

2026 INTERNATIONAL SUMMIT

INTELLIGENT & NET-ZERO BUILDINGS

Building a Sustainable Future for the Next Generation

01 SEP 2026
13:00–17:30

Main Stage, Area A, 1F
Taipei World Trade Center Exhibition Hall
No. 5, Section 5, Xinyi Road, Taipei City

Advancing the Frontiers of Sustainable and Intelligent Built Environment

Ar Prof Ada FUNG, BBS, FHKIA, FCI OB, Registered Architect



Ar Prof Ada YS FUNG, BBS, FHKIA, FCIOB, Registered Architect

BEAM Pro, Accredited Mediator, BIM Manager, Hon FHKIBIM, Hon HKICBIM, Hon HKIPM, MGISA, MCIE(HK)
BA(AS) (1st Class Hons), HKU 1979; B Arch (Distinction), HKU 1981

Founding President, Hong Kong Alliance of Built Asset & Environment Information Management Associations (since 2019)

Founding Chairperson, Hong Kong Chapter of buildingSMART International (since 2019)

Adjunct Professor, Faculty of Architecture, University of Hong Kong

Distinguished Faculty of Architecture Fellow of the Faculty of Architecture, University of Hong Kong (2019-2025)

Adjunct Professor, Department of Civil and Environmental Engineering, Hong Kong University of Science and Technology (HKUST)

Adjunct Professor, Department of Building and Real Estate, Hong Kong Polytechnic University (PolyU)

Member, HKSAR Advisory Council on the Environment

Member, HKSAR Green Tech Fund Assessment Committee

Member, HKSAR Panel of Advisors for Land Sharing Pilot Scheme

Member, HKSAR Occupational Safety and Health Council

Member, HKSAR Task Force on Adopting Building Information Modelling
for Statutory Submissions under the Buildings Ordinance

President, Lighthouse Club (HK)

President, Temporary Works Forum (HK)

President, Zonta Club of Kowloon

Member, External Affairs Advisory Board, Chartered Institute of Building (CIOB)

Advisor, GREAT Smart Cities Institute, Hong Kong University of Science and Technology

Advisor, Division of Environment and Sustainability, HKUST

Advisor, Department of Civil and Environmental Engineering, HKUST

Industry Advisor, Research Centre for Design for Safety, Dept of Civil & Env Eng, PolyU

[BIOS TRUNCATED]

Former Deputy Director of Housing, HKSAR

Past Chairperson, Architects Registration Board (2011-2012)

Past President, Hong Kong Institute of Architects (2013 & 2014)

Former Director, Hong Kong Green Building Council (2014-2019)

Former Director and Board Secretary, World Green Building Council (2018-2020)

Former Chairperson, Committee on Construction Site Safety, Construction Industry Council (2015-2017)

Former Chairperson, Committee on BIM, Construction Industry Council (2017-2023)

Former Director, HKSAR Logistics and Supply Chain Multi-Tech R&D Centre (2019-2024)

Former Member, Sustainable Development Committee, Hong Kong Green Building Council (2021-2026)

Sustainable future for the next generation ?

Severely compromised by impacts of climate change!

Nepal-Tibet border crossing washed away

7 January 2026

28 August 2026



Source: Google, Vantor

BBC

Damage and mud can be seen more than 2.5km (1.5 miles) upstream, reaching 100m (330 ft) above the area it first hit.

A few miles further south is the village of Timure, which has now largely disappeared.

The walls of the valley at this point are steep, reaching up to 50m above the water line. The image shows most of the houses perched on this slope are now gone or covered in mud.

Satellite images reveal scale of flood devastation in Nepal villages

17 hours ago

Paul Brown and Adam Durbin

BBC Verify



Tracing the deadly path of the Nepal-Tibet flash flood

New satellite imagery has revealed the scale of the devastation along Nepal's Trishuli River caused by Wednesday's deadly flash flood, triggered by a glacier collapse.

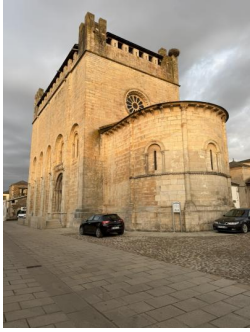
Before-and-after images show how sections of the valley, where a torrent of floodwater and debris surged through, destroyed villages, bridges and hydroelectric power stations.

Hundreds of people have been killed and thousands more are missing, Nepalese officials say.



Intelligent, Smart, Net-Zero Buildings
Intelligent, Smart, Net-Zero Built Environment





