

MATI EXPERIENCE

**PROGETTARE IN MODO
SOSTENIBILE**

Architetto Marco Matteini

MATTEINI+ASSOCIATES

























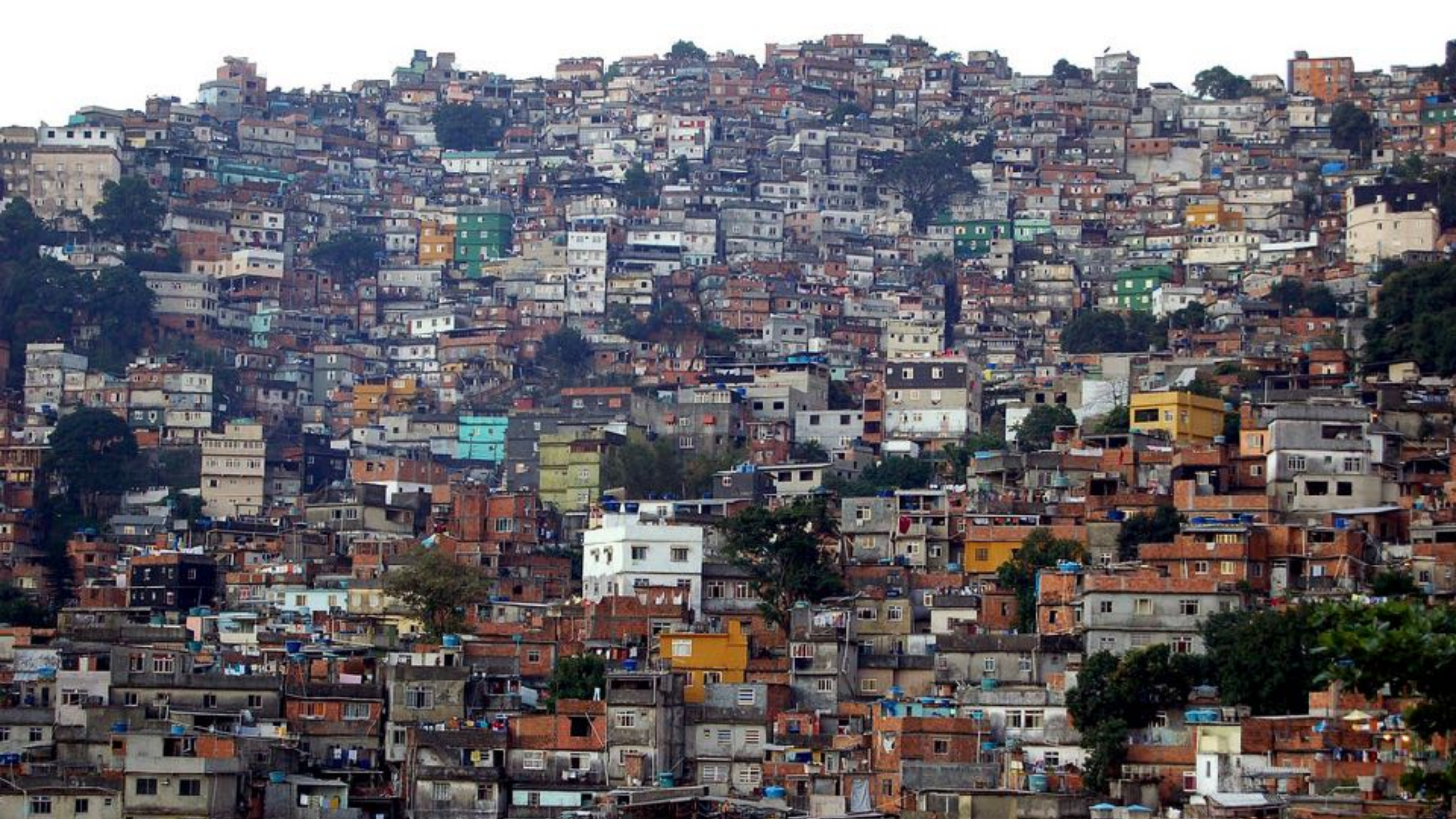


























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안경원
カナ眼鏡院
명동점 명동점
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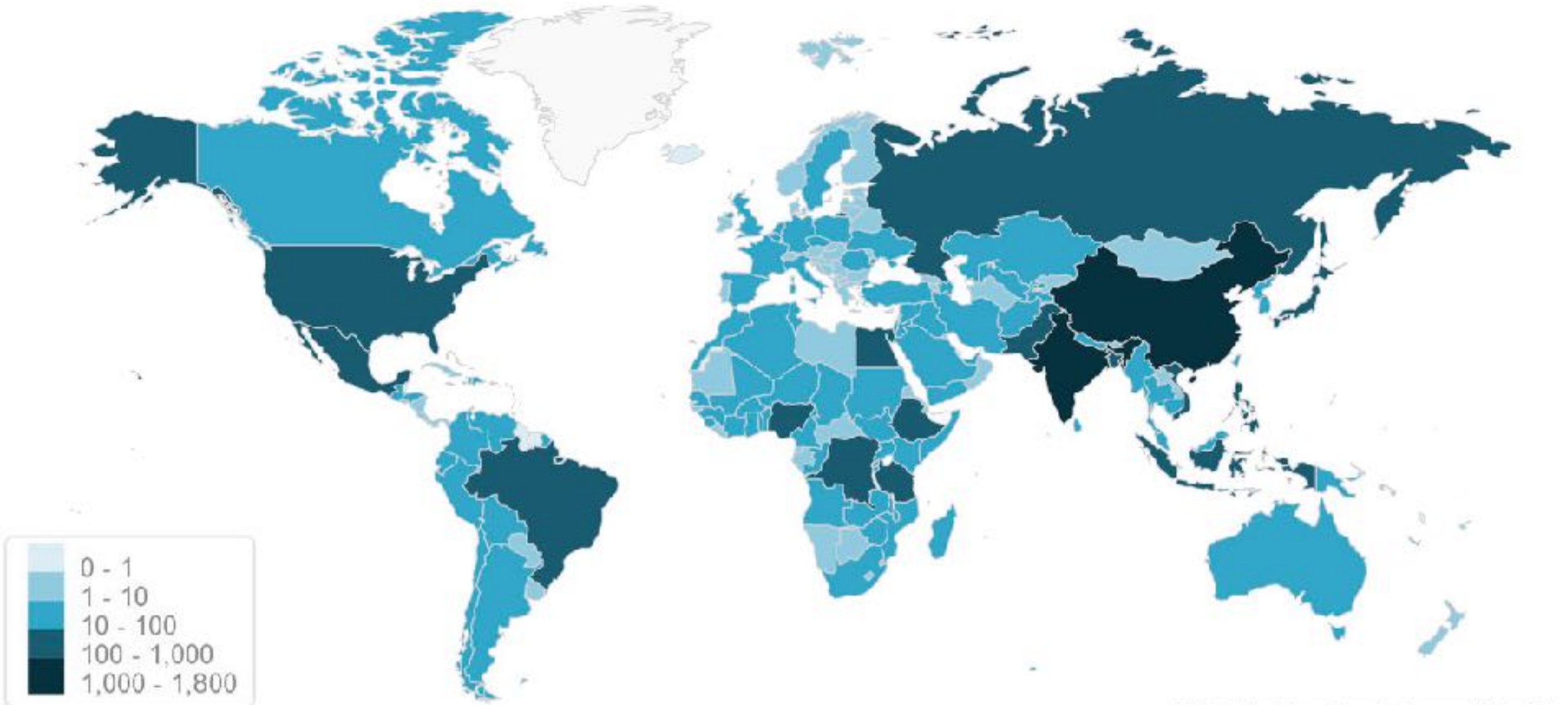




