MATI EXPERIENCE

PROGETTARE IN MODO SOSTENIBILE

Architetto Marco Matteini

MATTEINI+ASSOCIATES


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フレーム+レンズ
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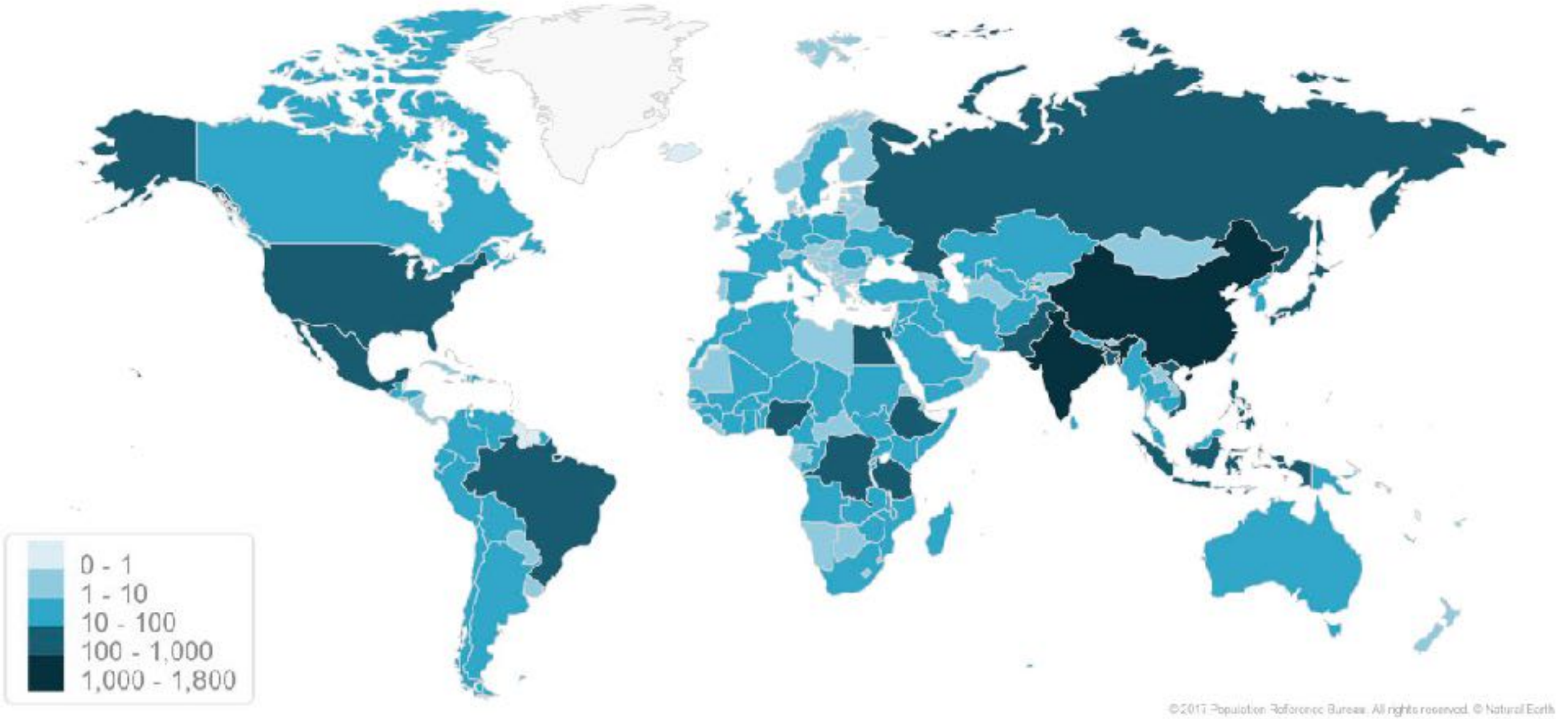
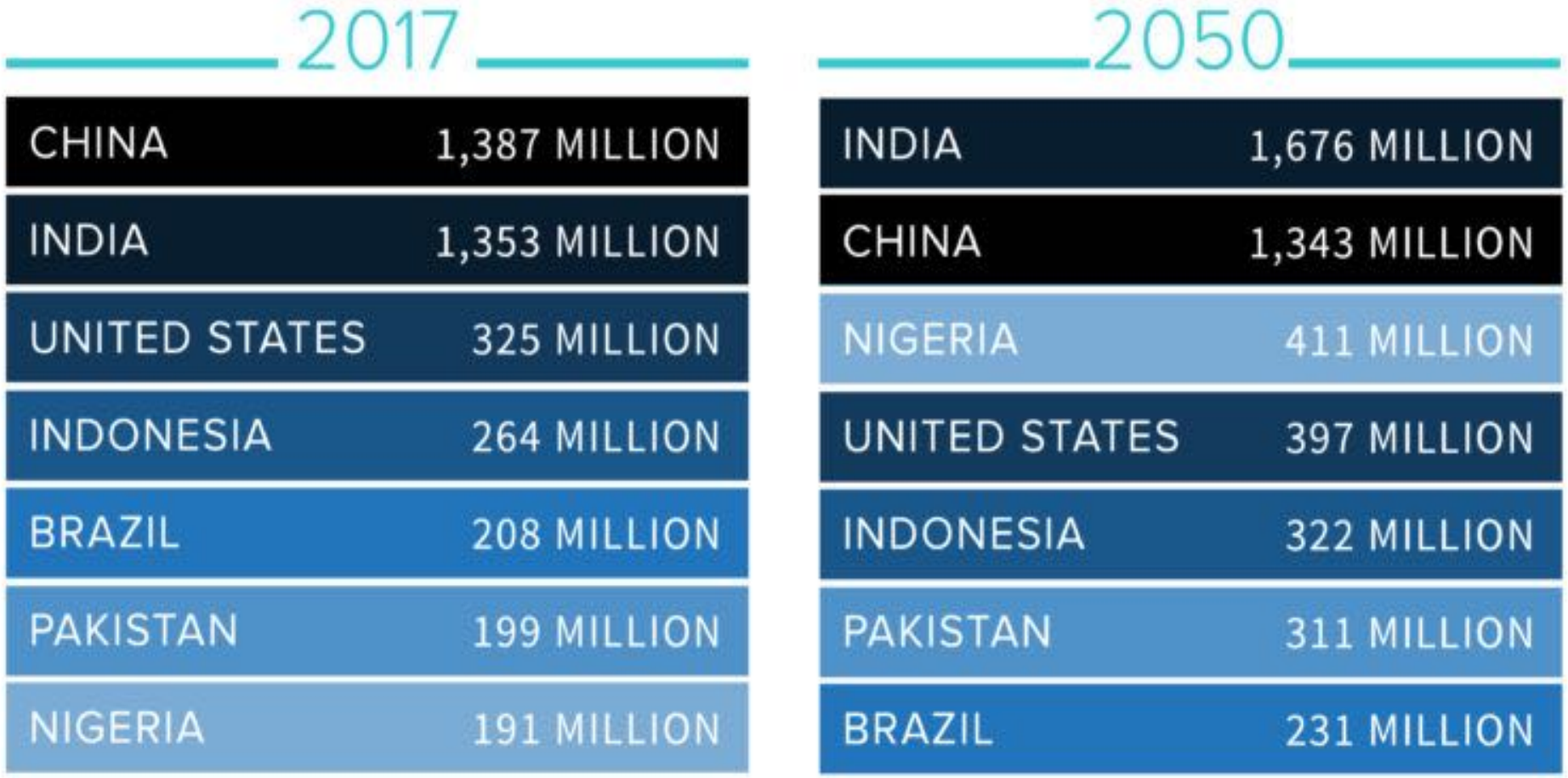
HUMAN POPULATION GROWTH

NEW URBANIZATION TREND?

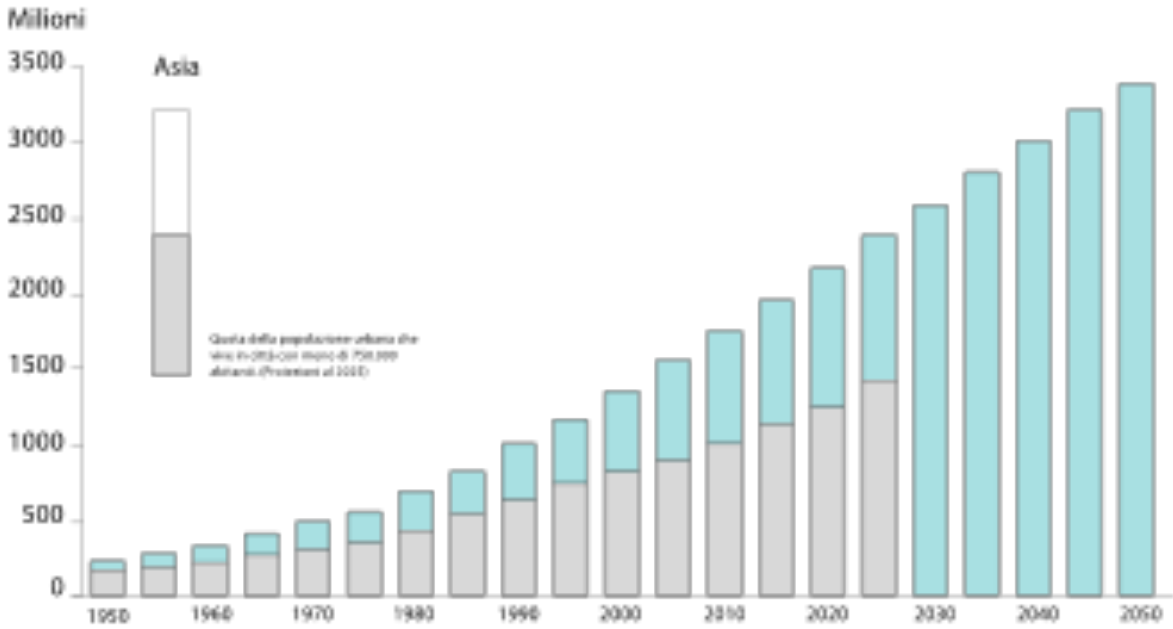
WORLD POPULATION (millions) - 2050



WORLD POPULATION RANKING 2017-2050 (millions)