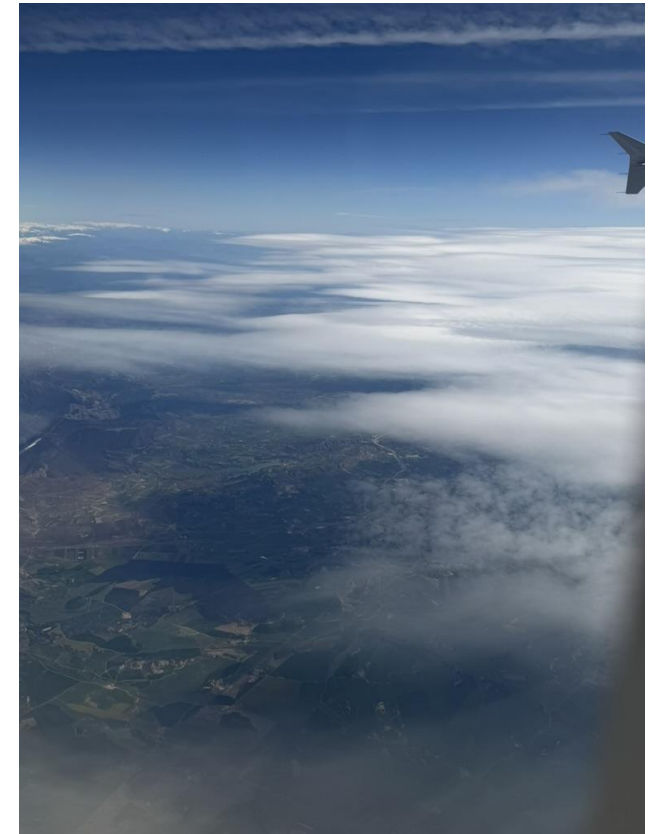
- Built Environment
- Natural Environment



Intelligent, Smart, Net-Zero Planet



Atmosphere, Land, Sea



2024 was the first calendar year with an average global temperature exceeding 1.5°C above pre-industrial level.

This is the number one message scientists are sending us today. As biologist and systems thinker **Nate Hagens** puts it: '**Our world is starting to be more unpredictable.**'



We are entering what he calls the '**era of the standard deviation**'—a time when familiar patterns no longer apply.

Extreme weather, resource shocks, and biodiversity loss are the new normal.

The built environment—responsible for nearly 40% of global emissions—was never designed for this. So the question is: **How do we build cities that perform under uncertainty, not just under average conditions?**

An aerial photograph showing a severe flood in a residential area. Several houses with red and blue roofs are partially submerged in murky, brown floodwater. Trees and other vegetation are also partially underwater. The water appears to be flowing rapidly, creating white foam and ripples around the structures. The overall scene depicts significant flooding and potential damage to property.

The #1
message
from scientists
(from a
biologist)

“Build a Better World”

Safe, Healthy, Smart & Green within 1.5 degrees

We have only ONE Planet Earth. Please use it wisely!

INSPIRING A GLOBAL MOVEMENT FOR SUSTAINABLE CONSUMPTION AND PRODUCTION



One planet
handle with care



International
Resource
Panel



CATALYSING SCIENCE- BASED POLICY ACTION ON SUSTAINABLE CONSUMPTION AND PRODUCTION:

**The value-chain approach
& its application to food,
construction and textiles**

A report of the joint Task Group of
the International Resource Panel and
the One Planet network



Source: United Nations Environment Programme (2021). Catalysing Science-based Policy action on Sustainable Consumption and Production – The value-chain approach & its application to food, construction and textiles.

CHALLENGES	OPPORTUNITIES
1) What type of construction is built and used, and where? Different types of construction built in different locations and regions. contribute in different ways to meeting needs of societies and achieving the sustainable development goals, and can cause different pressures on use of resources and environmental impact	Promote and enable adequate and sustainable construction
2) How much is being built? The construction market is growing worldwide, which causes pressures on resources and environmental impacts. However, construction does not necessarily follow demand. For example, empty buildings and property speculation is registered in many developed countries, while there is a construction gap in developing countries.	Align development needs with supply of construction worldwide
3) How are they being built and used? The impacts of construction are associated with: type and amount of construction materials used, consumption of resources in the operation of buildings, and construction and demolition processes. Changing design, construction and use practices is fundamental to use resources more efficiently and reducing environmental impacts.	Adopt more sustainable practices relating to the manufacturing of construction products and the design, construction and use of buildings and infrastructure

Table 5: key challenges and opportunities for addressing natural resource use and environmental impacts along construction value chains

Source: United Nations Environment Programme (2021). Catalysing Science-based Policy action on Sustainable Consumption and Production – The value-chain approach & its application to food, construction and textiles.