HUMAN POPULATION GROWTH

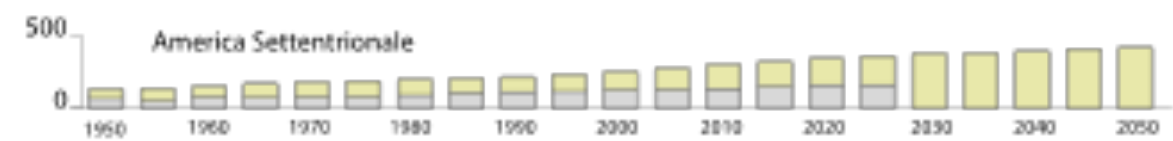
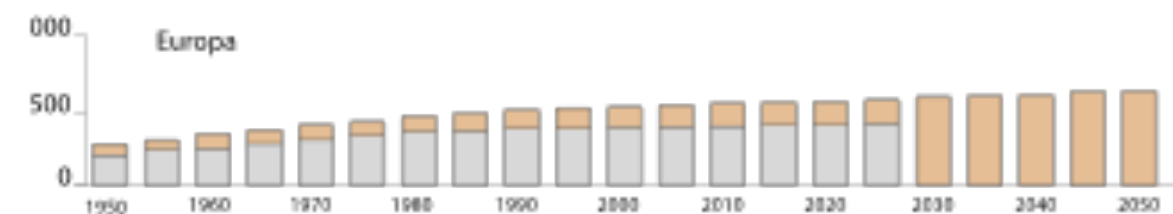
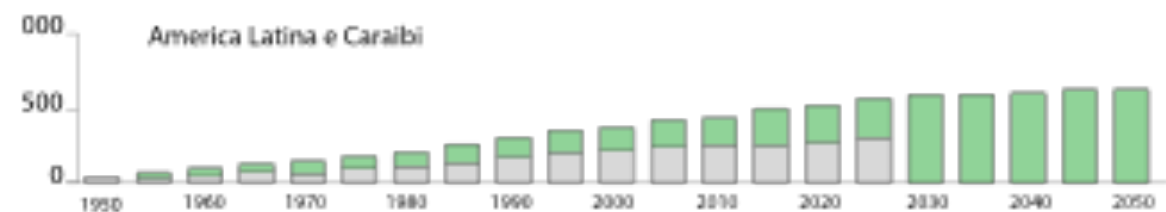
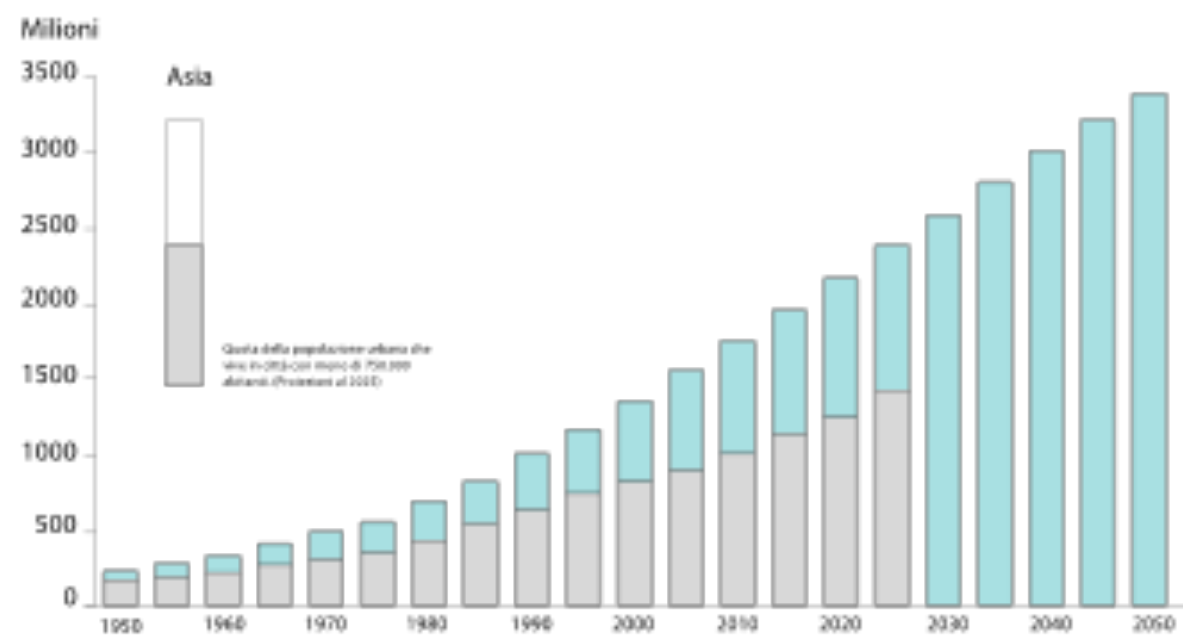
NEW URBANIZATION
TREND?

WORLD POPULATION (millions) - 2050

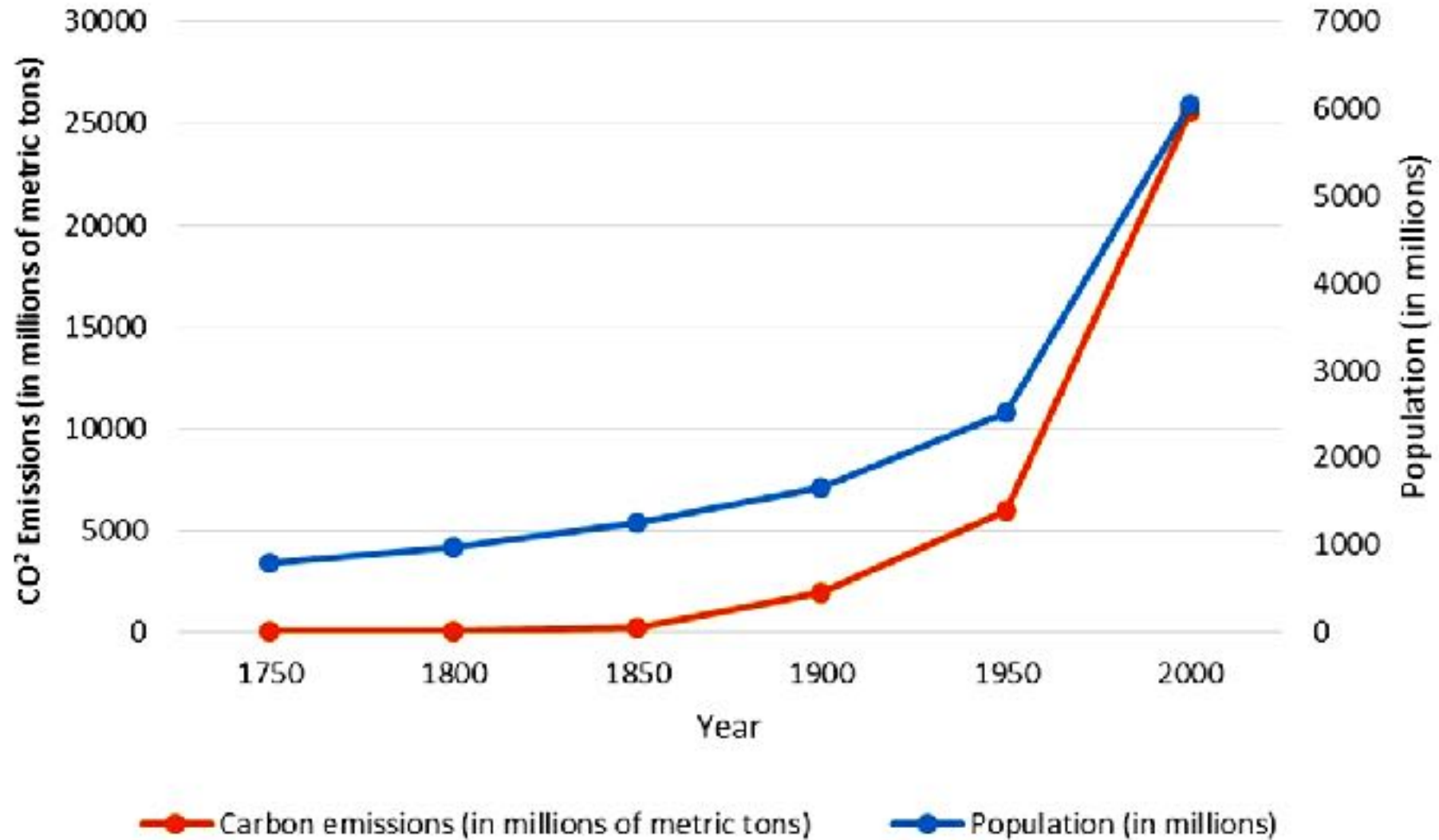


WORLD POPULATION RANKING 2017-2050 (millions)

2017		2050	
CHINA	1,387 MILLION	INDIA	1,676 MILLION
INDIA	1,353 MILLION	CHINA	1,343 MILLION
UNITED STATES	325 MILLION	NIGERIA	411 MILLION
INDONESIA	264 MILLION	UNITED STATES	397 MILLION
BRAZIL	208 MILLION	INDONESIA	322 MILLION
PAKISTAN	199 MILLION	PAKISTAN	311 MILLION
NIGERIA	191 MILLION	BRAZIL	231 MILLION