SOURCE: POPULATION REFERENCE BUREAU • WORLDPOPDATA.ORG • #WORLDPOPDATA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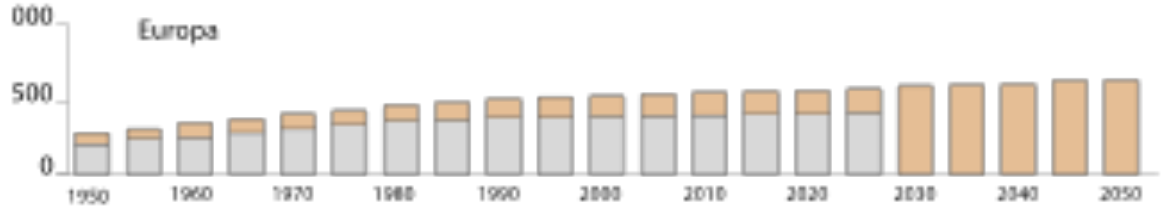
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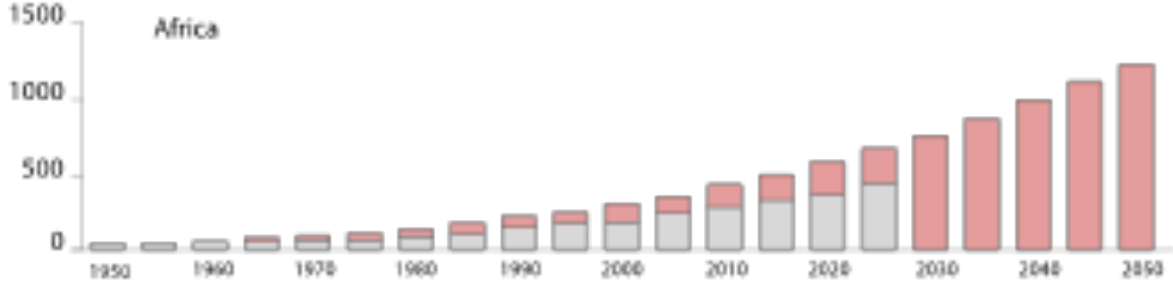
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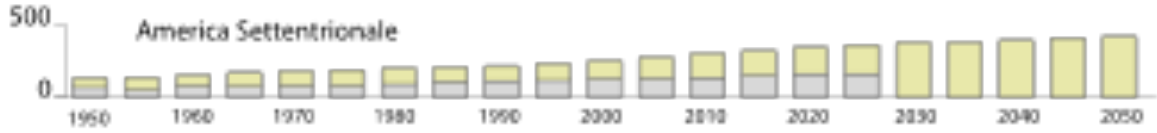
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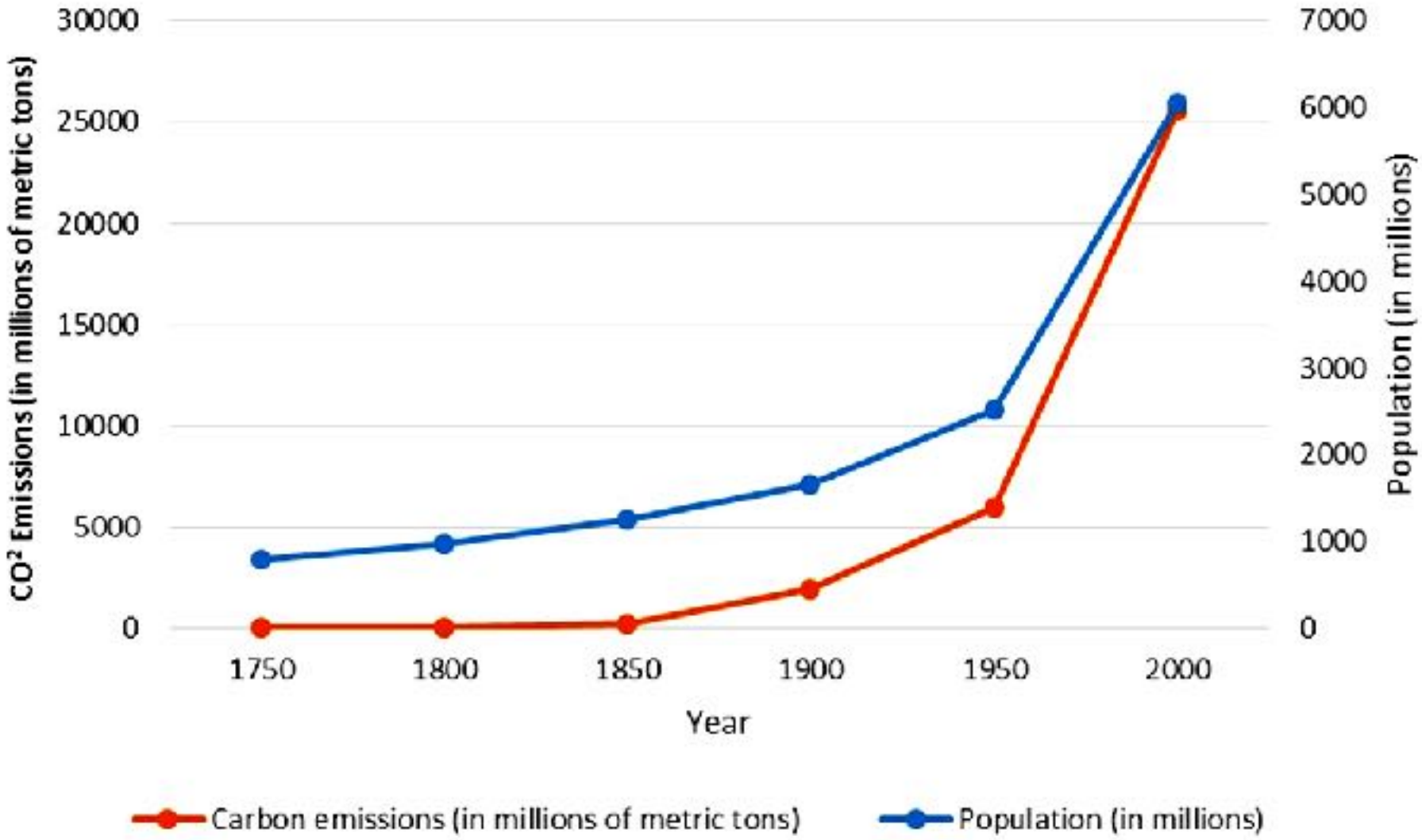
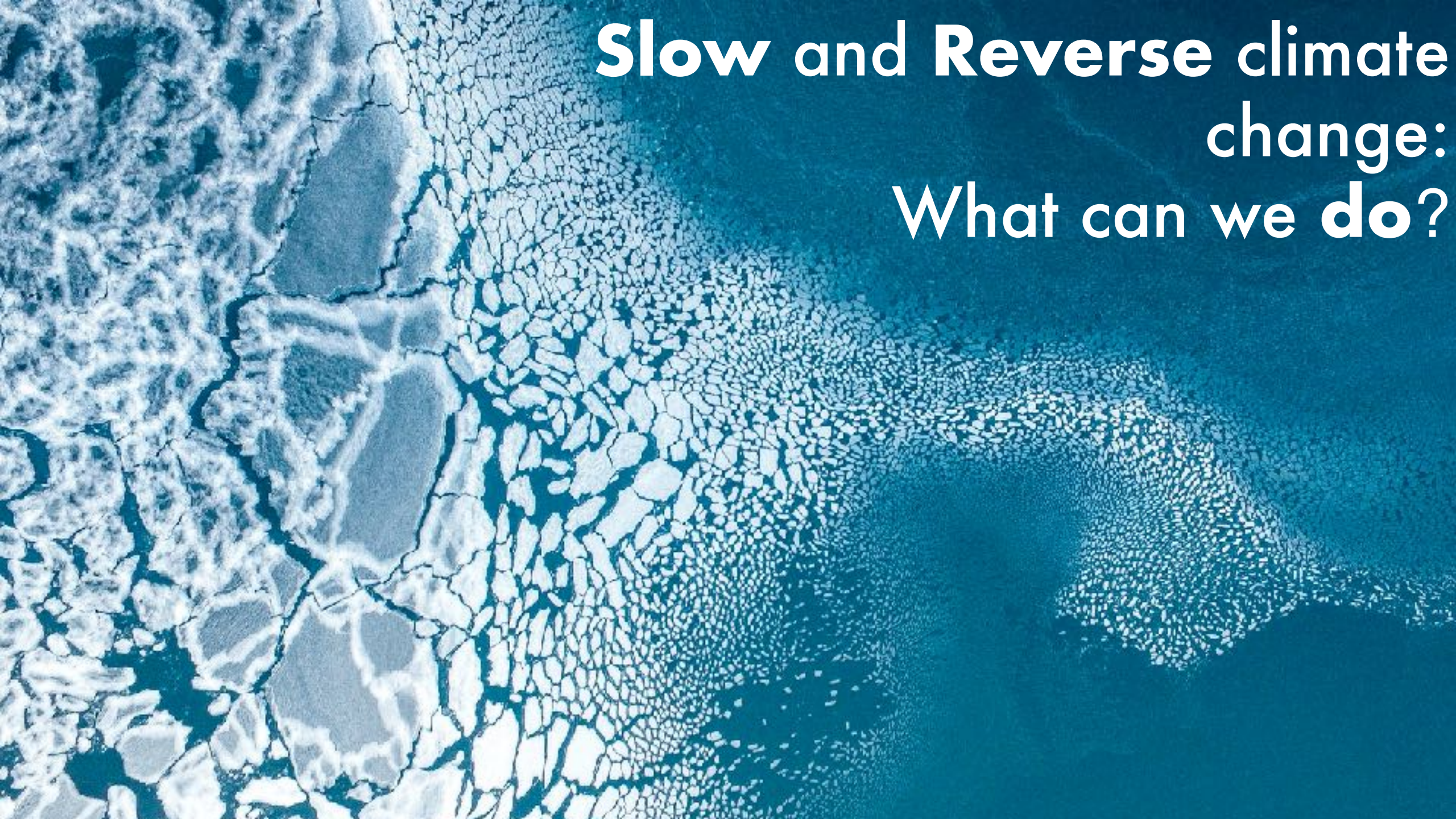
GLOBAL POPULATION GROWTH and CO_2 EMISSIONS



CLIMATE CHANGE

Climate change is the long-term alteration of weather patterns affecting our planet. In the modern world this occurs largely due to human produced greenhouse gases, such as carbon dioxide and methane, which trap heat in the atmosphere and alter the earth's climate. The range of impacts this will have on the planet is hard to quantify but includes more extreme weather events, resource scarcity and sea-level rise.



Slow and **Reverse** climate change: What can we **do**?