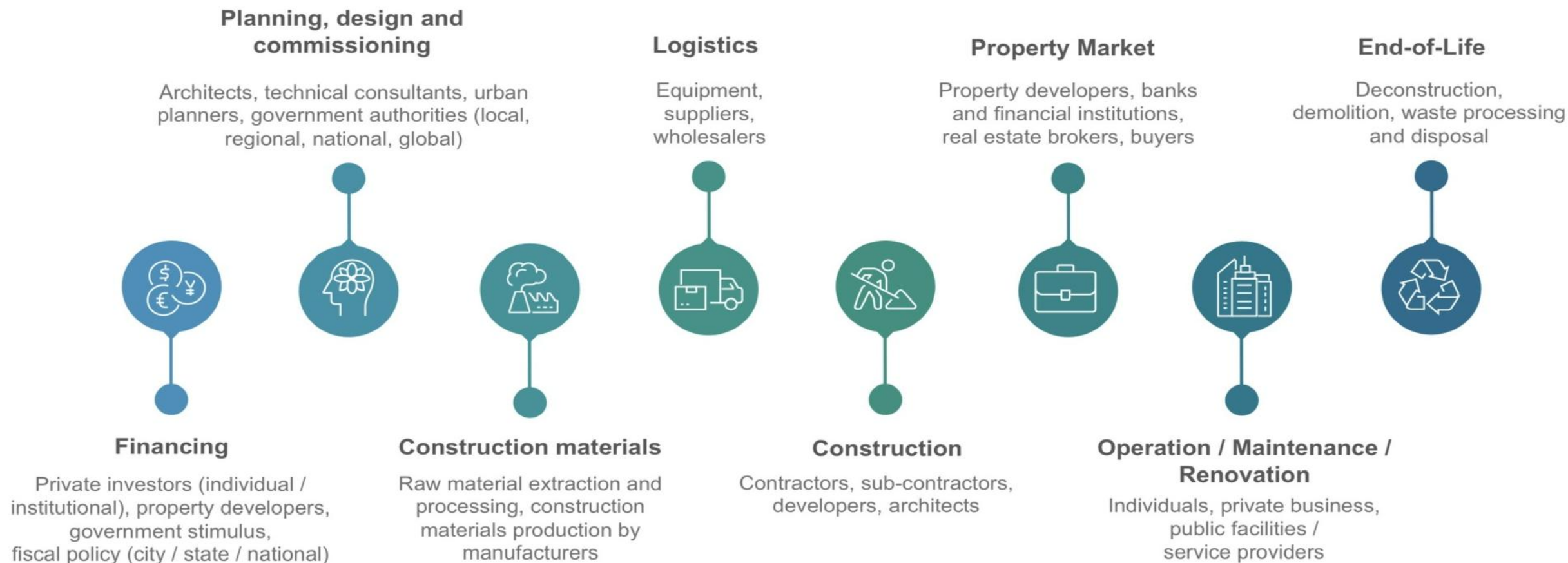


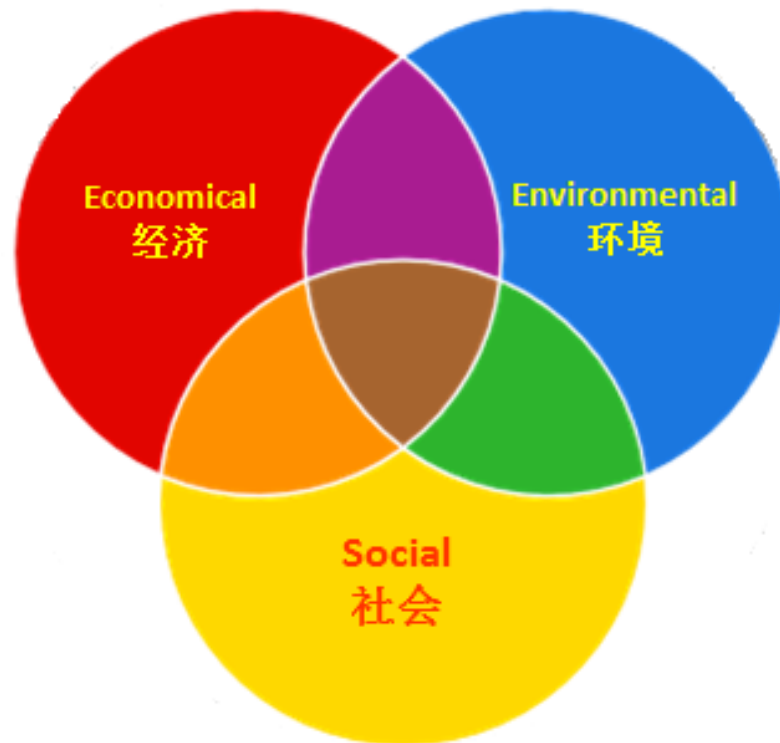
Figure 7: Stages of the construction value chain

Source: United Nations Environment Programme (2021). Catalysing Science-based Policy action on Sustainable Consumption and Production – The value-chain approach & its application to food, construction and textiles.

Sustainability

The World Green Building Council is delighted to support the UN's [Sustainable Development Goals](#) (SDGs).

These 17 goals set forth a challenge for humanity to decouple economic growth from climate change, poverty and inequality.



Think Globally; Act Locally

Where are we? **Hong Kong, China**



Population 7.5M
Land area 1,100 km²
Built up area 25%

- High-rise
- High density
- Compact city
- Subtropical climate
- Hilly terrain : Natural habitat is within easy reach

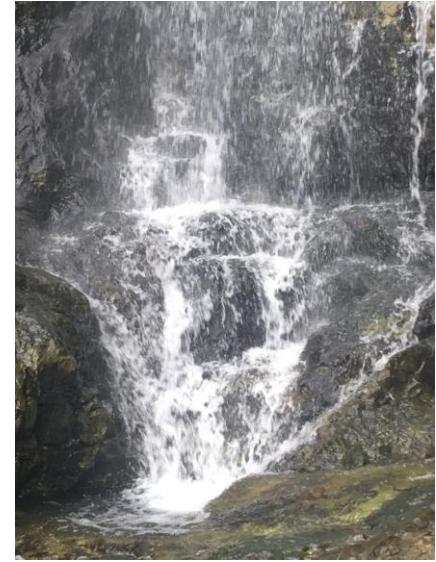
Average living space per person for Public rental housing as at 2023: 13.8 sq.m. Internal Floor Area