GLOBAL POPULATION GROWTH and CO₂ EMISSIONS

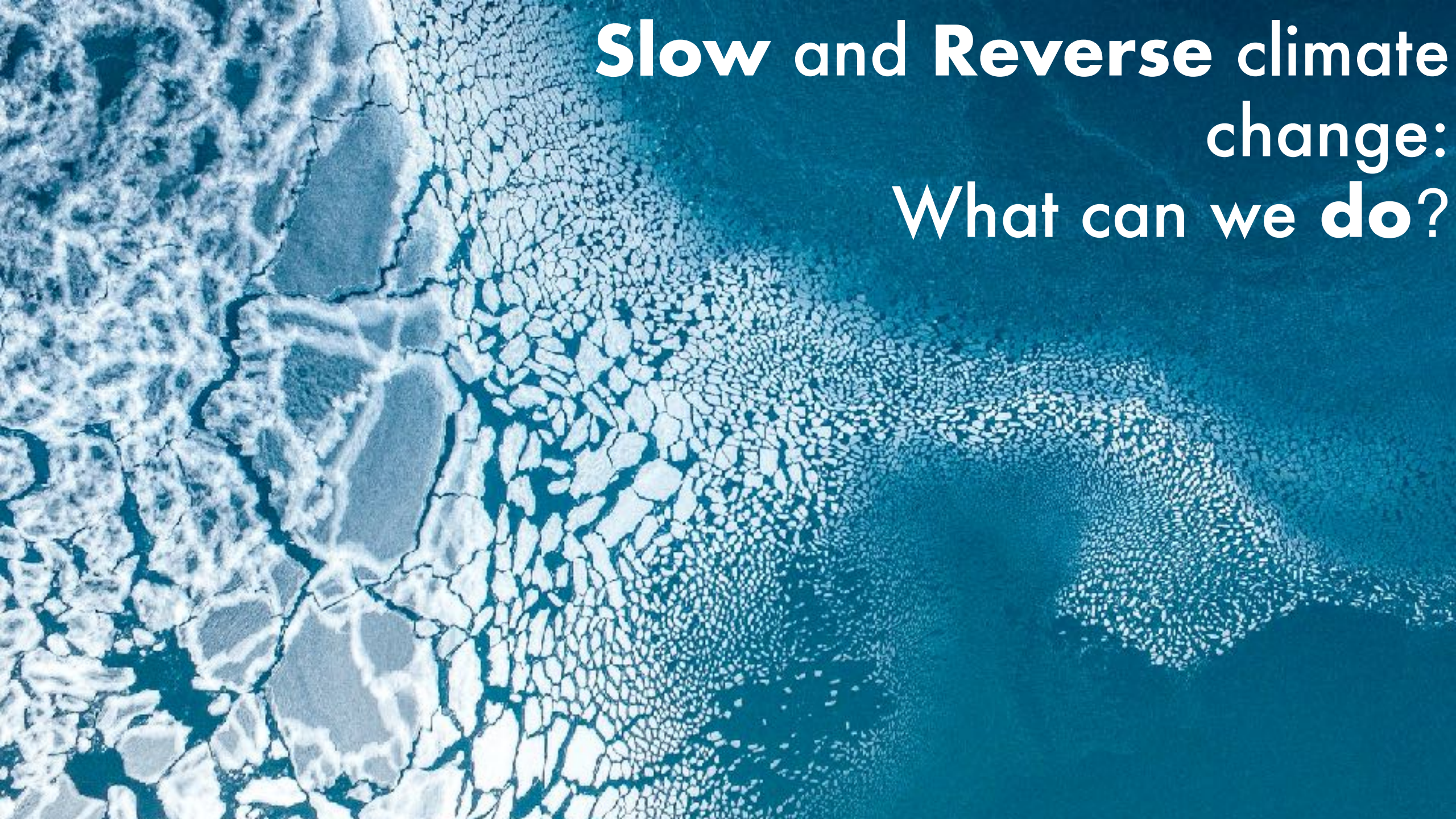




CLIMATE CHANGE

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

"Think globally, act locally"

uses 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

United Nations

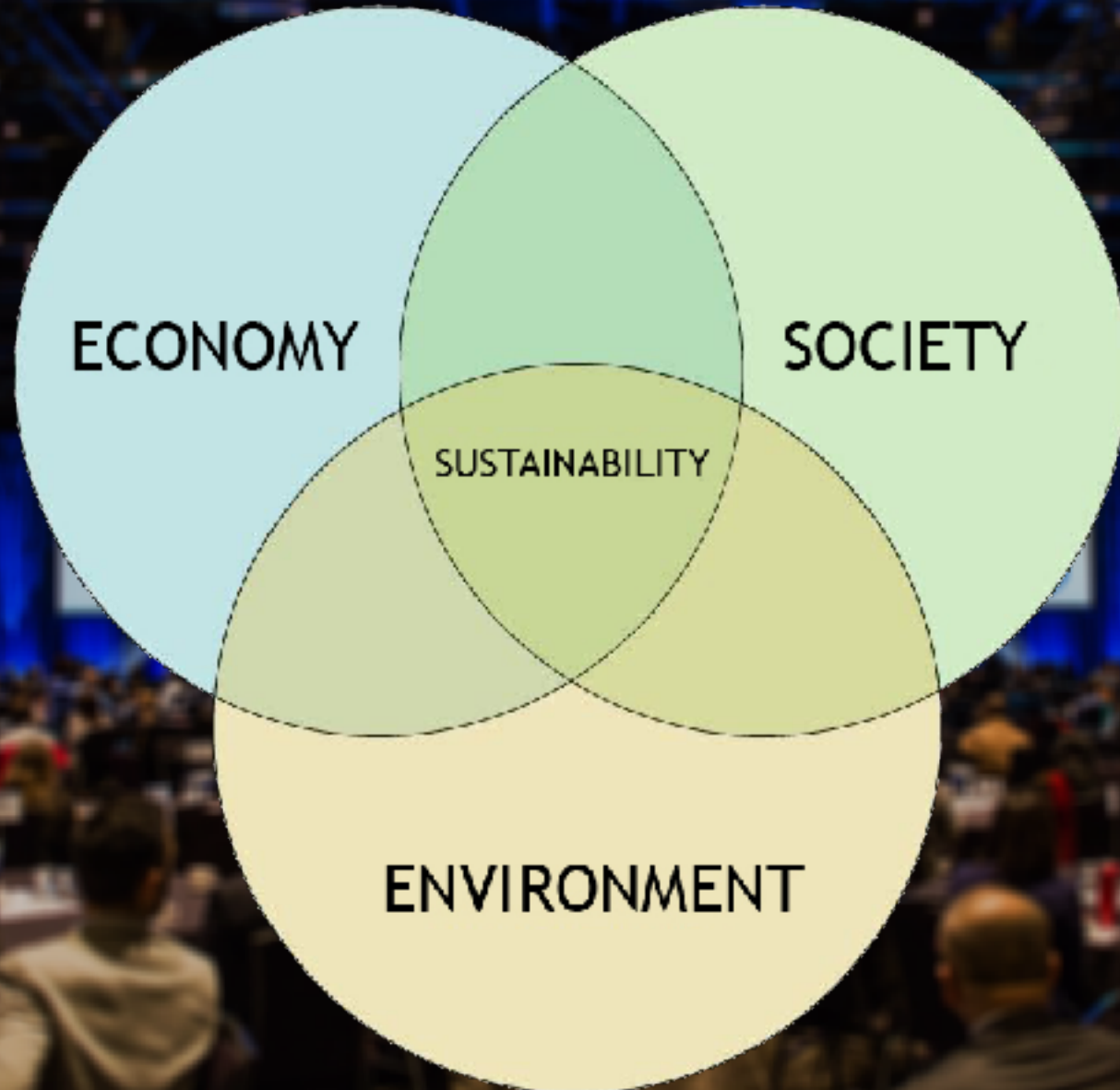
WORLD SUMMIT ON SUSTAINABLE DEVELOPMENT

JOHANNESBURG, SOUTH AFRICA • AUGUST 16-17 • AUGUST 18-19 • AUGUST 20-21 • AUGUST 22-23 • AUGUST 24-25 • AUGUST 26-27 • AUGUST 28-29 • AUGUST 30-31 • SEPTEMBER 1-2 • SEPTEMBER 3-4 • SEPTEMBER 5-6 • SEPTEMBER 7-8 • SEPTEMBER 9-10 • SEPTEMBER 11-12 • SEPTEMBER 13-14 • SEPTEMBER 15-16 • SEPTEMBER 17-18 • SEPTEMBER 19-20 • SEPTEMBER 21-22 • SEPTEMBER 23-24 • SEPTEMBER 25-26 • SEPTEMBER 27-28 • SEPTEMBER 29-30 • SEPTEMBER 31



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- **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