Think Global Act Local

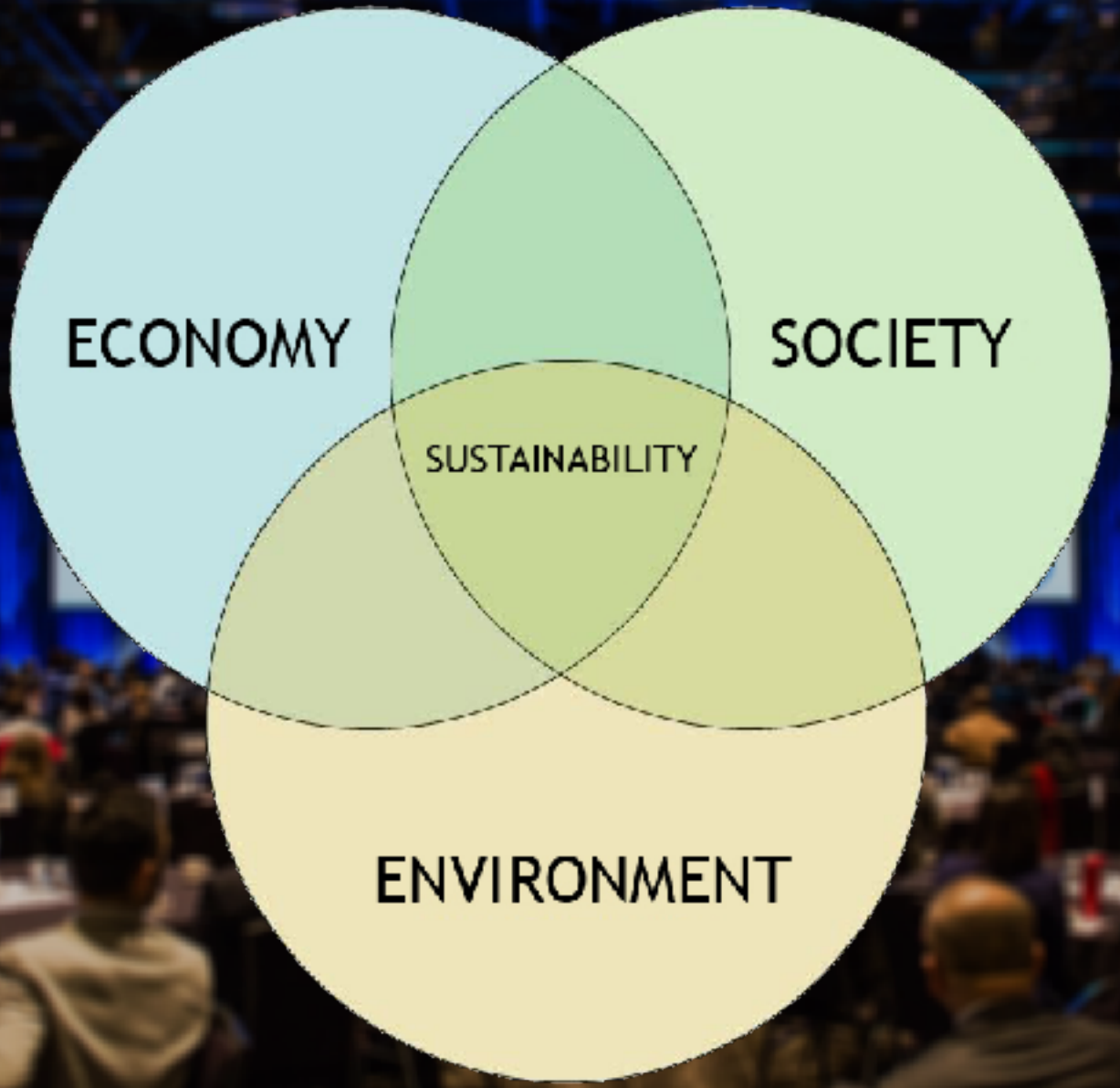
"Think globally, act locally" urges people to consider the health of the entire planet and to take action in their own communities and cities. Long before governments began enforcing environmental laws, individuals were coming together to protect habitats and the organisms that live within them. "Think Globally, Act Locally" originally began at the grassroots level, however, it is now a global concept with high importance. It is not just volunteers who take the environment into consideration. It is corporations, government

What can Real Estate Industry do?

INTERNATIONAL STEPS FOR A SUSTAINABLE DEVELOPMENT

- **ONU CONFERENCE** – STOCKHOLM – 1972
- **WORLD COMMISSION ON ENVIRONMENT AND DEVELOPMENT** (WCED) – 1987
- **CARING FOR THE EARTH** – 1991
- **WORLD SUMMIT** – RIO DE JANEIRO – 1992
- **KYOTO PROTOCOL** – 1997
- **WORLD SUMMIT** – JOHANNESBURG – 2002

PILLARS OF A SUSTAINABLE DEVELOPMENT



UNITED NATIONS CONFERENCE – RIO+20 - 2012

- It resulted in a focused political outcome document which contains clear and practical measures for implementing sustainable development.

- In Rio, Member States decided to launch a process to develop a set of **Sustainable Development Goals** (SDGs), which will build upon the Millennium Development Goals and converge with the post 2015 development agenda.

- The Conference also adopted ground-breaking guidelines on green economy policies.

- Governments also decided to establish an intergovernmental process under the General Assembly to prepare options on a

UNITED NATIONS SUSTAINABLE DEVELOPMENT SUMMIT - 2015

- Transforming our world: the 2030 Agenda for Sustainable Development.

- Speakers at the Summit welcomed the adoption of the 2030 Agenda for Sustainable Development and its **17 Sustainable Development Goals** (SDGs). They reflected on the Millennium Development Goals (MDGs) and outlined the impressive international and national achievements in implementing them, yet noted that progress has been uneven and there remains unfinished business. The SDGs were recognized as more comprehensive and complex and a springboard for continued progress.

SUSTAINABLE DEVELOPMENT GOALS

GOAL 11

Make cities and human settlements inclusive, safe, resilient and sustainable

Today, more than half the world's population lives in cities. By 2030, it is projected that 6 in 10 people will be urban dwellers. Despite numerous planning challenges, cities offer more efficient economies of scale on many levels, including the provision of goods, services and transportation. With sound, risk-informed planning and management, cities can become incubators for

TARGETS

SAFE AND AFFORDABLE HOUSING

By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums.

AFFORDABLE AND SUSTAINABLE TRANSPORT SYSTEMS

By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons

INCLUSIVE AND SUSTAINABLE URBANIZATION

By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries

PROTECT THE WORLD'S CULTURAL AND NATURAL HERITAGE

Strengthen efforts to protect and safeguard the world's cultural and natural heritage

REDUCE THE ADVERSE EFFECTS OF NATURAL DISASTERS

By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations

REDUCE THE ENVIRONMENTAL IMPACT OF CITIES

By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management.

PROVIDE ACCESS TO SAFE AND INCLUSIVE GREEN AND PUBLIC SPACES

By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities

STRONG NATIONAL AND REGIONAL DEVELOPMENT PLANNING

Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning

IMPLEMENT POLICIES FOR INCLUSION, RESOURCE EFFICIENCY AND DISASTER RISK REDUCTION

By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels.

SUPPORT LEAST DEVELOPED COUNTRIES IN SUSTAINABLE AND RESILIENT BUILDING

Support least developed countries, including through financial and technical assistance, in building sustainable and resilient buildings utilizing local materials

WHAT WILL THE FUTURE OF ARCHITECTURE LOOK LIKE?


SUSTAINABLE
CITIES
BUILDINGS
AFFORDABLE
HOUSING
BUILDINGS
CONSTRUCTIONS
WOOD
SMART
CITIES
BUILDINGS
VERTICAL
FARMS
BUILDINGS
RENOVATION
BUILDINGS
3D PRINTING
BUILDINGS
CONSTRUCTIONS
GREEN
RESILIENT
CITIES
BUILDINGS
INTEGRATED
BUILDINGS
INFRASTRUCTURE
MIX USE
BUILDINGS
BUILDINGS
SPACES
URBAN
REQUALIFICATION


