

► Property Finance

A renewed focus : Reviewing market fundamentals for the real estate sector of the future

May 2022

see money differently



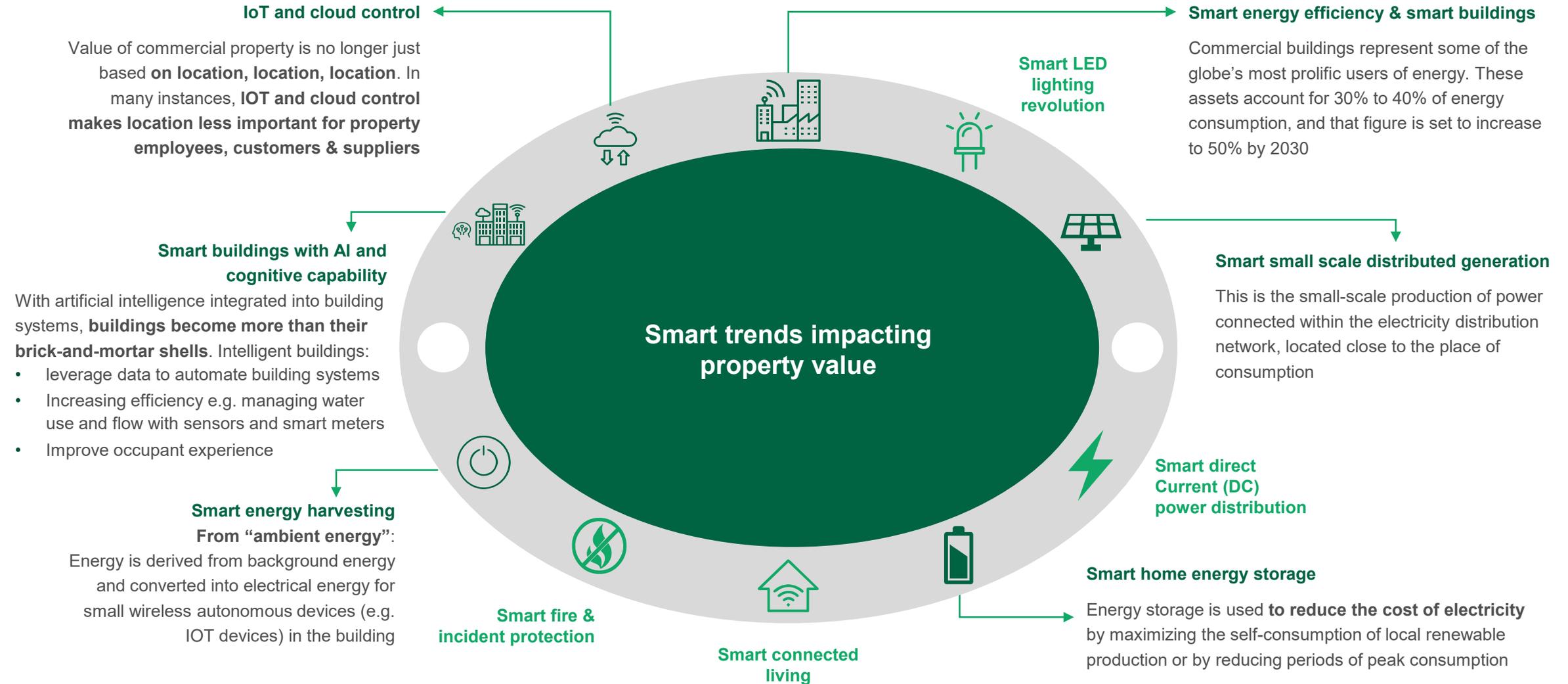




Thank you

Technologies impacting the value of property

Real estate used to be **location, location, location** – now its **location, location, disruption**



Source: Frost & Sullivan and <https://www.ibm.com/blogs/internet-of-things/iot-building-intelligence-into-buildings/>

Global challenges have created the need for smart cities

Cities have to manage large interrelated global challenges

Shaping forces

- 80%** of total global **energy** is consumed by cities
- 75%** of CO2 **pollution** is generated by cities
- Urbanisation**: 4 billion people are living in cities
- 54%** of **water** is lost through leaky infrastructure
- 50%** of **water** is lost through leaky infrastructure
- 23%** of global **deaths** are linked to the environment (12,6m per annum)
- 3X** The number of **mega cities** since 1990 (28 cities >10m population)
- 1.5** Million people are added to urban cities **every week**

Key drivers

- 
- 01** Climate Change
 - 02** Insufficient & Aging Infrastructure
 - 03** Socio- economic challenges
 - 04** Global Competitiveness