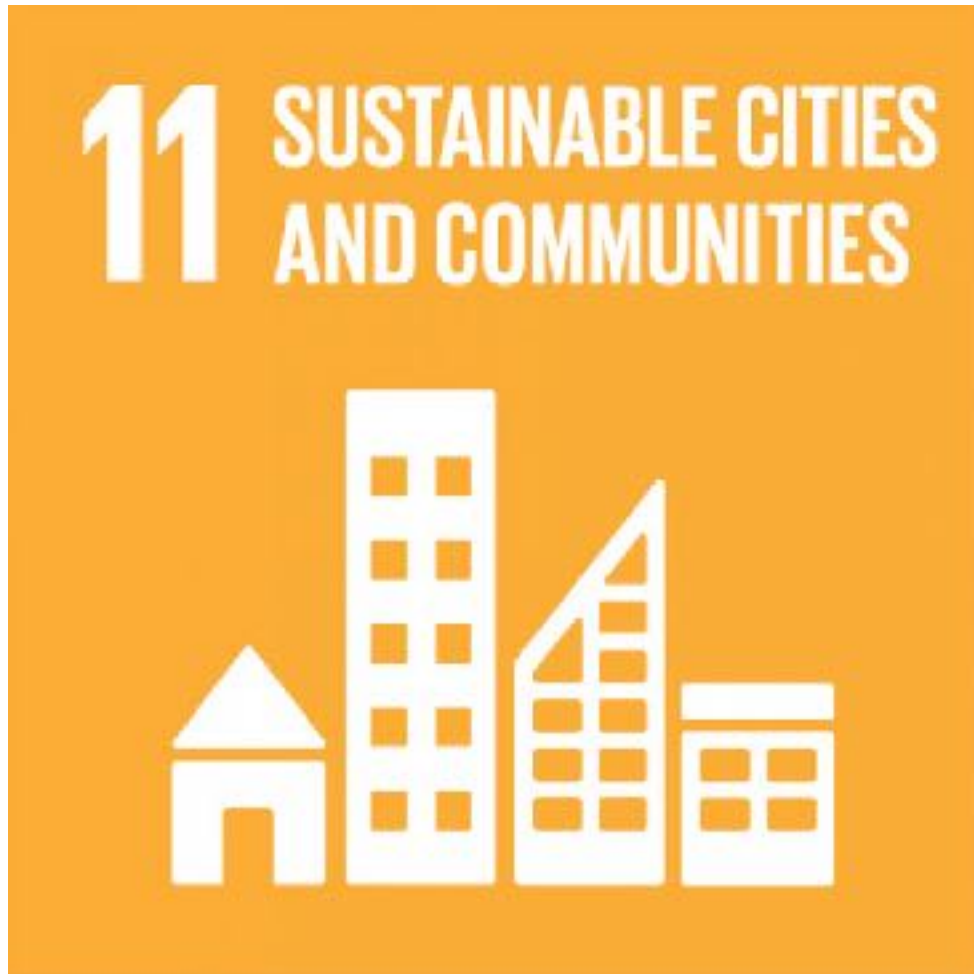
UNITED NATIONS SUSTAINABLE DEVELOPMENT SUMMIT - 2015

- 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



TARGET 11.2

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.



TARGET 11.5

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.



TARGET 11.A

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.



TARGET 11.B

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.



TARGET 11.C

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.



TARGET 11.D

IMPLEMENT POLICIES FOR INCLUSION, RESOURCE EFFICIENCY AND DISASTER RISK REDUCTION

By 2030, 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.



TARGET 11.E

SAFE AND AFFORDABLE HOUSING

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



TARGET 11.F

PROTECT THE WORLD'S CULTURAL AND NATURAL HERITAGE

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



TARGET 11.G

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.



TARGET 11.H

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.

A blurred night view of a city skyline reflected in water, with a modern architectural structure in the foreground. The text "WHAT WILL THE FUTURE OF ARCHITECTURE LOOK LIKE?" is overlaid in white, bold, sans-serif font at the bottom of the image.

WHAT WILL THE FUTURE OF
ARCHITECTURE LOOK LIKE?

SUSTAINABLE

CITIES
BUILDINGS

RESILIENT

CITIES
BUILDINGS

LE AFFORDABLE

HOUSING

INTEGRATED

BUILDINGS
INFRASTRUCTURE

URBAN

BUILDINGS
CONSTRUCTIONS

CITIES
BUILDINGS

MIX

BUILDINGS

USE

VERTICAL

FARMS
BUILDINGS

SMART

INT GREEN

BUILDINGS
SPACES

WOOD

RENOVATION

BUILDINGS

3D PRINTING

BUILDINGS
CONSTRUCTIONS

REQUALIFICATION

PARTECIPATION

CITIZEN

GROUN

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D

RECICLIN

MATERIALS
ENERGY

SPACE

PUBLIC
PRIVATE

SHARING

KNOWLEDGE
EXPERIENCE

WATER

HARVEST

MOVEMENT

PEOPLE
TRANSPORT

COMMUNICATIO

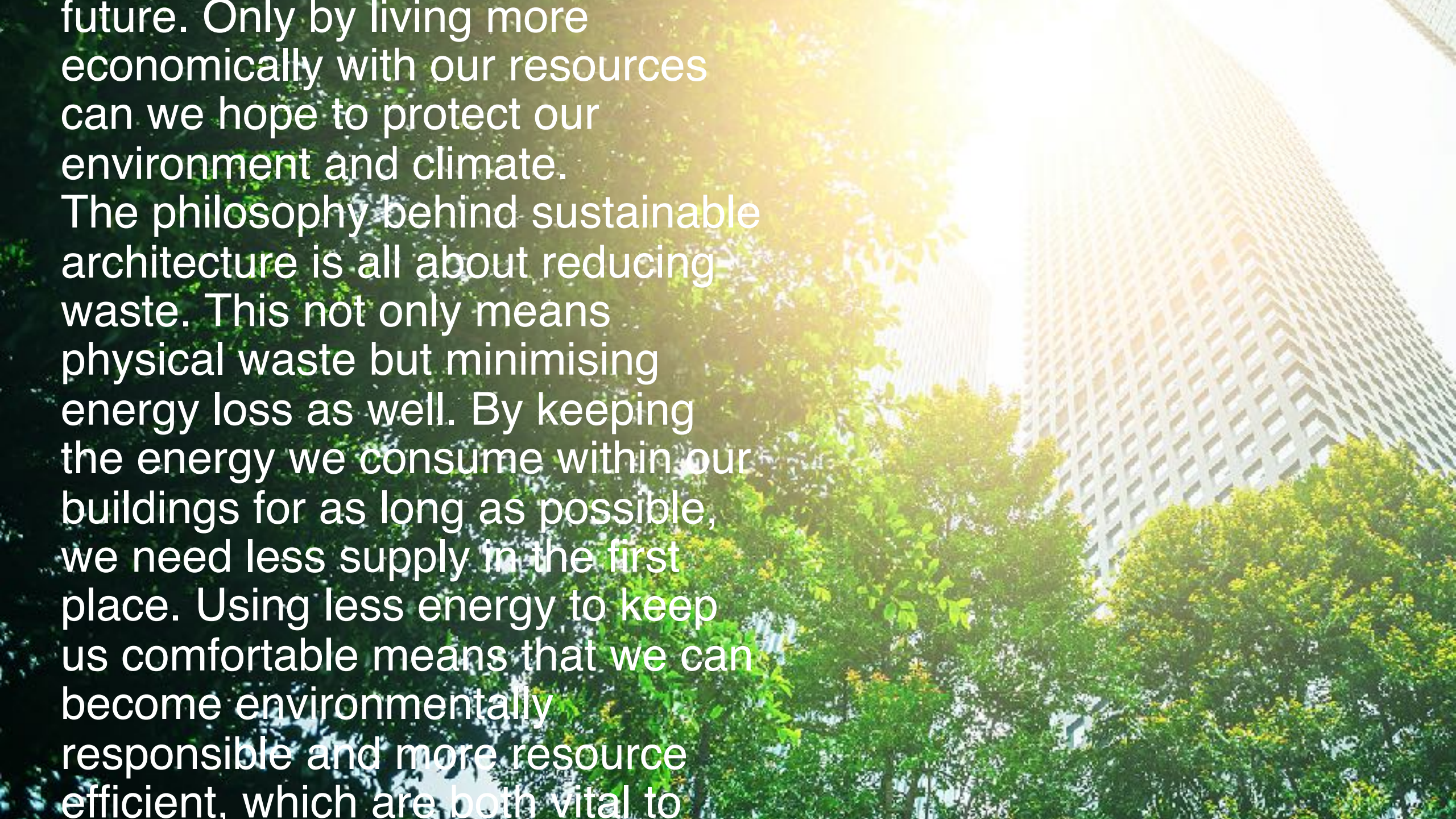
DATA

WASTE REDUCE

URBAN
BUILDINGS



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

A modern, multi-story building with a green roof and a facade covered in vertical gardens. The building features a mix of materials, including brick and concrete, and has large windows. The surrounding area is lush with greenery, including trees and plants. The sky is blue with some clouds.