PARTECIPATION
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EXPERIENCE
WATER
HARVEST
MOVEMENT
PEOPLE
TRANSPORT
WASTE REDUCE
URBAN
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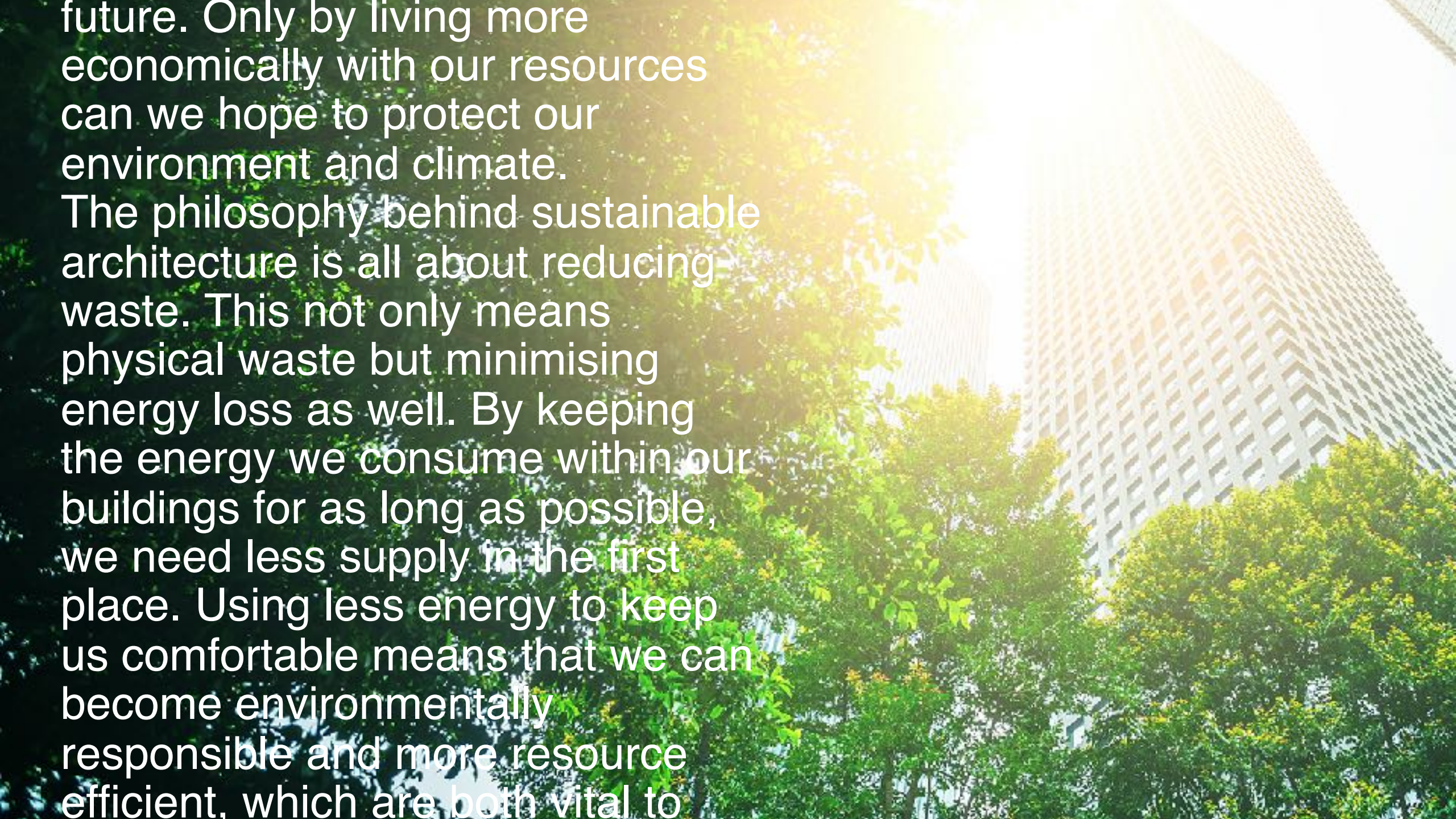
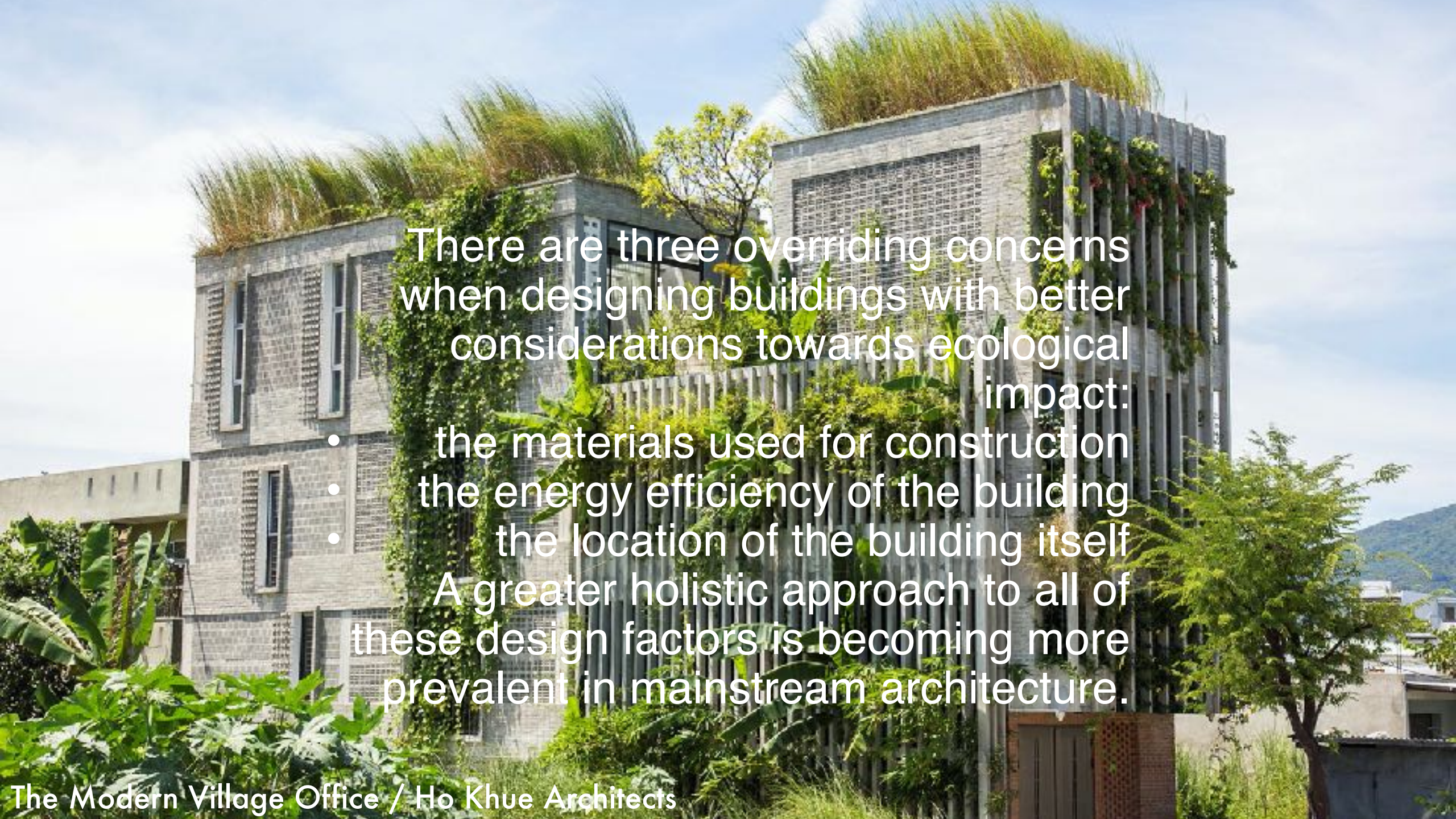
COMMUNICATIO
DATA


SUSTAINABLE BUILDINGS



future. Only by living more economically with our resources can we hope to protect our environment and climate.

The philosophy behind sustainable architecture is all about reducing waste. This not only means physical waste but minimising energy loss as well. By keeping the energy we consume within our buildings for as long as possible, we need less supply in the first place. Using less energy to keep us comfortable means that we can become environmentally responsible and more resource efficient, which are both vital to



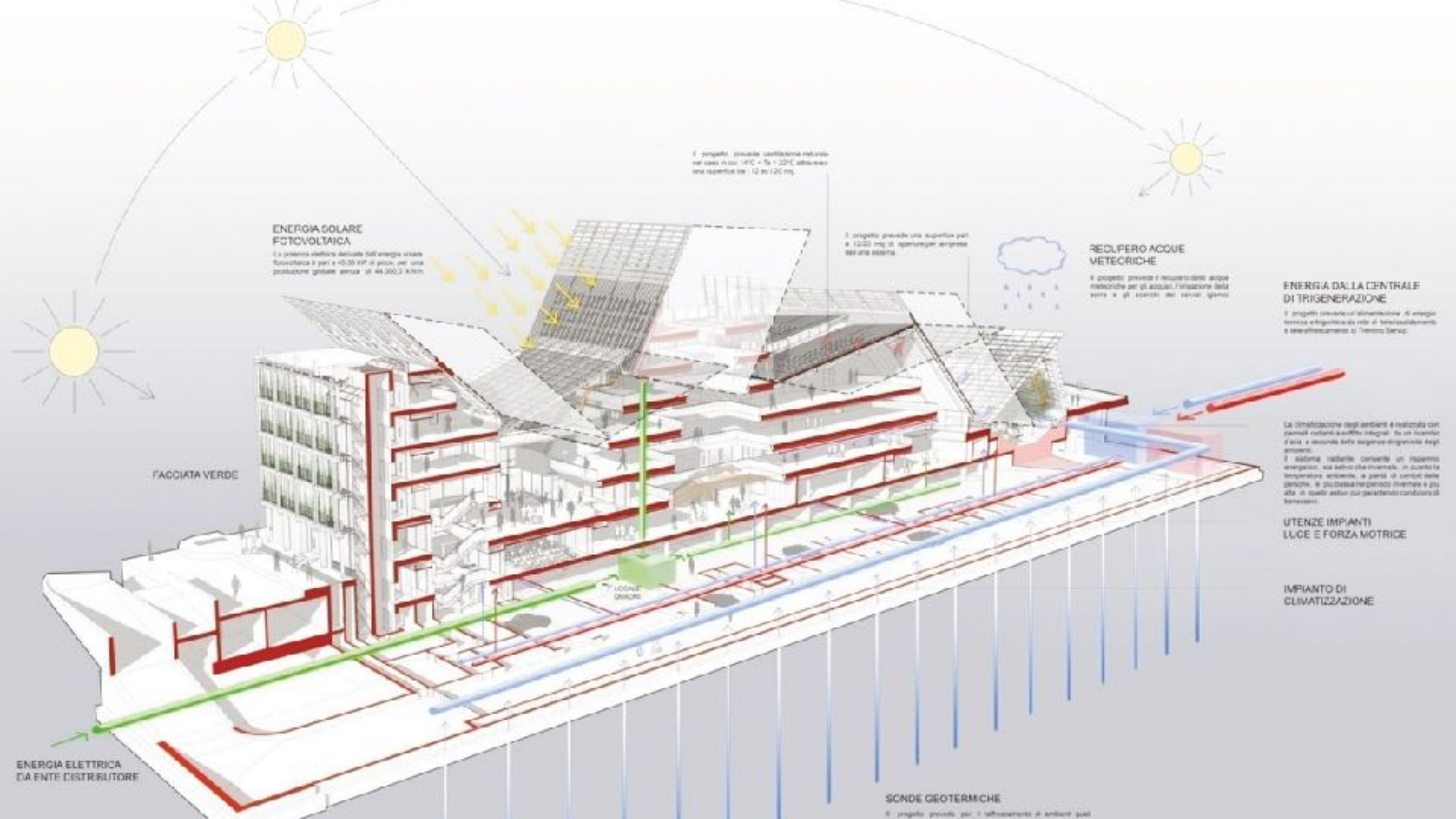
There are three overriding concerns when designing buildings with better considerations towards ecological impact:

- the materials used for construction
- the energy efficiency of the building
- the location of the building itself