The challenge

Major cities of the world are expected to deal with AND resolve real world **global challenges** such as rapid urbanisation, climate change, resource depletion; whilst maintaining and increasing quality of life for its citizens

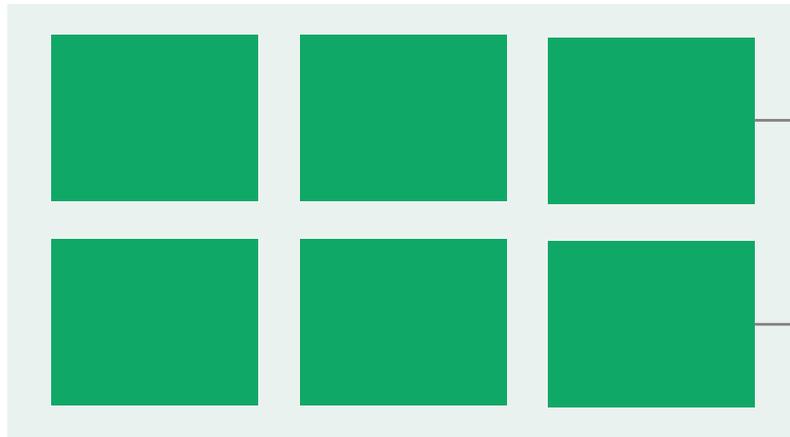


This has led to the pressing need for “Smart Cities”

Building integrated photovoltaic (BIPV) glazing

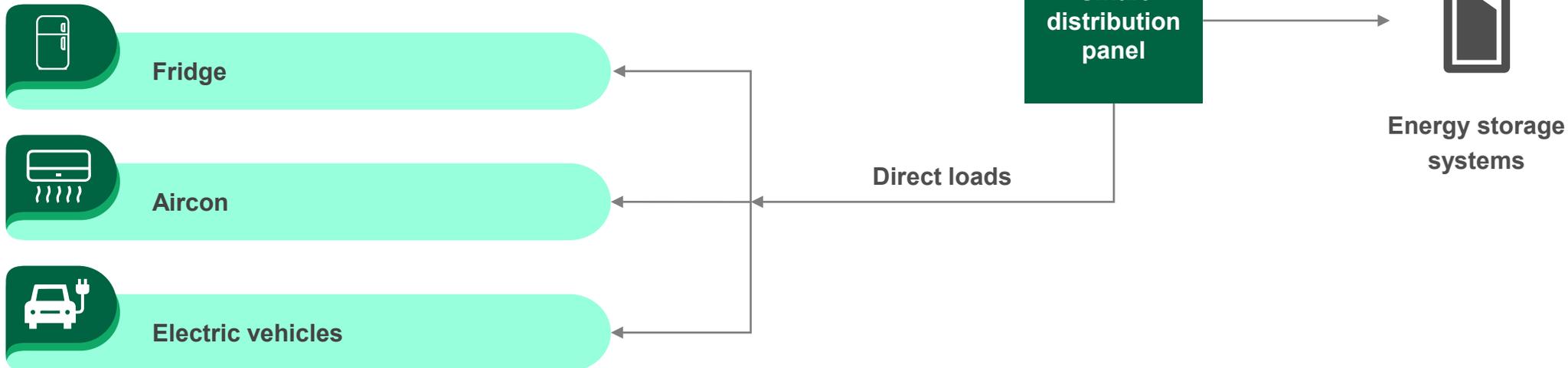
BIPV transforms a building into a solar panel which generates clean & efficient energy

E.g. Building integrated photo voltaic windows



Building integrated photovoltaic (BIPV) glazing

- This is a mechanism to produce electricity through solar power by transforming a building into a solar panel
- BIPV is a glass utilised as a building material and is particularly versatile as it can be used as **windows, roofs, as well as for facades**