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.



MUSE – Renzo Piano Building Workshop



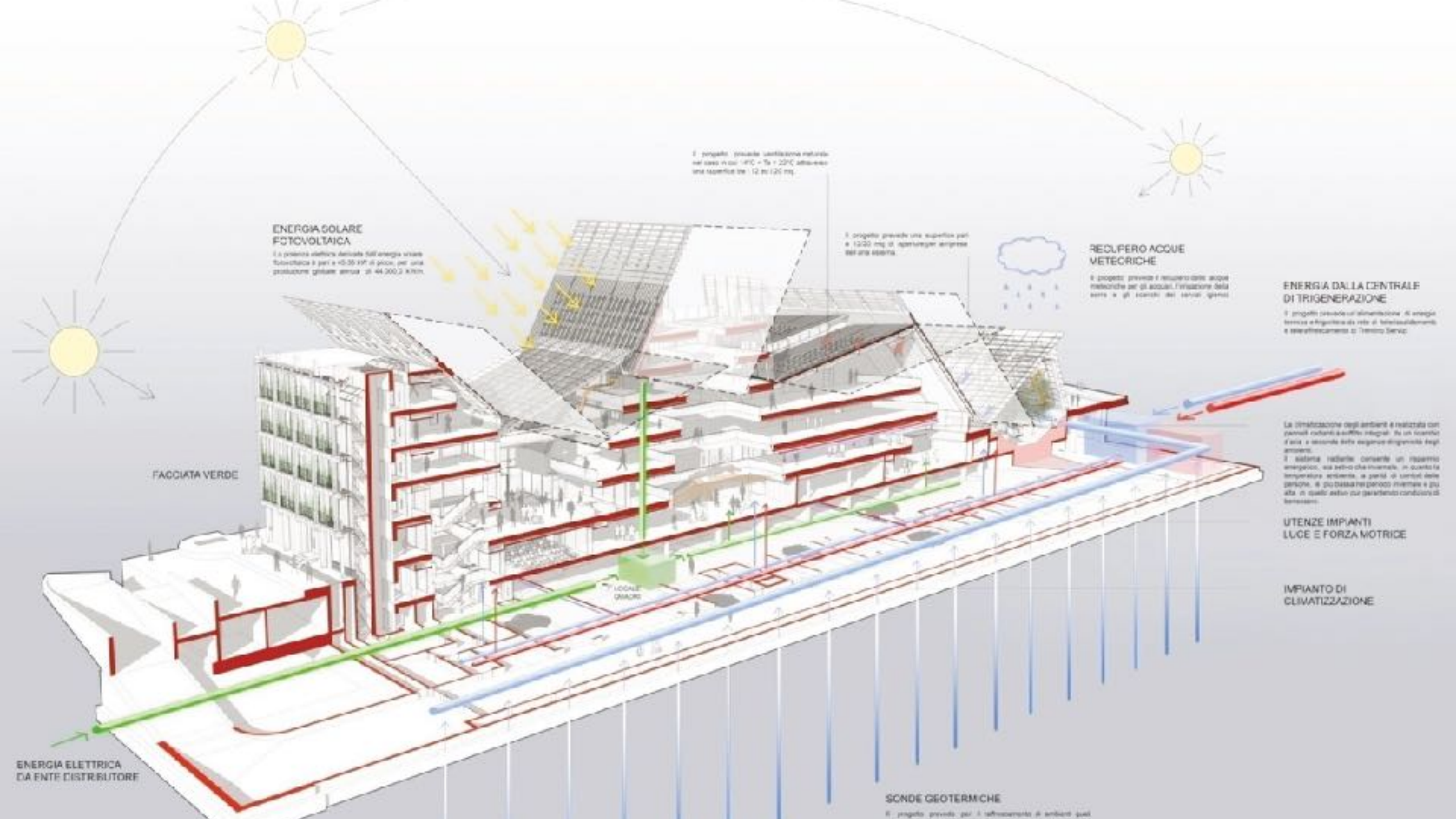












ENERGIA SOLARE FOTOVOLTAICA

Il sistema fotovoltaico derivato dall'energia solare fotovoltaica è pari a +0,35 kW di picco, per una produzione globale annua di 44.900,3 kWh.

Il progetto prevede l'utilizzazione naturale nel caso in cui $T_{int} = T_a + 22°C$ all'interno una superficie tra 1,20 m² (20 mq).

Il progetto prevede una superficie pari a 1200 mq di apparecchi sempre dell'aria esterna.

RECUPERO ACQUE METEORICHE

Il progetto prevede il recupero delle acque meteoriche per gli usi: l'irrigazione della verde e gli scarichi dei servizi igienici.

ENERGIA DALLA CENTRALE DI TRIGENERAZIONE

Il progetto prevede un'alimentazione di energia termica e frigorifera da rete di teleriscaldamento e teleraffreddamento di Tenso Service.

FACCIAIA VERDE

LOCALI QUADRI

La climatizzazione degli ambienti è realizzata con pannelli radianti a soffitti integrati in un sistema d'aria a seconda delle esigenze dimensionali degli ambienti. Il sistema radiante consente un risparmio energetico, sia attivo che inattivo, in quanto la temperatura scende, a parità di comfort delle persone, e più bassa nel periodo invernale e più alta in quello estivo con parimenti consumi di benessere.

