efficiency	Low-flow showerheads, low-flow faucets for washbasins and kitchen sinks, and water-conserving toilets.
	38% Less Embodied Energy in Materials	Corrugated zinc sheets for roof construction, in-situ reinforced external walls, ferrocement panels for internal walls, and steel window frames.

NEW BUSINESS MODELS ARE HELPING ALIGNMENT OF SPLIT INCENTIVES IN GREEN HOMES

VBHC’s EDGE homes costed 2% more By reducing construction **duration by 66%** they have in lowering working capital requirements.




The improving cash-cycle more than makes up the incremental capital cost green features.



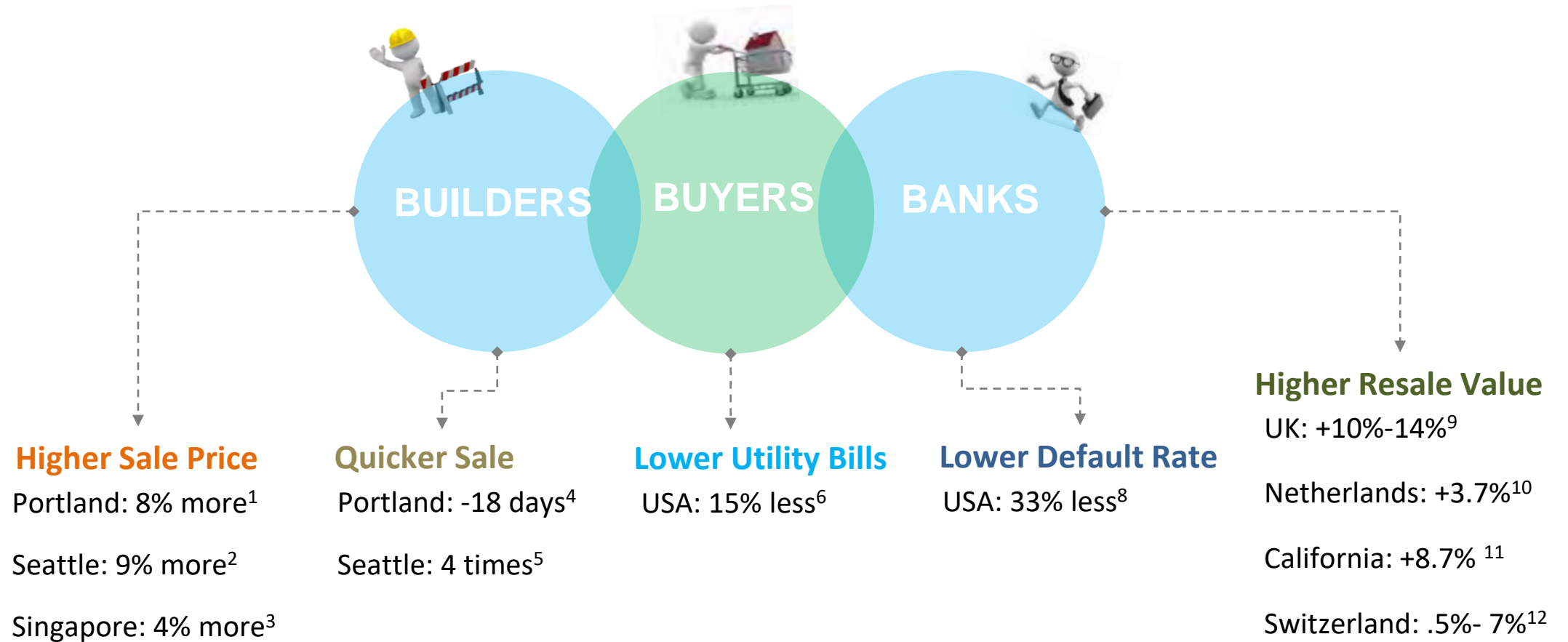
Concrete formwork technology allows rapid construction and also has lower embodied impact than bricks



Shambhu ST with his family at his VBHC flat. The 35-year-old’s compact, two-bedroom apartment on the outskirts of Bangalore bought the flat for Rs.11 lakh (US\$17,000).

PREDICTED SAVINGS		TECHNICAL SOLUTIONS
	33% Higher Energy Efficiency	Reduced window to wall ratio, reflective paint for external walls, external shading devices, energy-efficient ceiling fans, energy-saving light bulbs in internal spaces/commons areas/external spaces, and solar hot water collectors.
	39% Higher Water Efficiency	Low-flow showerheads, low-flow faucets for washbasins, dual flush water closets, rainwater harvesting systems, and recycled black water for flushing.
	23% Less Embodied Energy in Materials	150mm in-situ reinforced external and internal walls.

BUSINESS CASE FOR GREEN HOMES



Energy efficient homes already demonstrate commercial value in developed markets. Emerging markets needs a smart labeling system to demonstrate the same business



Diverting brown finance to green

BANKS, FUNDS, HOTELS, AND OTHER DEVELOPERS ARE TURNING TO EDGE



Development Banks



Banks in developing countries



Real estate funds



Hotels



Other



Prashant Kapoor
pkapoor1@ifc.org
www.edgebuildings.com



BOP Families spends up to 40% of income on energy¹

Power outages for 46 days per year

60 million people own generators to provide electricity- 30% of electricity is produced by dirty and inefficient private generators

Higher cost of inefficient energy-using devices is an added cost of being poor.

Energy scarcity is constraining growth

Housing sector consumes 53% of Nigeria's electricity

Designing *new* buildings for greater efficiency is one of the biggest and most cost effective ways to reduce GHGs.