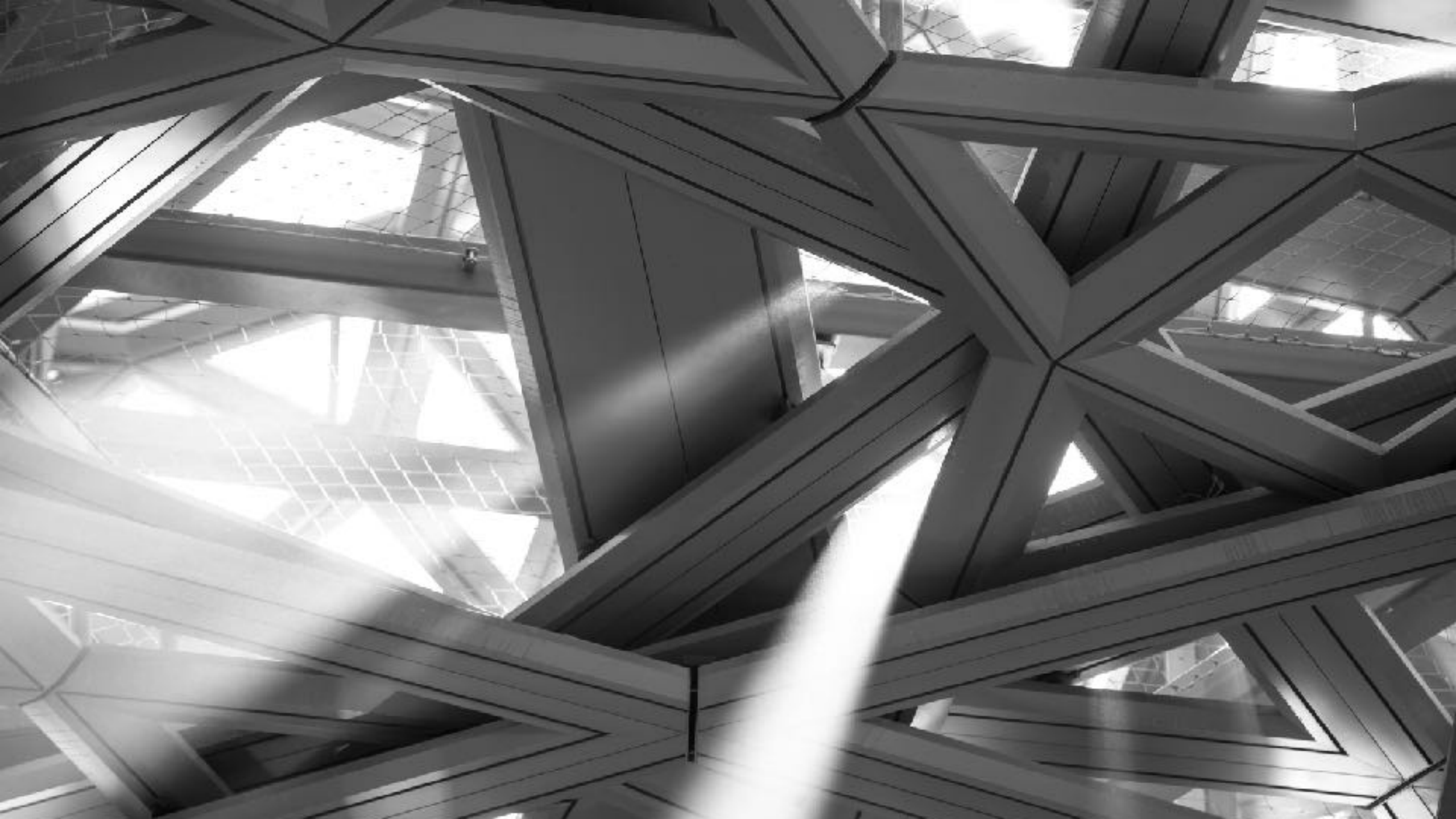
A greater holistic approach to all of these design factors is becoming more prevalent in mainstream architecture.

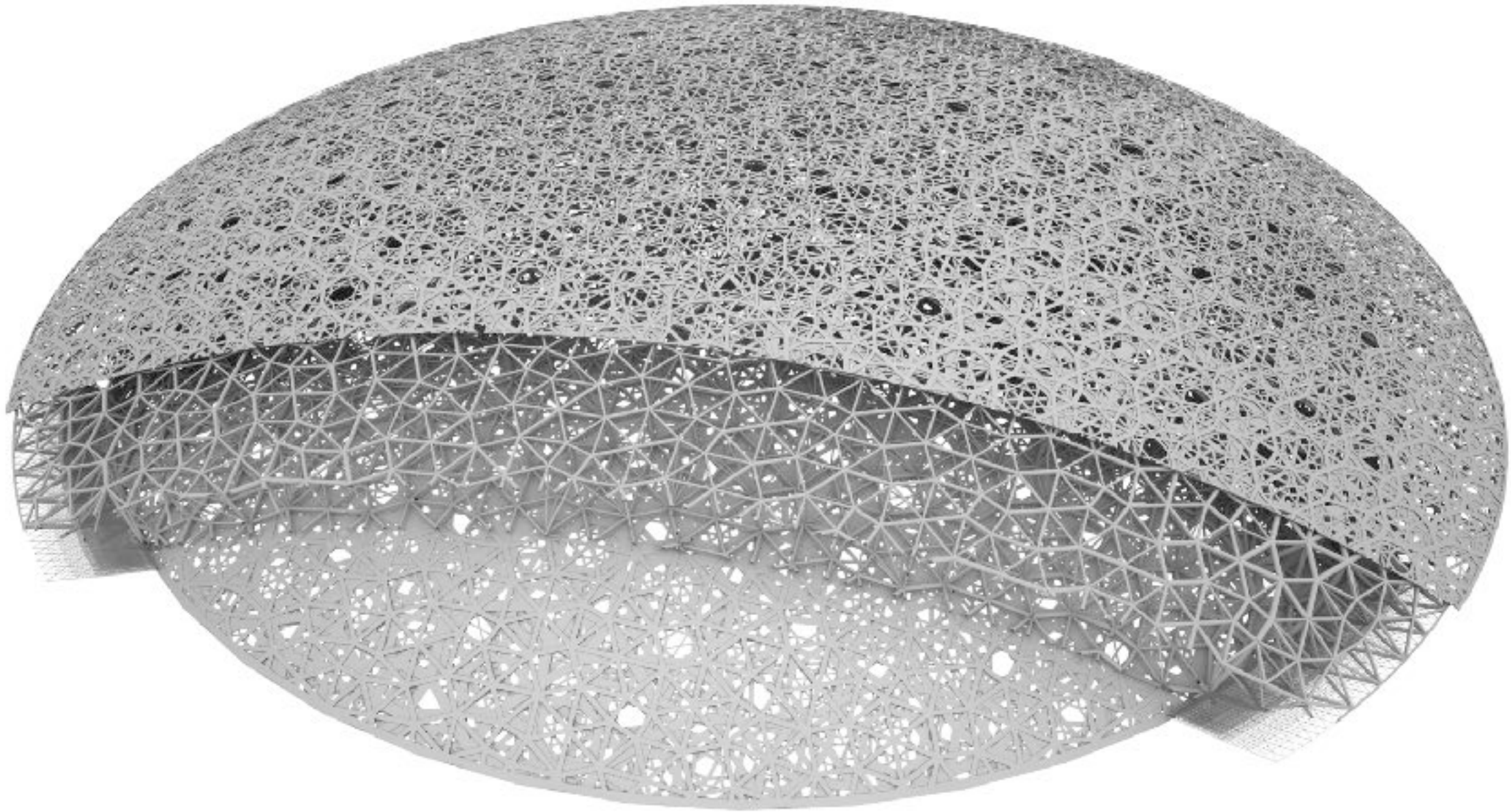
The Modern Village Office / Ho Khue Architects

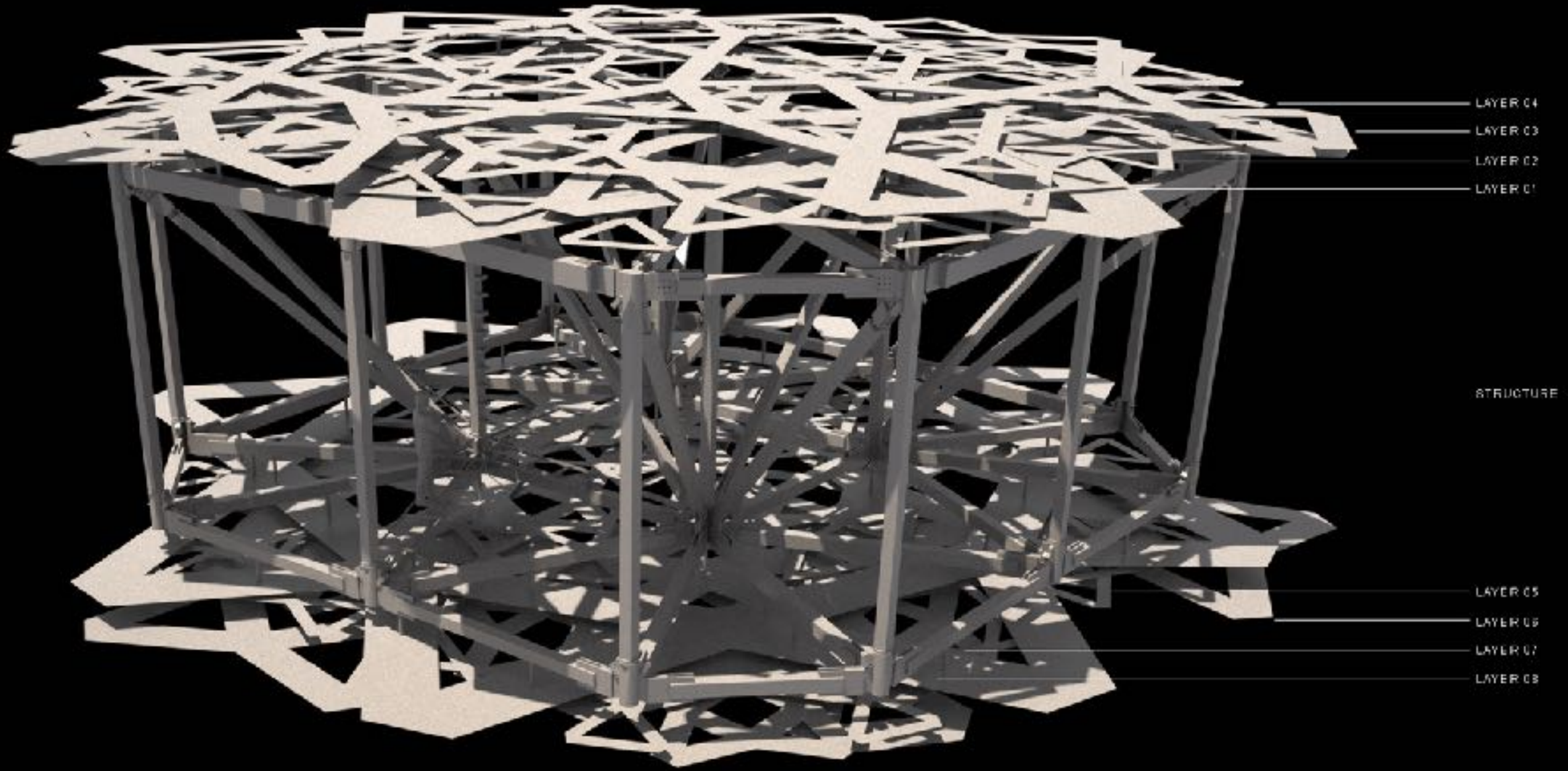
MUSE – Renzo Piano Building Workshop


ENERGIA SOLARE
FOTOVOLTAICA
RECUPERO ACQUE
METEORICHE
ENERGIA DALLA CENTRALE
DI TRIGENERAZIONE
FACCIATA VERDE
UTENZE IMPIANTI
LUCE E FORZA MOTRICE
IMPIANTO DI
CLIMATIZZAZIONE
ENERGIA ELETTRICA
DA ENTE DISTRIBUTORE
SONDE GEOTERMICHE