UTENZE IMPIANTI LUCE E FORZA MOTTRICE

IMPIANTO DI CLIMATIZZAZIONE

ENERGIA ELETTRICA DA ENTE DISTRIBUTORE

SONDE GEOTERMICHE

Il progetto prevede per il raffrescamento di ambienti quali

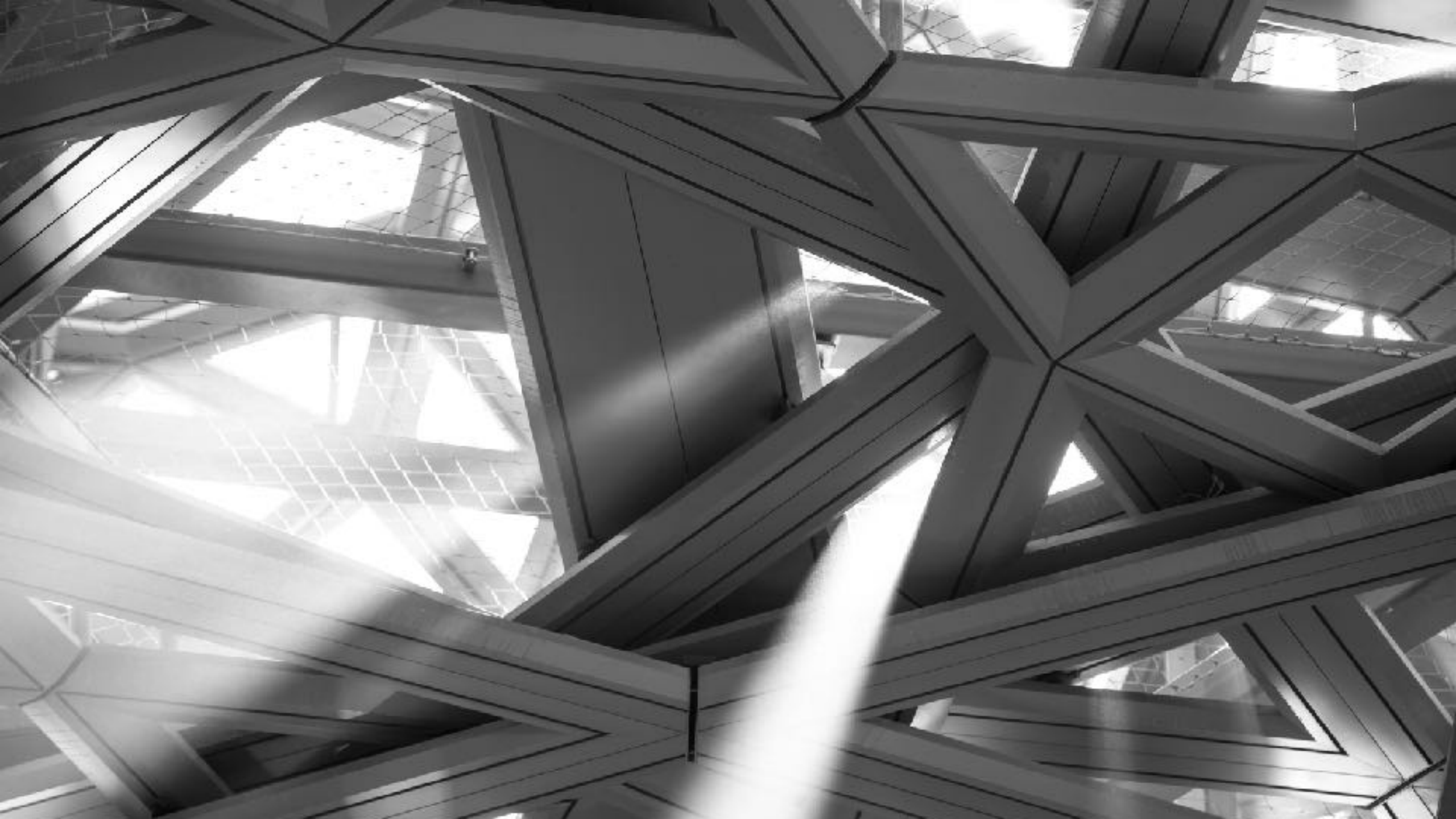


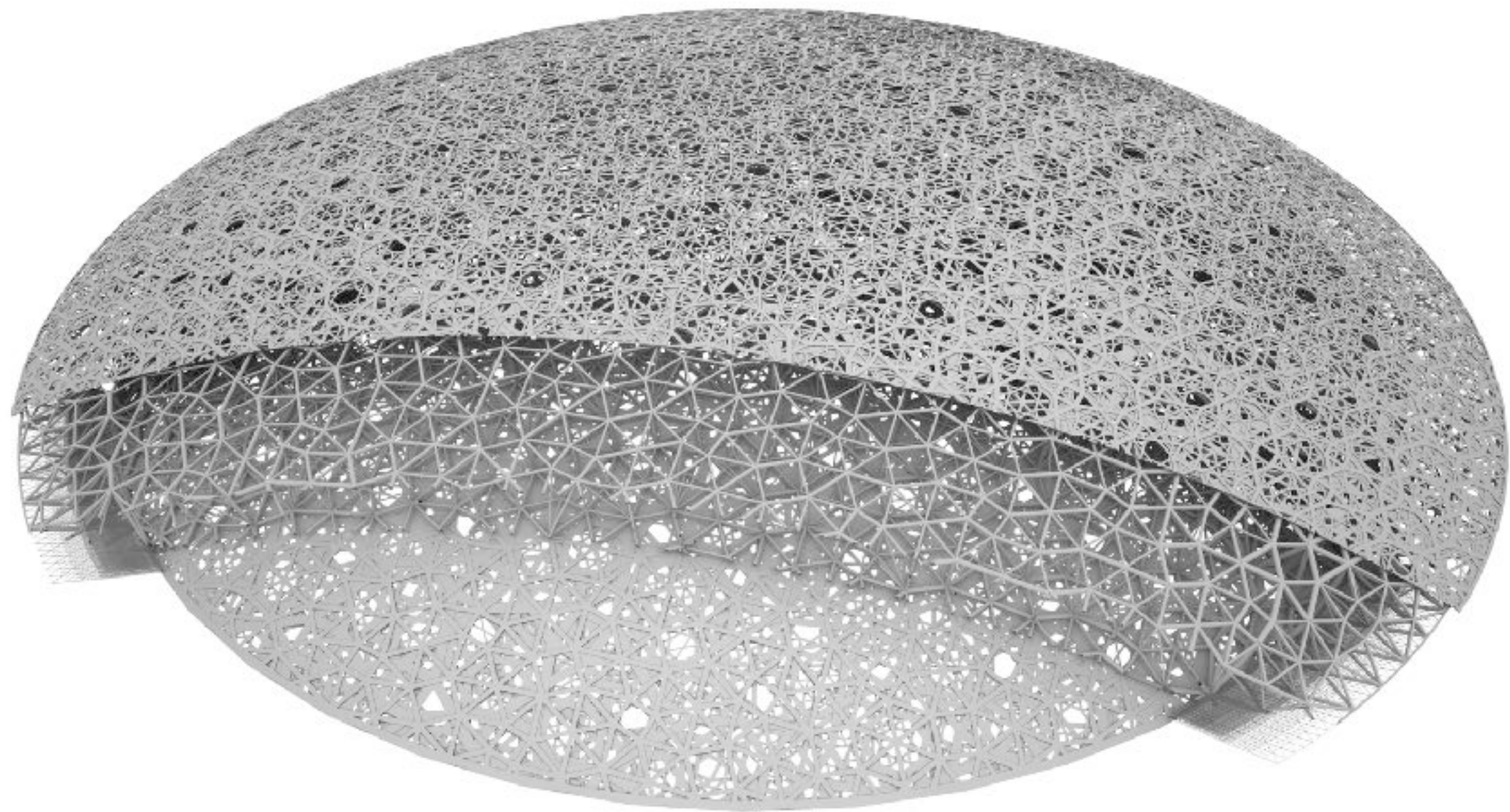


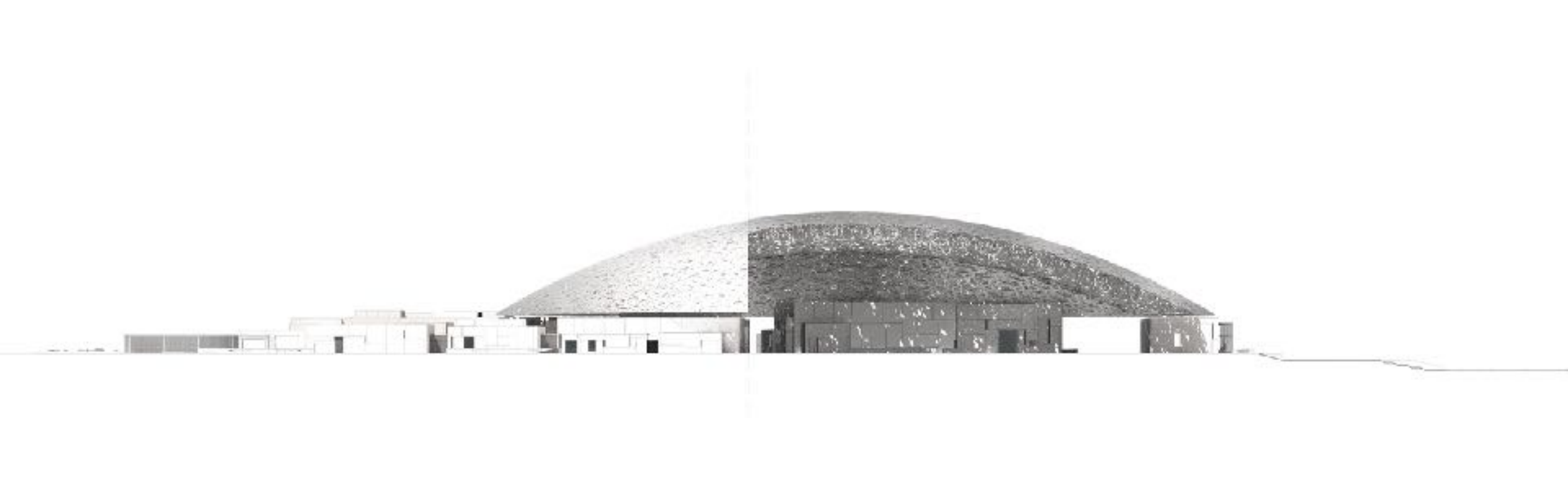


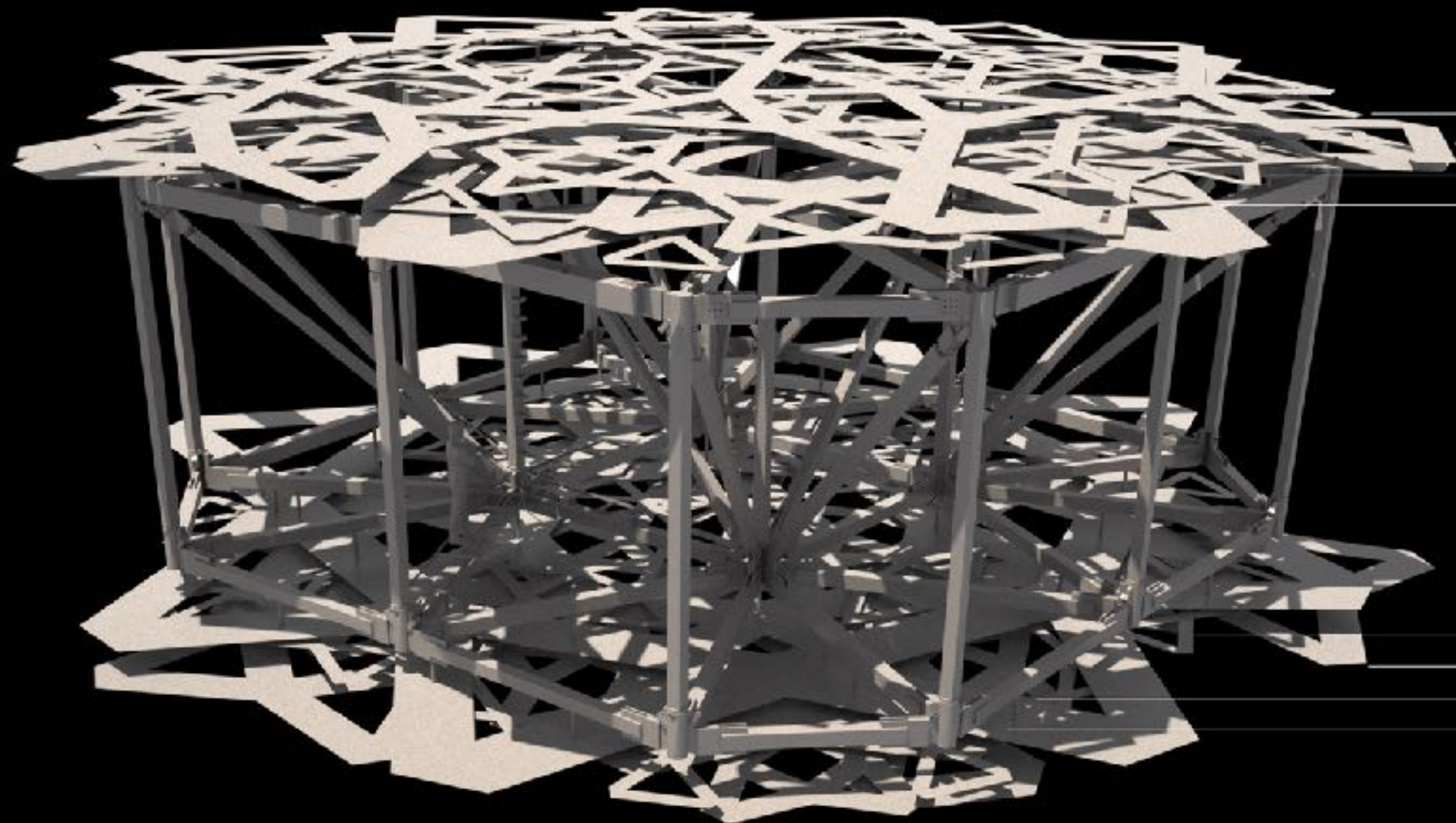
LOUVRE – Abu Dhabi – Jean Nouvel











LAYER 04

LAYER 03

LAYER 02

LAYER 01

STRUCTURE

LAYER 05

LAYER 06


LAYER 07

LAYER 08