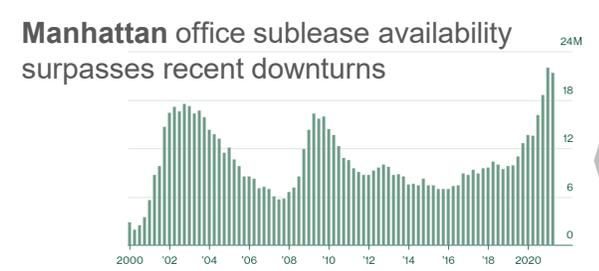
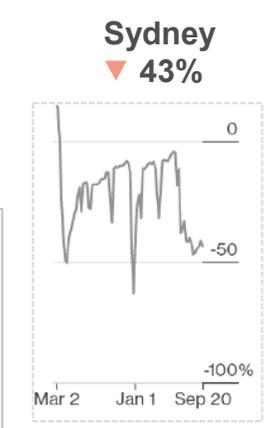
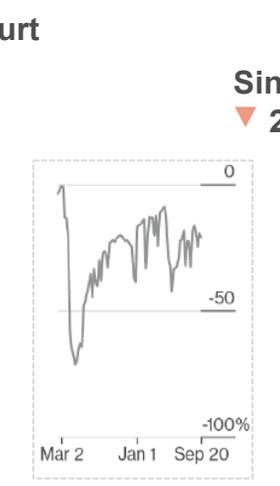
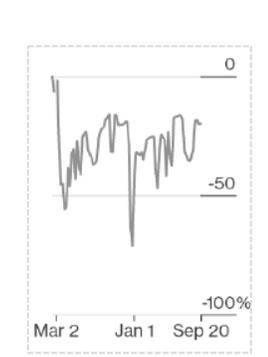
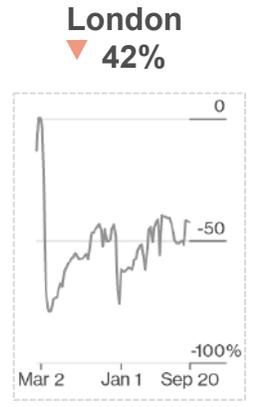
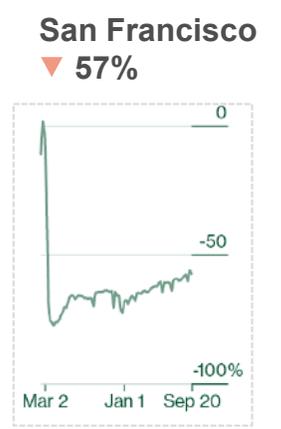
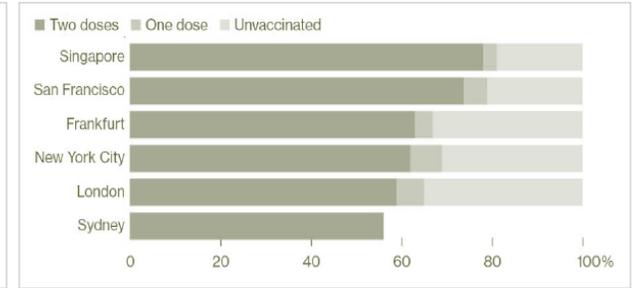


Workplace activity in global financial centres



Workplace activity is still below pre-pandemic levels in the world's leading financial centres but a recovery is in sight...

- Activity in London and New York has recovered, however not to pre-pandemic levels
- Singapore and Sydney have had to introduce fresh restrictions as the number of coronavirus cases spikes
- Due to variations in vaccination rates and risk appetites, workplace activity is at varying levels across cities
- London, New York and to a lesser extent, Frankfurt have vaccinated large numbers of their population and are reopening even as the virus lingers
- Singapore and Sydney that locked down hard and early have found loosening restrictions tougher as they face further outbreaks



- There's been an uptick in demand for office space across NY.
- Tech firms, including Facebook & Amazon have been in the market for new leases.
- Google recently announced plans to buy a Manhattan building for USD \$2.1 billion

Source: The March Back to Office Heads in Sharply Different Directions October 4, 2021, Bloomberg
 Note: Workplace activity charts (above) are graphs that show community mobility, or the movement of people as tracked by Google. Research compiled by Research & Client Insights

3D Printing in architecture, engineering & construction

3D printing is leveraged in planning & prototyping by creating realistic scale models



3D printing is used to create:

- Scale models of a building
- Architectural features or interior details such as a fixture or fitting

Scale models ensure accuracy and can help to identify problems and eliminate errors in the design stage



A 3D printed architectural model can:

- Communicate a project to clients more effectively than 2D drawings or 3D renderings
- Sell ideas more effectively



Architects can use 3D printing in the urban design phase of a project to:

- Study the effects of a new structure on its surroundings
- Plan an urban environment by 3D printing the surrounding area

- 3D printing is used most commonly for **creating scale models of actual real estate projects**
- 3D printing is increasingly being used to construct actual 3D printed buildings
- 3D printing is already making an impact in the construction of **affordable housing solutions for targeting the housing crisis in developing areas**
- Mostly used for low rise buildings and not widely used for high rise buildings
- 3D printing is also being used to reach and **build in uninhabitable areas** that do not have sufficient space for cranes to get through
- **By 2030** it is feasible that entire cities will be built using 3D printing technology

Challenges

- Cultural acceptance of these buildings is difficult in societies. Majority of people in SA still prefer brick buildings and 3D printed buildings are seen as inferior and culturally irrelevant

Cost of construction