Life expectancy:
Longest in the world



**Hong Kong Special
Administrative Region**

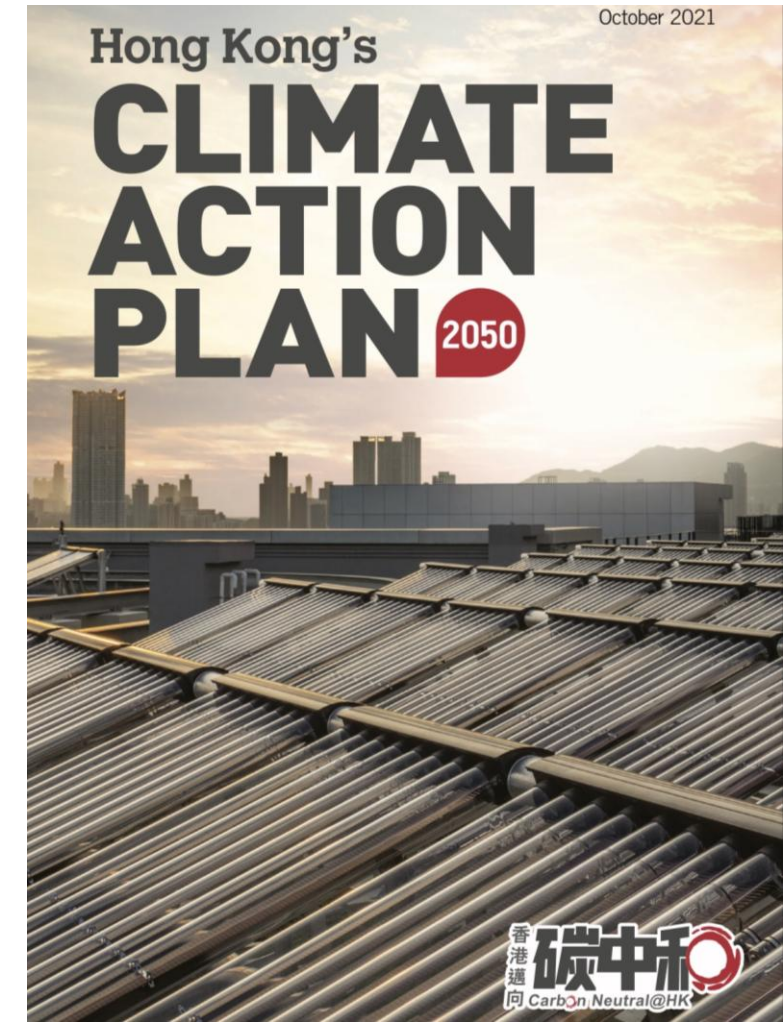
One of the world's most densely built cities
"Super Connector; Super Value-Adder" – Mainland China & the World



We are seeing extreme weather conditions more frequently year by year. We need to appreciate the urgency of the emergency of Climate Crisis, as our Planet Earth has been suffering from Global Warming to **Global BOILING** now.

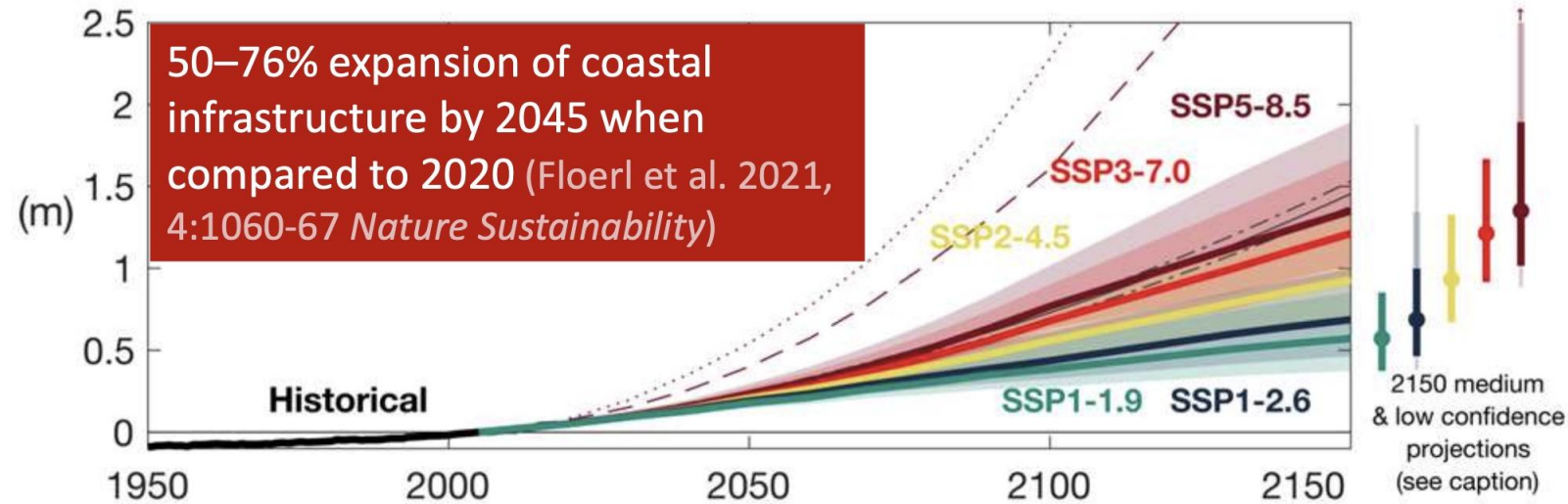
We need to decarbonize before 2050 according to HKSAR government's policy on Climate Action announced in 2021.

Targets of achieving carbon neutrality set by cities



Globally, increase in coastal population and rise in sea level jointly lead to more shoreline hardening.