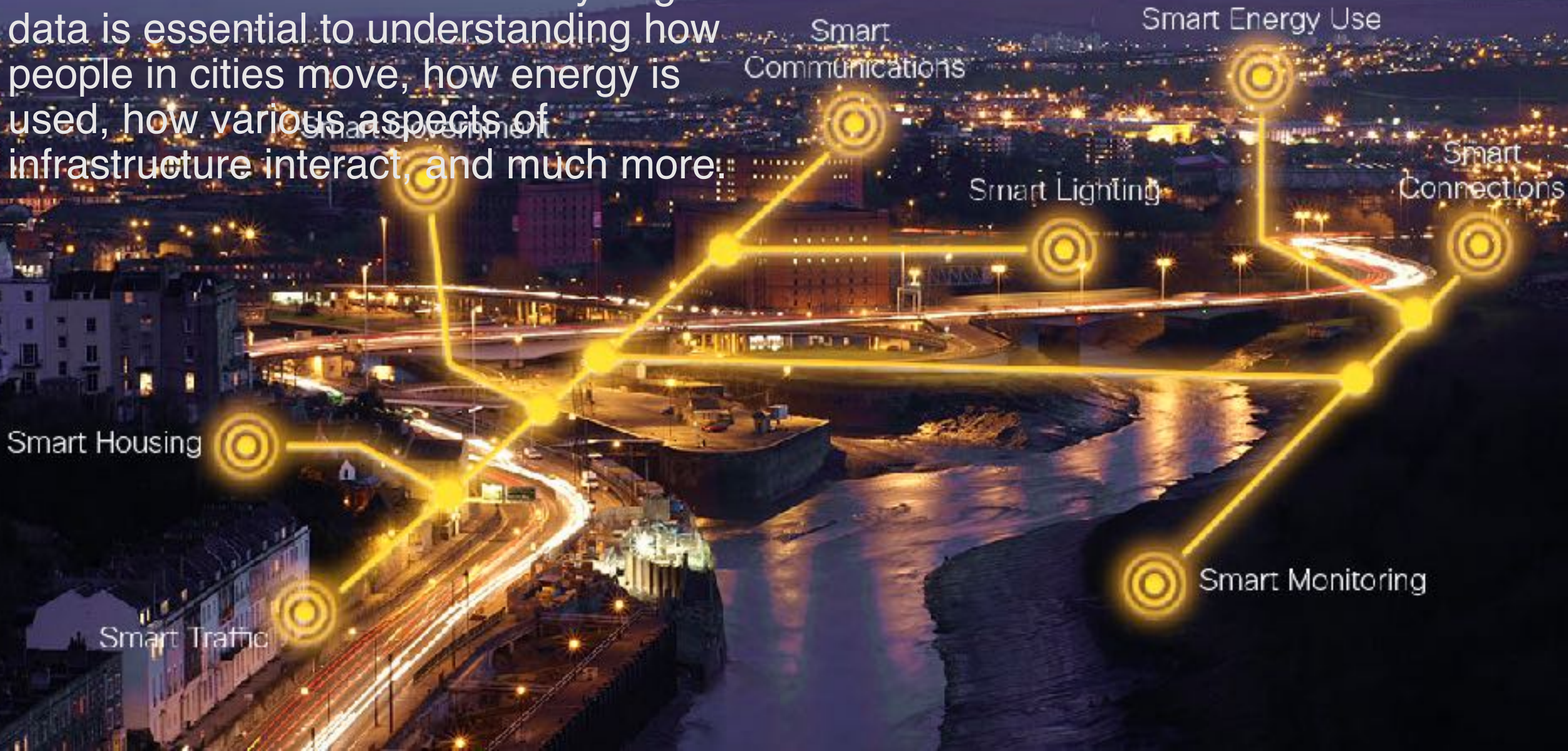


A night cityscape with a network overlay of wireless signals and connecting lines. The background shows a city skyline with illuminated buildings and a prominent tower. Overlaid on the image is a network of white lines connecting various points, with several wireless signal icons (three curved lines) indicating connectivity. The overall color scheme is dark blue and black, with white and yellow highlights from the city lights and network lines.