LOUVRE – Abu Dhabi – Jean Nouvel



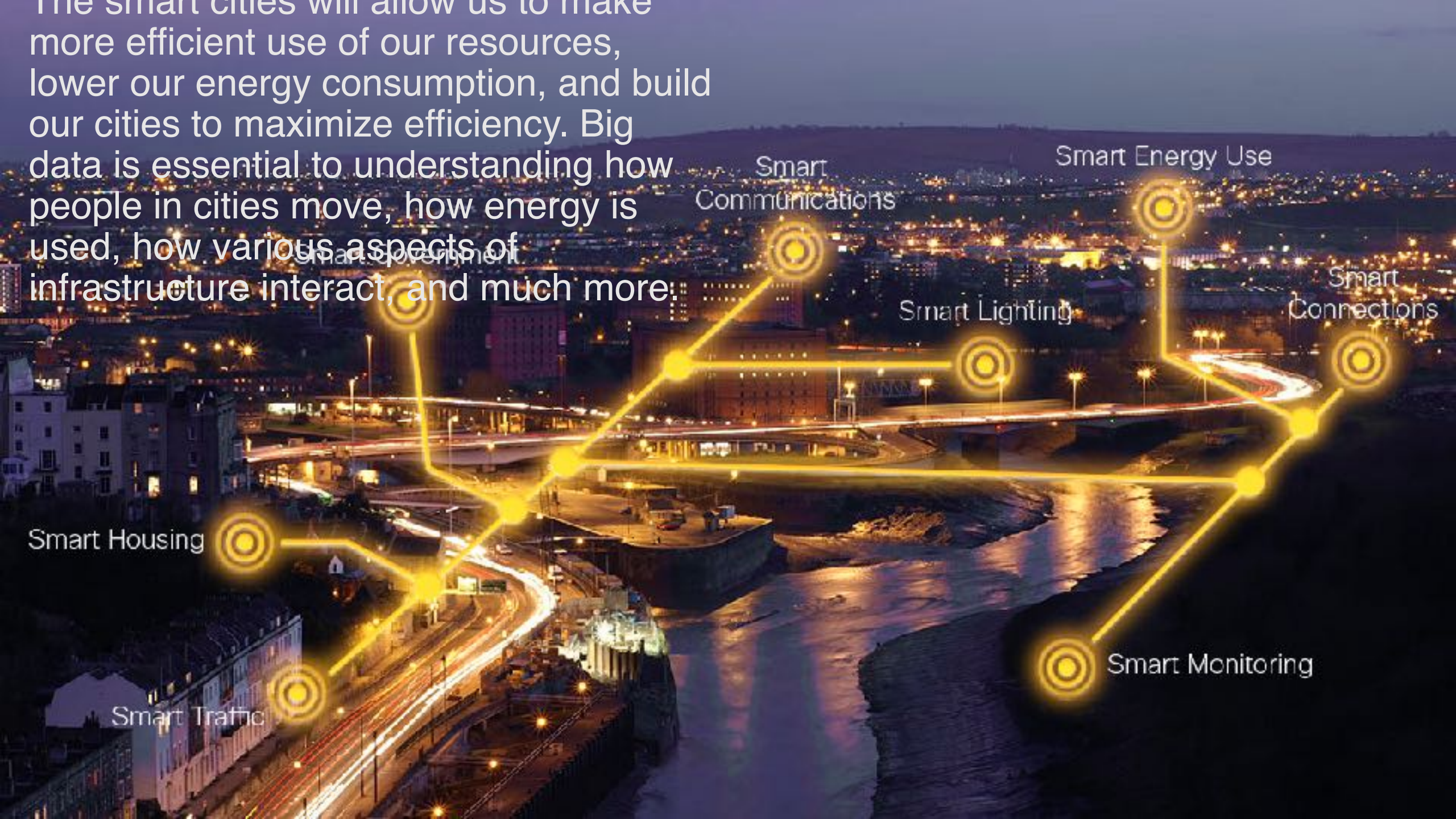



LAYER 04
LAYER 03
LAYER 02
LAYER 01
STRUCTURE
LAYER 05
LAYER 06
LAYER 07
LAYER 08

BIG DATA and SMART CITIES

As populations grow and resources become scarcer, the efficient usage of Big Data becomes very important and Smart Cities are a key factor in the consumption of materials and resources.
Built on and integrating with big data, the cities of the future are becoming a realization today and the natural step that cities will take is to become more interconnected. There are millions of sensors in place already, monitoring various things in metropolises. In the near future, these sensors will multiply until they can monitor everything from streetlights and trashcans to road conditions

The smart cities will allow us to make more efficient use of our resources, lower our energy consumption, and build our cities to maximize efficiency. Big data is essential to understanding how people in cities move, how energy is used, how various aspects of infrastructure interact, and much more.



technology — along with the increasing population — will lead to the necessary creation of smart cities. To continue providing people with safe, comfortable, and affordable places to live, cities must incorporate techniques and technologies to bring them into the future. I, for one, am looking forward to seeing the advances that will come to my city in the near future.

SMART LONDON PLAN

MAYOR OF LONDON LONDONASSEMBLY

LONDON DATASTORE

Register an Account Login

Data Blog Apps & Analysis LODA Area Profiles Boroughs More

JOBS AND ECONOMY TRANSPORT ENVIRONMENT COMMUNITY SAFETY HOUSING COMMUNITIES HEALTH LONDON AS A WORLD CITY GLA PERFORMANCE

VERTICAL CITIES and BUILDINGS

Land is becoming scarce as the world's population grows and environmental changes shrink the amount of livable space on Earth. To be sustainable, cities will need to become more space savvy – making room for not only more commercial and residential spaces but infrastructure and public services that will be able to cope with an increased population, such as roads, schools and hospitals.

de Architekten Cie - Odintsovo 2020 Eco-City Proposal

ATENA STUDIO – WUXI CITY

JFA+CHARTIER DALIX+SLA – REINVENT PARIS

JFA+CHARTIER DALIX+SLA – REINVENT PARIS

Herzog & De Meuron – Beirut Terraces

Herzog & De Meuron – Beirut Terraces

GREEN BUILDINGS and SPACES

While the idea of vertical cities is becoming ever popular, vertical farming is already a reality and is a step closer to our new high-rise urban dwellings. Controlled farming has become popular with many horticulturists and entrepreneurs as the solution to the negative affects traditional farming can have on our environment. Whilst also supporting the increase in demand, as the population gets bigger and available farmland gets smaller.