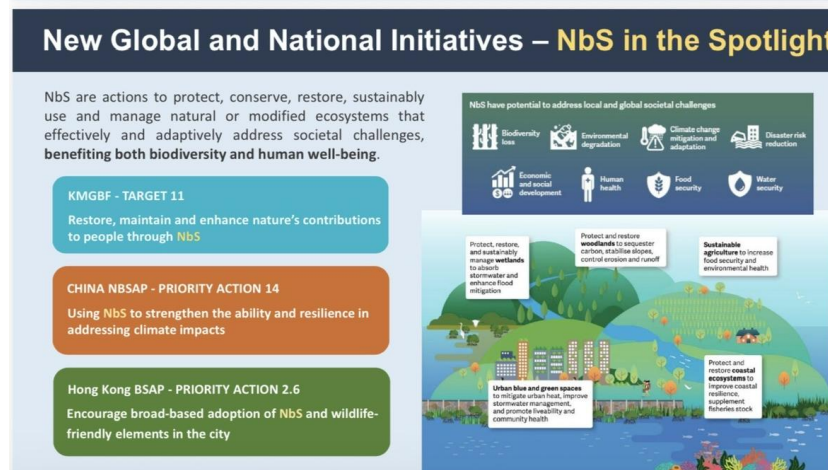
Projected global mean sea level rise under different SSP scenarios



For 2150 the likely sea level rise reaches up to ~1.9 m for the high emissions scenario SSP5-85, but values of **up to 5 m** cannot be ruled out. (Source: IPCC AR6 Technical Summary)



Source: Eco-Shoreline, Prof Kenneth Leung, City University of HK



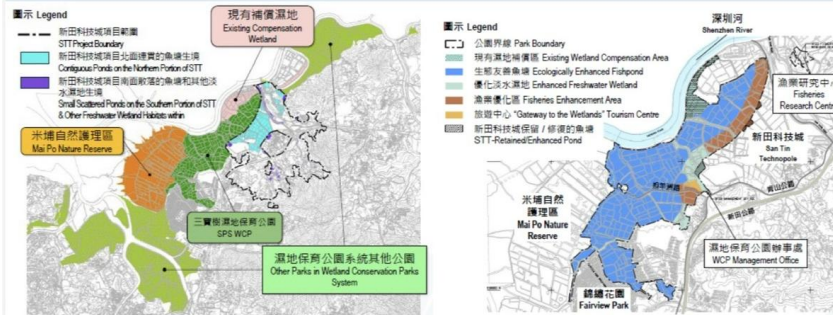
Source:
Hong Kong BSAP
Mr Simon Chan,
AFCD

Mega NbS Project 1 - Wetland Conservation Parks (WCPs)

- Establish a multi-functional Wetland Conservation Parks (WCPs) System to create **environmental capacity** for the development of the Northern Metropolis, and achieve the **co-existence of conservation and development**
- The four functions of the WCPs System
 - Conserving the ecological value of the wetlands
 - Developing modernised aquaculture industry
 - Promoting scientific research on aquaculture
 - Providing ecological education and recreational facilities for the public
- Phased development** of the WCPs System, with **Sam Po Shue WCP to be the first Park** to be developed



Sam Po Shue WCP



Phased Development of Sam Po Shue WCP



Mega NbS Project 2 - Coastal Protection Park (CPP)

1. Nature conservation

- Protect coastal ecosystem, in particular intertidal mudflats
- Enhance conservation of biodiversity, including horseshoe crabs, seagrass beds, waterbirds, etc.

2. Eco-recreation and education

- Leverage on local natural resources, rural characteristics and unique scenery to promote eco-tourism and education

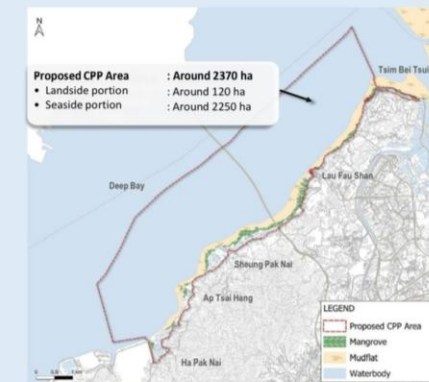
3. Sustain fisheries activities

- Preserve fishponds and support oyster farming industry

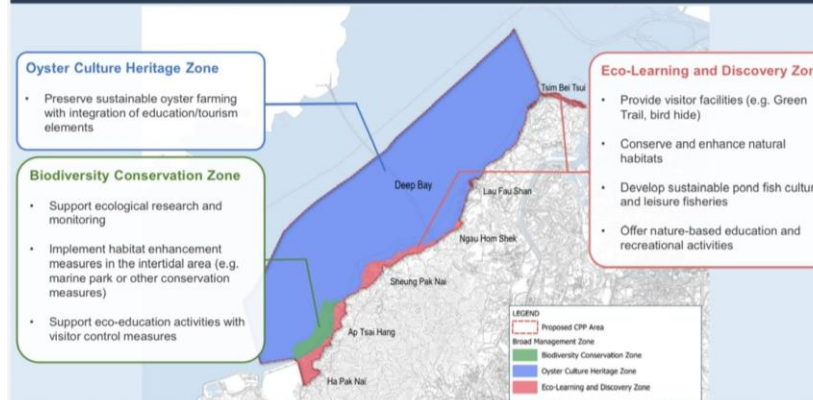
Proposed boundary of CPP

Proposed CPP area includes:

- Areas with high ecological and landscape value
- Areas with ecological/recreation potential
- Areas with existing or potential aquaculture activities



Proposed Management Mode for CPP



Source:
Hong Kong BSAP
Mr Simon Chan,
AFCD

Overall Targets

Realising a sustainable and liveable Hong Kong where people and nature coexist in harmony, by 2035 the earliest, through achieving **10 Overall Targets**

1	Refined policies, regulations, institutional frameworks and technological innovations for biodiversity conservation	6	Further consolidated Hong Kong's position as an international green and sustainable finance hub
2	An expanded network of effectively managed protected areas and other effective area-based conservation measures	7	Reduced pollution to aquatic environments, enhanced waste recycling rates, and advanced the implementation of a circular economy
3	Enhanced and widely mobilised societal efforts in habitat restoration	8	Widely adopted nature-based solutions and upgraded urban blue-green spaces
4	Strengthened protection of endangered species against poaching and trafficking	9	Enhanced public knowledge of biodiversity, raised awareness and boosted community participation
5	Effectively managed risks and impacts posed by invasive alien species	10	Launched a series of biodiversity-positive joint initiatives, demonstrating more cohesive and effective collaboration across jurisdictions and stakeholders

Hong Kong's updated Biodiversity Strategy and Action Plan (BSAP) aims to foster a sustainable and liveable city where people and nature coexist harmoniously by 2035.

It outlines the integration of global and national biodiversity frameworks, notably the Kunming-Montreal Global Biodiversity Framework and China's National Biodiversity Conservation Strategy, into local policy through a whole-of-society approach.

The BSAP details strategic areas, priority actions, and flagship projects—such as Wetland Conservation Parks and Coastal Protection Parks—emphasizing nature-based solutions, stakeholder engagement, and innovative financing.

Outcomes include enhanced species and habitat protection, mainstreaming biodiversity in urban planning, and strengthened public education and cross-boundary collaboration. The document serves as a comprehensive guide for policymakers, practitioners, and researchers involved in biodiversity conservation and sustainable development in Hong Kong.

Strategies, Priority Actions & Projects



The global standard for Nature-based Solutions™

Actions to protect, manage and restore natural or modified ecosystems, which address societal challenges, effectively and adaptively, providing human well-being and biodiversity benefits.

[Explore the Global Standard](#)[Apply the Global Standard](#)

Nature-based Solutions (NbS) guidelines offer a framework for using ecosystems to address societal challenges like climate change, flooding, and urban heat.

Locally, the Civil Engineering and Development Department and the Agriculture, Fisheries and Conservation Department launched the **Hong Kong Nature-based Solutions Design Guidelines (HKNbSDG)** to integrate ecological principles into local infrastructure.



The Civil Engineering and Development Department (CEDD) and the Agriculture, Fisheries and Conservation Department (AFCD) jointly held the promulgation ceremony of the Hong Kong Nature-based Solutions Design Guidelines on 3 March 2026, **promoting the application of Nature-based Solutions to address societal challenges.**

We MUST work faster, and ACT NOW to achieve **NET ZERO**. This requires a paradigm shift in our production and consumption of our Earth's resources, including embodied carbon and operational carbon. Every year, half of the extracted resources of our Earth are used by construction industry. We need to optimize energy use, reduce waste and increase in efficiency. **USE of DATA and information** is very important in these process.

We Need Trusted Information

buildingSMART: The openBIM context

... providing a **sustainable, less expensive** built environment.

... improving **decision-making, automation** and **efficiency** ...

... enabling **interoperable, accessible** and **enduring data** ...

Global **open Standards** & Services from buildingSMART ...



buildingSMART Vision, Mission & Purpose

We don't design, build or operate —we build the foundations that make them possible.



Vision:

The **seamless exchange of trusted information** across the built environment.



Mission:

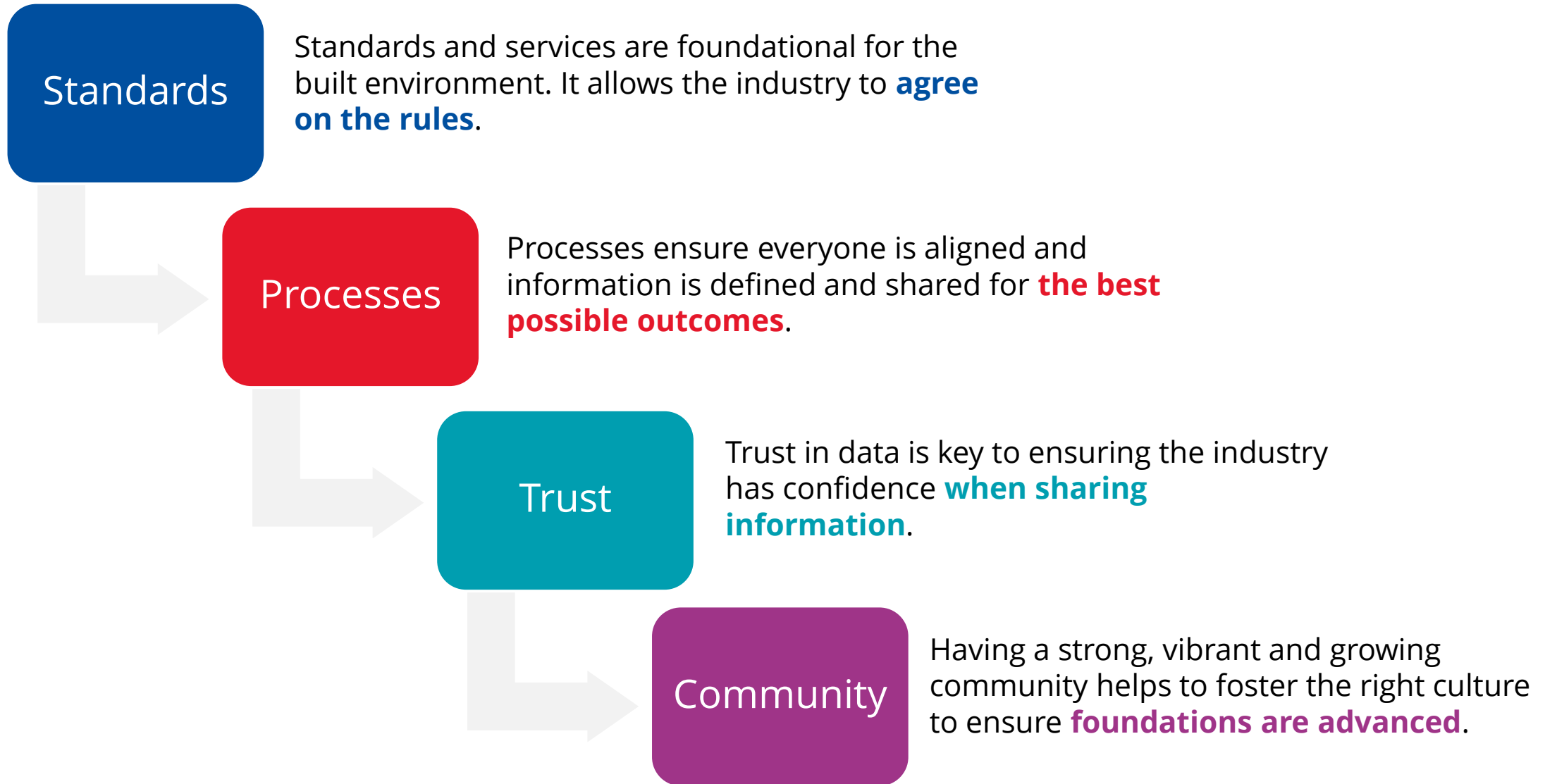
To create & maintain **open & reliable digital standards** for the built environment & support their global adoption.



Purpose:

To bring together the global industry to develop & implement open digital standards & services that enhance **automation & decision-making** across the built environment life-cycle, improving **productivity, sustainability & profitability**.

What are foundations for the built environment?





[Home](#) » [About](#) » openBIM

openBIM® extends the benefits of BIM (Building Information Modeling) by improving the accessibility, usability, management and sustainability of digital data in the built asset industry. At its core, openBIM is a collaborative process that is vendor-neutral. openBIM processes can be defined as sharable project information that supports seamless collaboration for all project participants. openBIM facilitates interoperability to benefit projects and assets throughout their lifecycle

openBIM ensures that:

- 1.Interoperability** is key to the digital transformation in the built asset industry
- 2.Open** and neutral standards should be developed to facilitate interoperability
- 3.Reliable** data exchanges depend on independent quality benchmarks
- 4.Collaboration** workflows are enhanced by open and agile data formats
- 5.Flexibility** of choice of technology creates more value to all stakeholders
- 6.Sustainability** is safeguarded by long-term interoperable data standards

<https://www.buildingsmart.org/about/openbim/>

BIM & GIS Integration

While BIM is the digital representation of a built asset; geographic information system (GIS) is a framework for gathering, managing & analysing data.

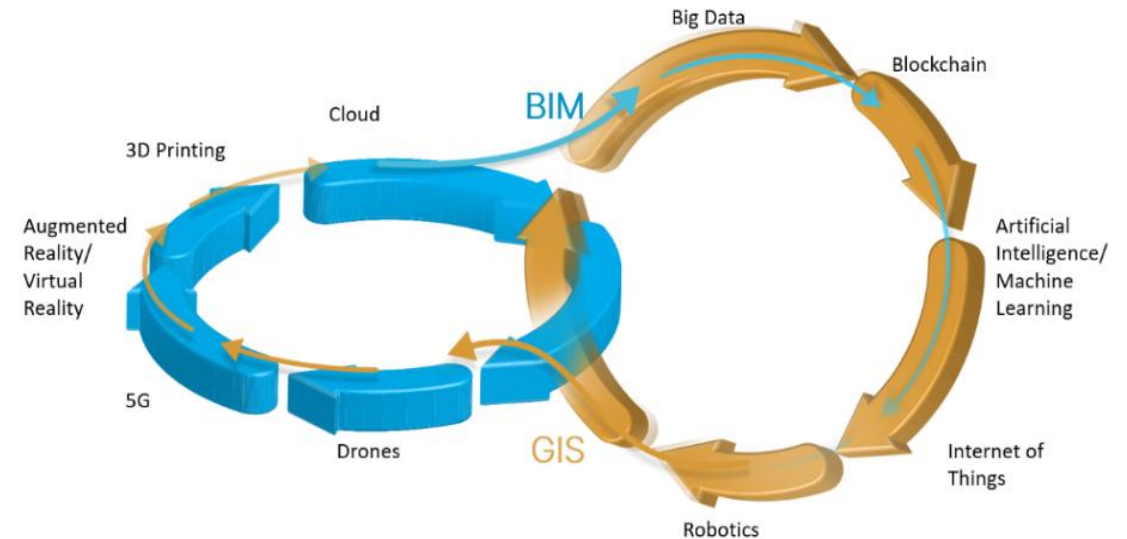
GIS analyses spatial location and organises layers of information into visualisations using maps and 3D scenes.