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



LONDON DATASTORE

Register an Account

Login 

Data ▾

Blog

Apps & Analysis ▾

LODA

Area Profiles

Boroughs ▾

More ▾



JOB S 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

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



Carlo Ratti Associati - Big Cra Singapore





Esme swimming, Parkroyal on Pickering, Singapore





STEFANO BOERI ARCHITETTI – Bosco Verticale



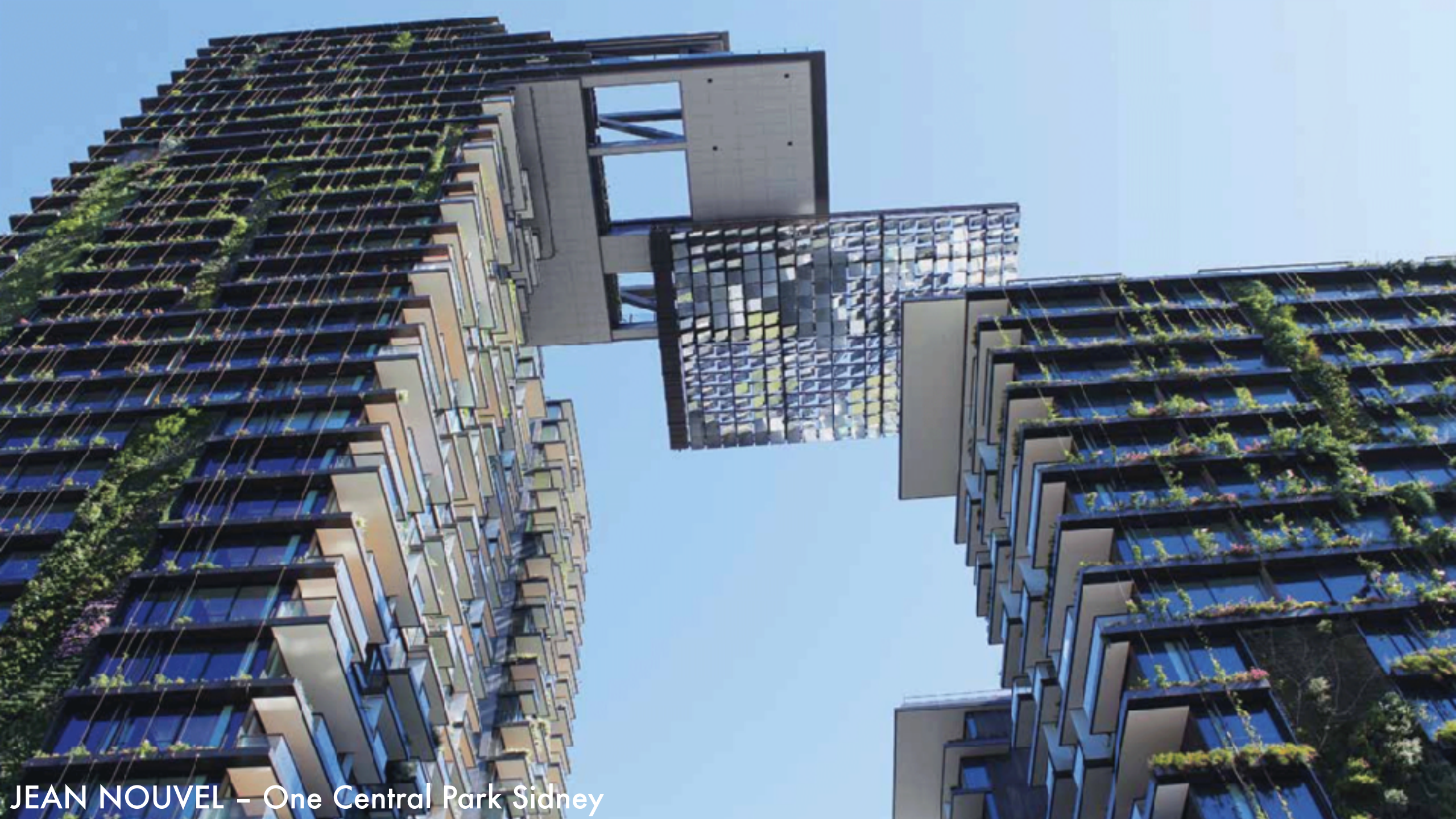
STEFANO BOERI ARCHITETTI – Bosco Verticale



STEFANO BOERI ARCHITETTI – Bosco Verticale



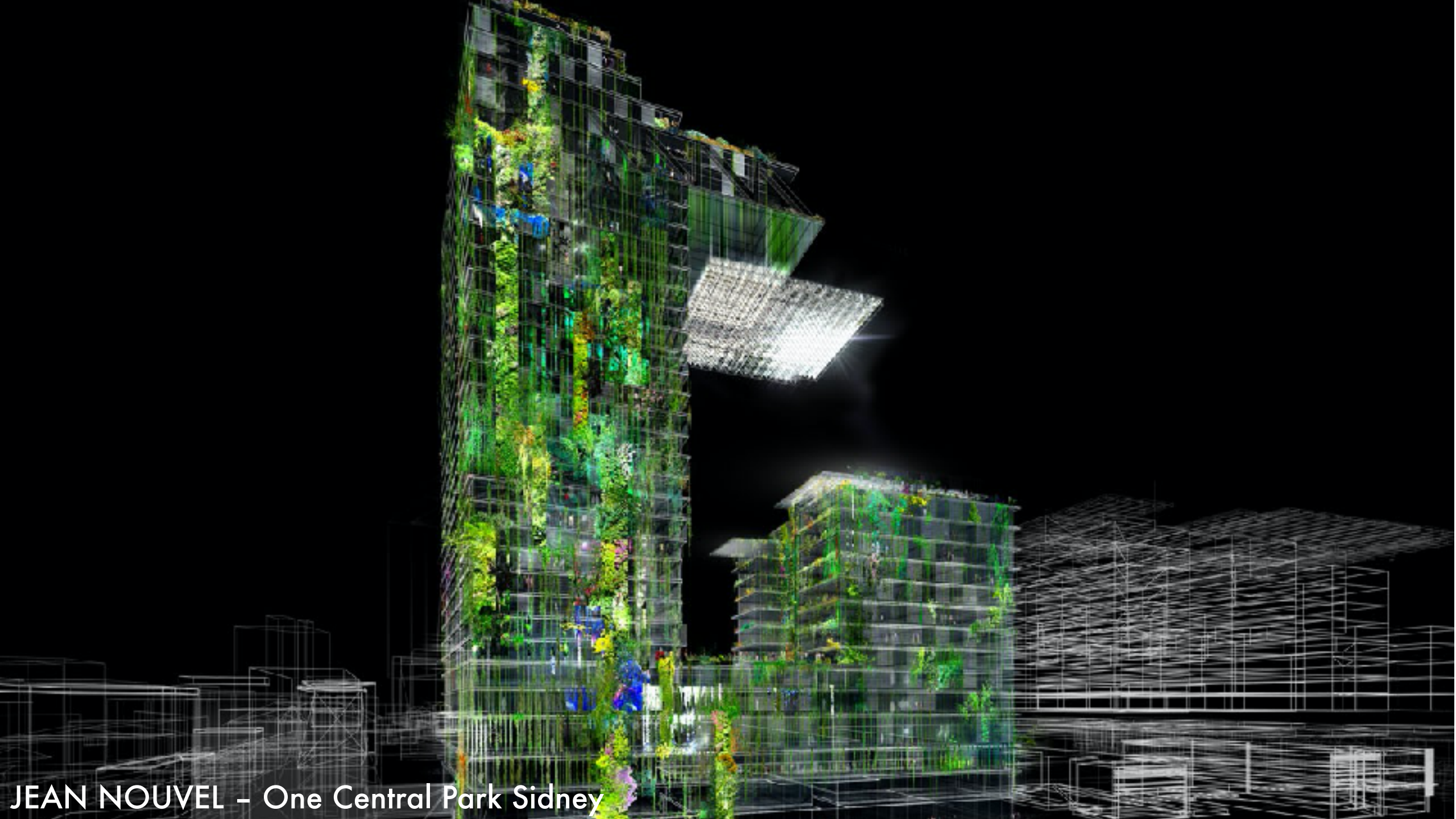
JEAN NOUVEL - One Central Park Sydney



JEAN NOUVEL – One Central Park Sydney



JEAN NOUVEL – One Central Park Sydney



JEAN NOUVEL – One Central Park Sydney



UTS

JEAN NOUVEL - One Central Park Sydney



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 Miali delle Regioni
- il Parco delle Cascine
- West Park de l'Intrattenimento ad Ovest
- il Parco dello Sport de Lambro
- il Fila 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

WOODEN STRUCTURE and BUILDINGS





Nikken Sekkei - W350 Tokio



Nikken Sekkei - W350 Tokio



Nikken Sekkei - W350 Tokio



Nikken Sekkei - W350 Tokio



MIX USE



RESILIENT
CITIES



Resilience Framework

Understand local climate

Identify vulnerabilities, risks and impact

Formulate adaptation options

Assess and prioritise options

Implement measures

Monitor and evaluate effectiveness

Review strategies

Understand local climate

Identify vulnerabilities, risks and impact

Formulate adaptation options

Assess and prioritise options

Implement measures

Monitor and evaluate effectiveness

Review strategies

An aerial photograph of New York City, showing a dense urban landscape with numerous skyscrapers. A yellow line highlights a specific area along the waterfront, which is filled with greenery and trees, indicating a park or waterfront development project. The text is overlaid on the upper right portion of the image.

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.

**NEW YORK
WATERFRONT**





An aerial photograph showing a city waterfront. In the foreground, a multi-lane highway with several cars is visible. To the left of the highway is a large, green, landscaped area with trees and a soccer field. In the background, a large body of water (likely a harbor or bay) is visible, with a city skyline featuring various skyscrapers and buildings across the water. A sailboat is visible on the water. The sky is clear and blue.

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

A group of people in a meeting room looking at a wall covered in diagrams and charts. The room is filled with various documents, charts, and diagrams pinned to the wall. Several people are standing and looking at the wall, while others are sitting at desks with computers in the foreground. The overall atmosphere is one of collaborative work and discussion.

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 loaders

THANKS FOR YOUR ATTENTION