Frank Lloyd. Wright– Falling Water House

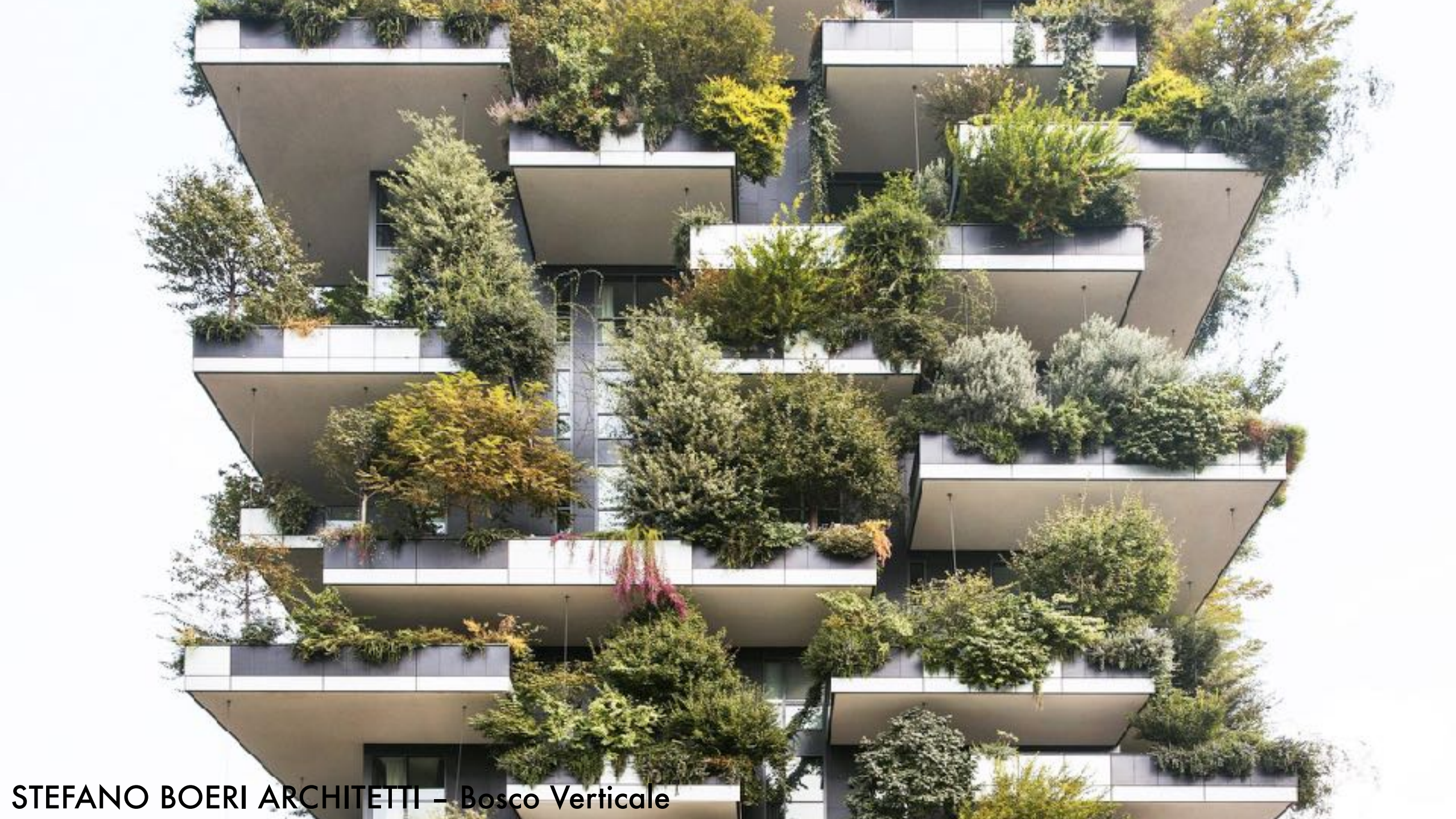
SOU FUJIMOTO – Canopia Bordeaux

SOU FUJIMOTO – Canopia Bordeaux

Carlo Ratti Associati – Big Cra Singapore

Carlo Ratti Associati – Big Cra Singapore

Esme swimming, Parkroyal on Pickering, Singapore



STEFANO BOERI ARCHITETTI – Bosco Verticale

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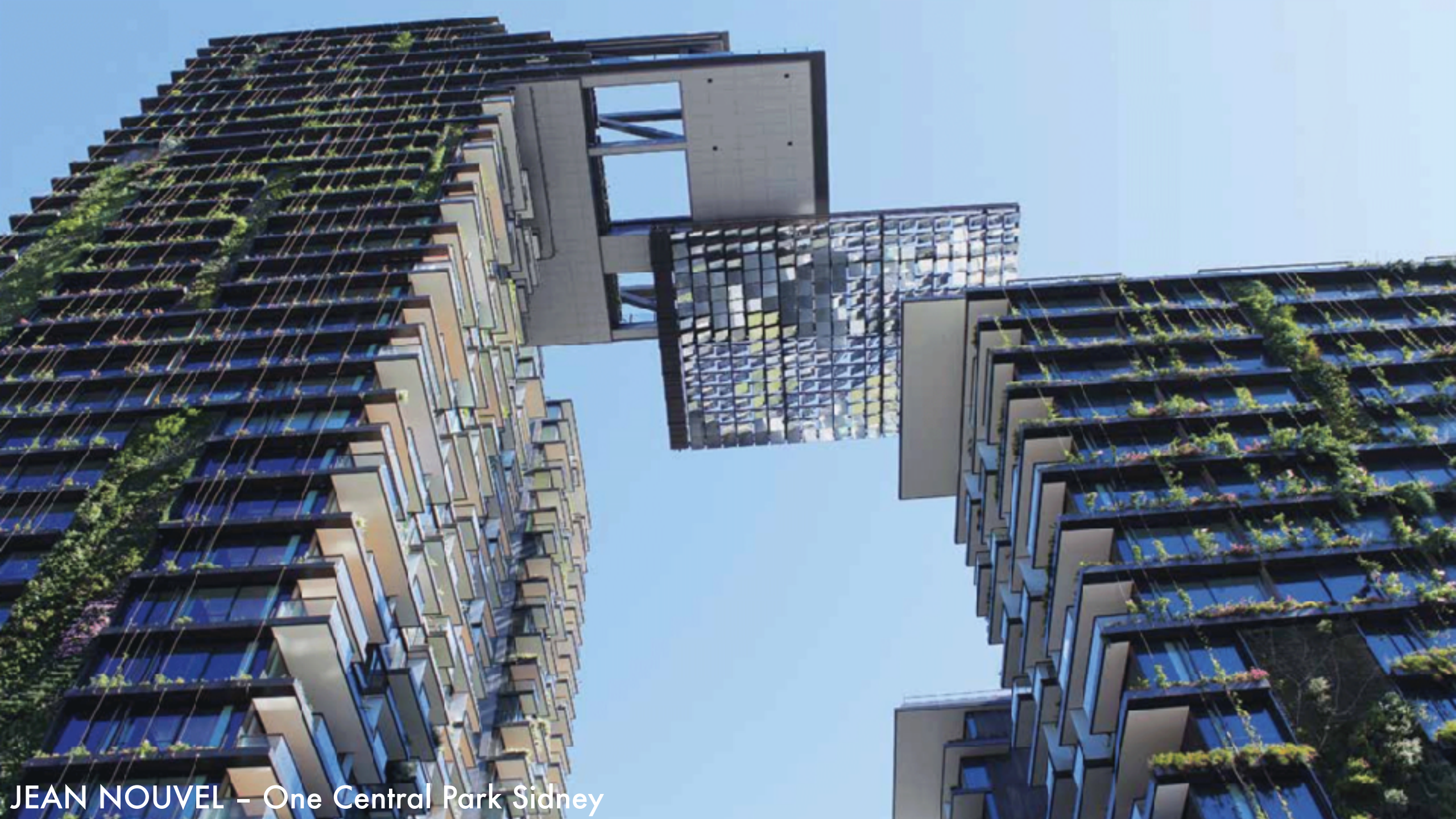
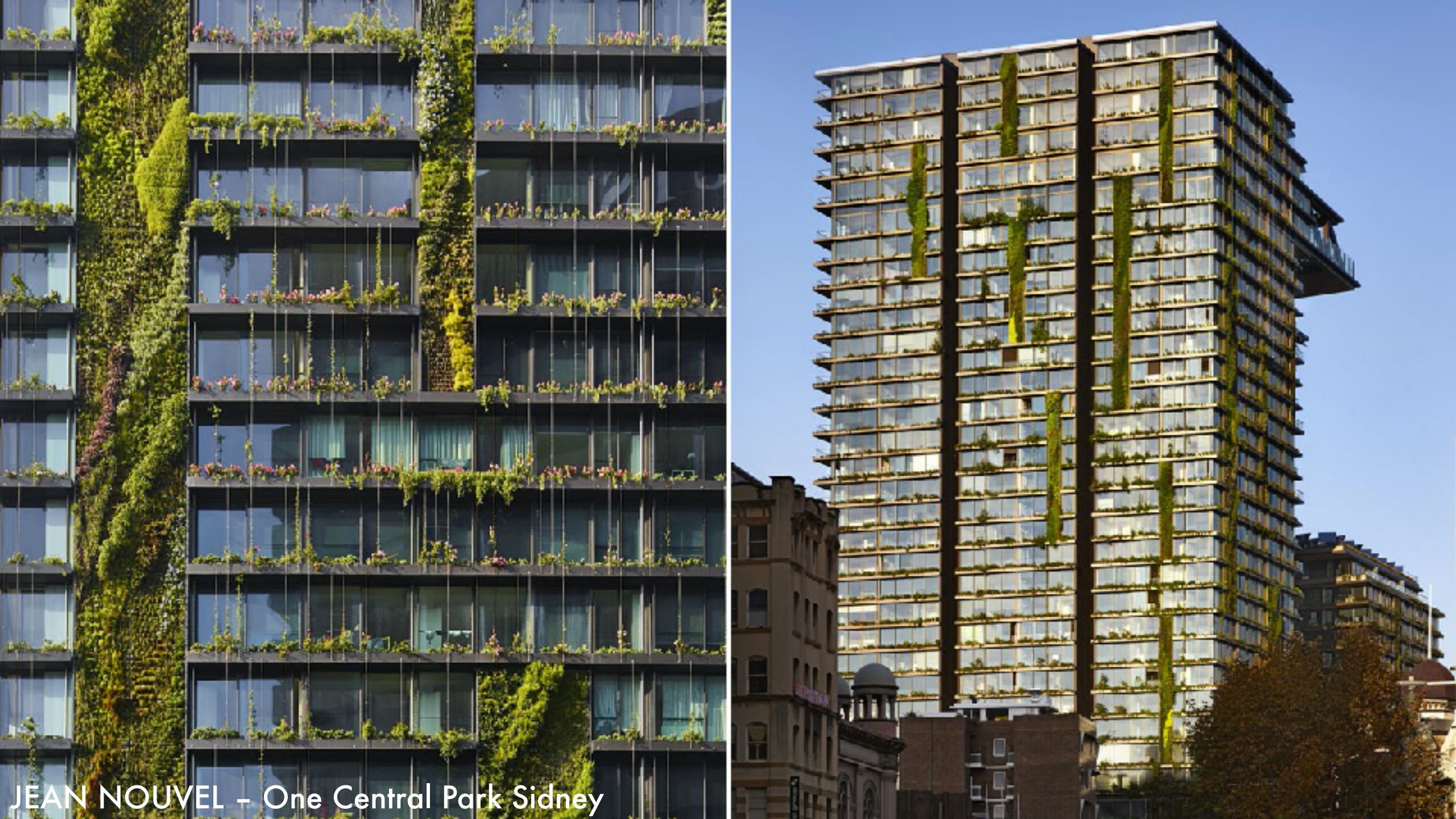
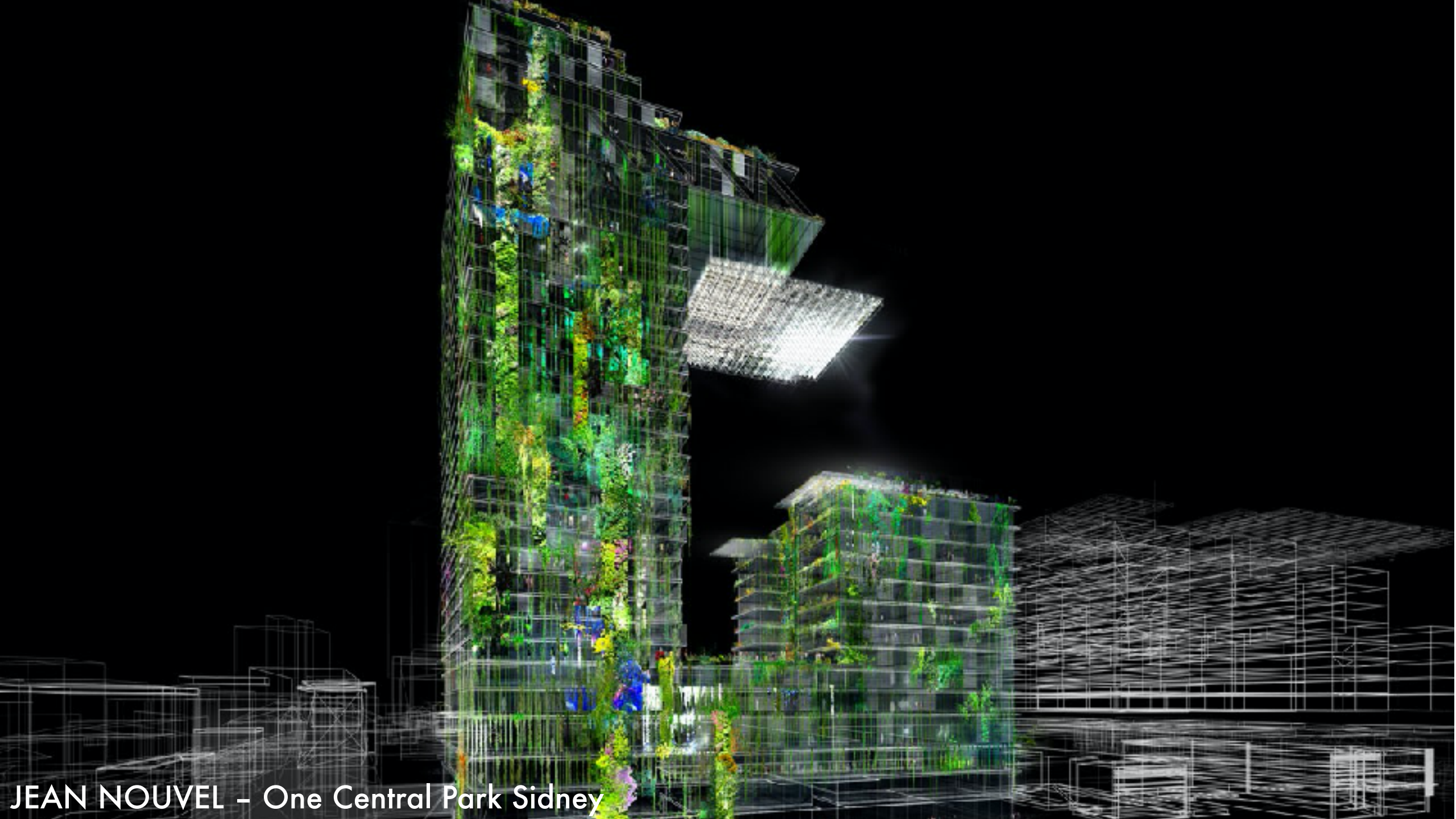
JEAN NOUVEL – One Central Park Sidney



JEAN NOUVEL – One Central Park Sidney



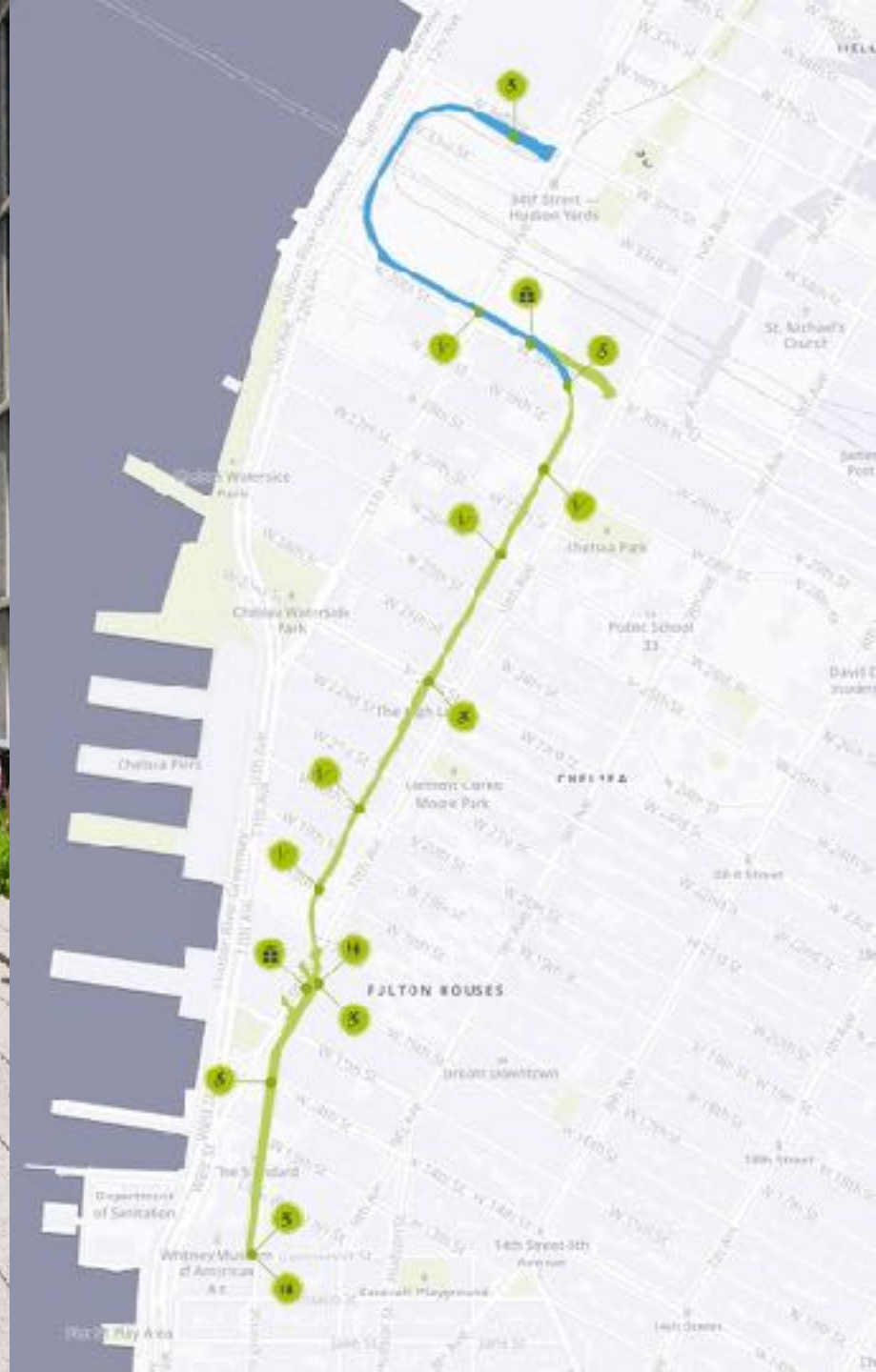
JEAN NOUVEL – One Central Park Sidney



JEAN NOUVEL – One Central Park Sidney

JEAN NOUVEL – One Central Park Sidney

High Line – New York



High Line – New York

High Line – New York

High Line – New York

High Line – New York

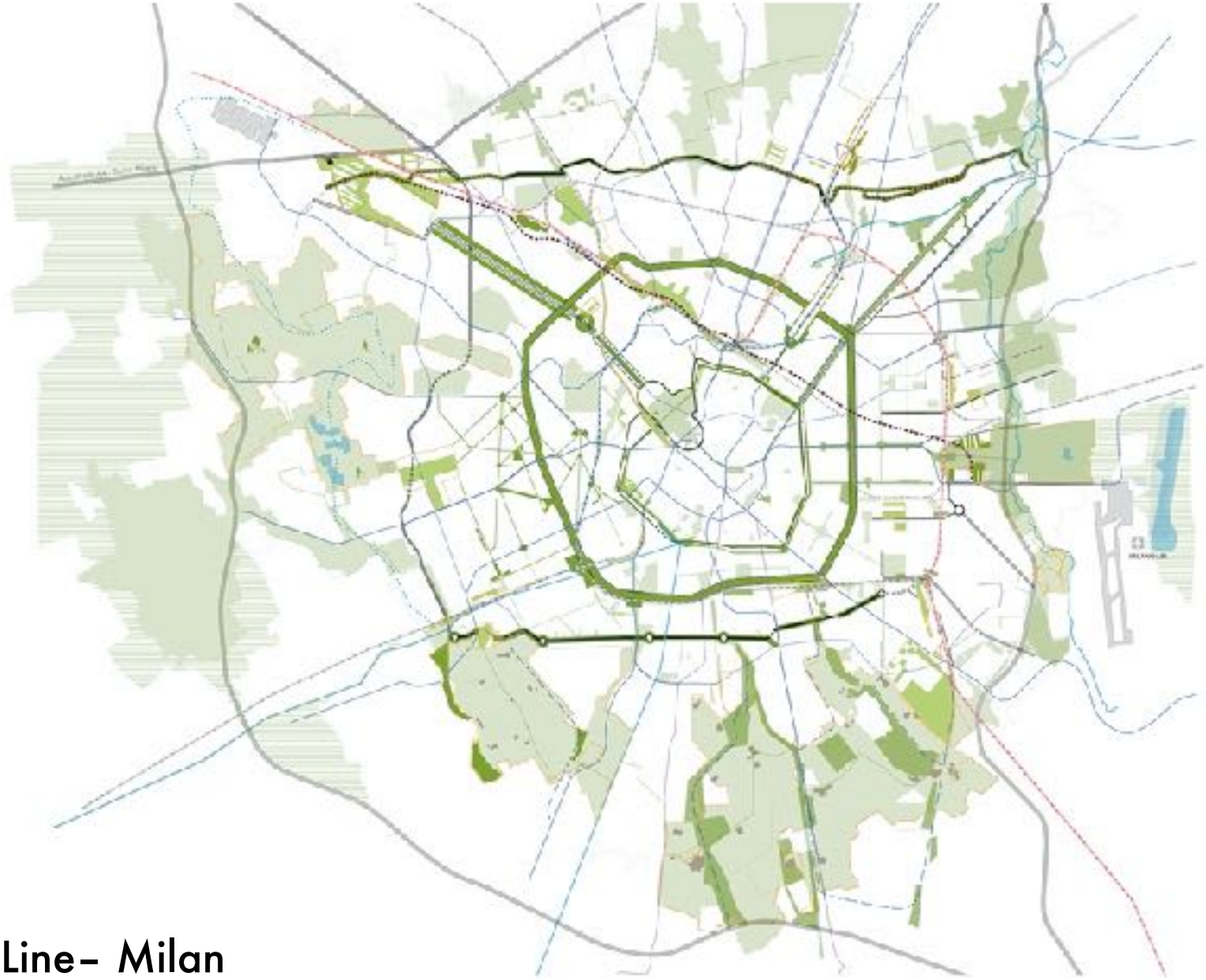
High Line – New York


Marina Bay – Singapore

Marina Bay – Singapore

Marina Bay – Singapore

Marina Bay – Singapore



- la Passeggiata Urbana dei Bastioni
- il Ring dei Viali delle Regioni
- il Parco delle Cascine
- West Park dell'Intrattenimento ad Ovest
- il Parco dello Sport di Lambro
- il Filo Rosso e i Raggi Ciclabili
- l'Arco Verde dei Giardini Lombardi
- la Circle Line
- le Porte Verdi del Lambro in città
- le Rotonde per l'Arte
- la Greenway Sud
- l'Interquartiere
- la Ronda
- il Fiume di Milano
- i Boulevard Monumentali

Circle Line– Milan

Circle Line– Milan

Circle Line– Milan


Circle Line – Milan

Circle Line – Milan


Circle Line– Milan

Circle Line – Milan


Circle Line– Milan

Circle Line– Milan

WOODEN STRUCTURE and BUILDINGS

Nikken Sekkei – W350 Tokio

Nikken Sekkei - W350 Tokio

Nikken Sekkei – W350 Tokio

Nikken Sekkei – W350 Tokio


MIX
USE


RESILIENT
CITIES


Understand local climate
Identify vulnerabilities, risks and impact
Formulate adaptation options
Assess and prioritise options
Implement measures
Monitor and evaluate effectiveness
Review strategies
Resilience Framework

A comprehensive climate resiliency plan for New York City was announced in June 2013 and continues to serve as the roadmap for the city's climate adaptation efforts. With OneNYC, the City expands and accelerates that roadmap to build a stronger, more resilient New York City with several new concepts and focus areas.


2


Neighborhoods
Every city neighborhood will be safer by strengthening community, social, and economic resiliency.
Infrastructure
Infrastructure systems across the region will adapt to maintain continued services

Coastal Defense
New York City's coastal defenses will be strengthened against flooding and sea level rise

MULTIDISCIPLINARY ROLE

Architecture as we know it is likely to disappear and, in the future, the role of architects may be very different to how we recognize it today. Specialists in, for example, environmental science and social anthropology will become active team members in design studios, working on complex projects that require knowledge in different fields.

It is reasonable to expect that the emergence of specialists from various fields will eliminate many of the job profiles currently existing in the construction industry.

Experts say collaboration with system leaders

THANKS FOR YOUR ATTENTION