The use of BIM (asset) & GIS (spatial) data supports applications across virtually all sectors of human activities:

- Topographic Basemaps
- Land Records
- Disaster / Emergency Management
- Urban & Regional Planning
- Census
- Environmental Management
- Health Care
- Education
- Economic Development
- Transportation / Routing / Logistics
- City Services Management
- Utility Management / Telecommunications placement

TC > ISO/TC 59/SC 13

ISO/TR 23262:2021
GIS (geospatial) / BIM
interoperability

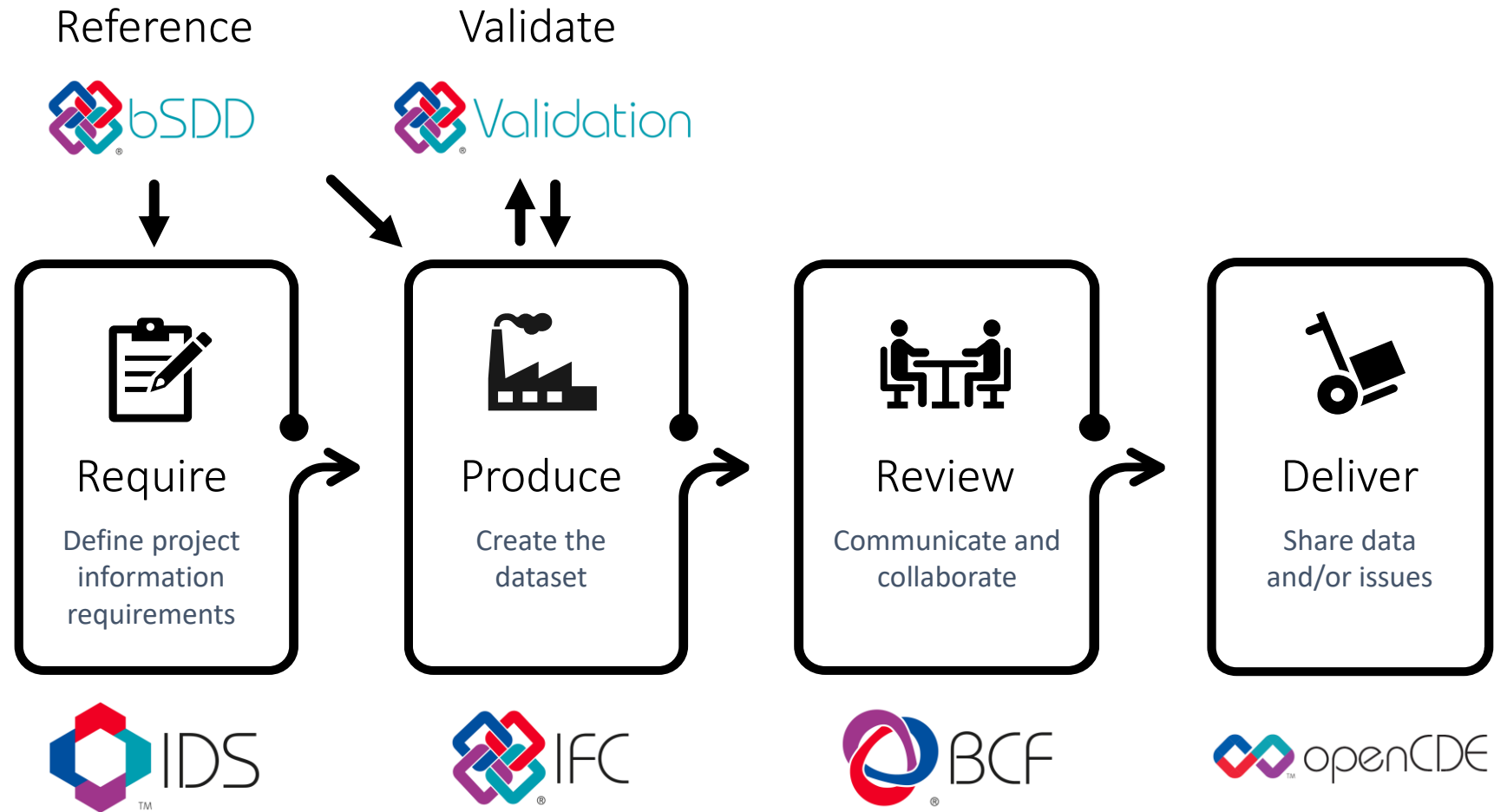


Both GIS and BIM deal with the issues of graphical, non-graphical information and documentation. Each has different technology, delivery formats and data standards to support their approach and resolve their perspective challenges.

The professionals should spell intended applications for designing the data flow from BIM to GIS at different stage of project life cycle.

The development of open formats using API based approaches is recommended by both to facilitate information exchanges. The integration of BIM and GIS involves the matching of entities in the IFC (BIM) and the CityGML (GIS) schema. However, not all the entities are well defined and documented under these two schemas and this will lead to confusion and inconsistencies in the matching process.

The openBIM Workflow

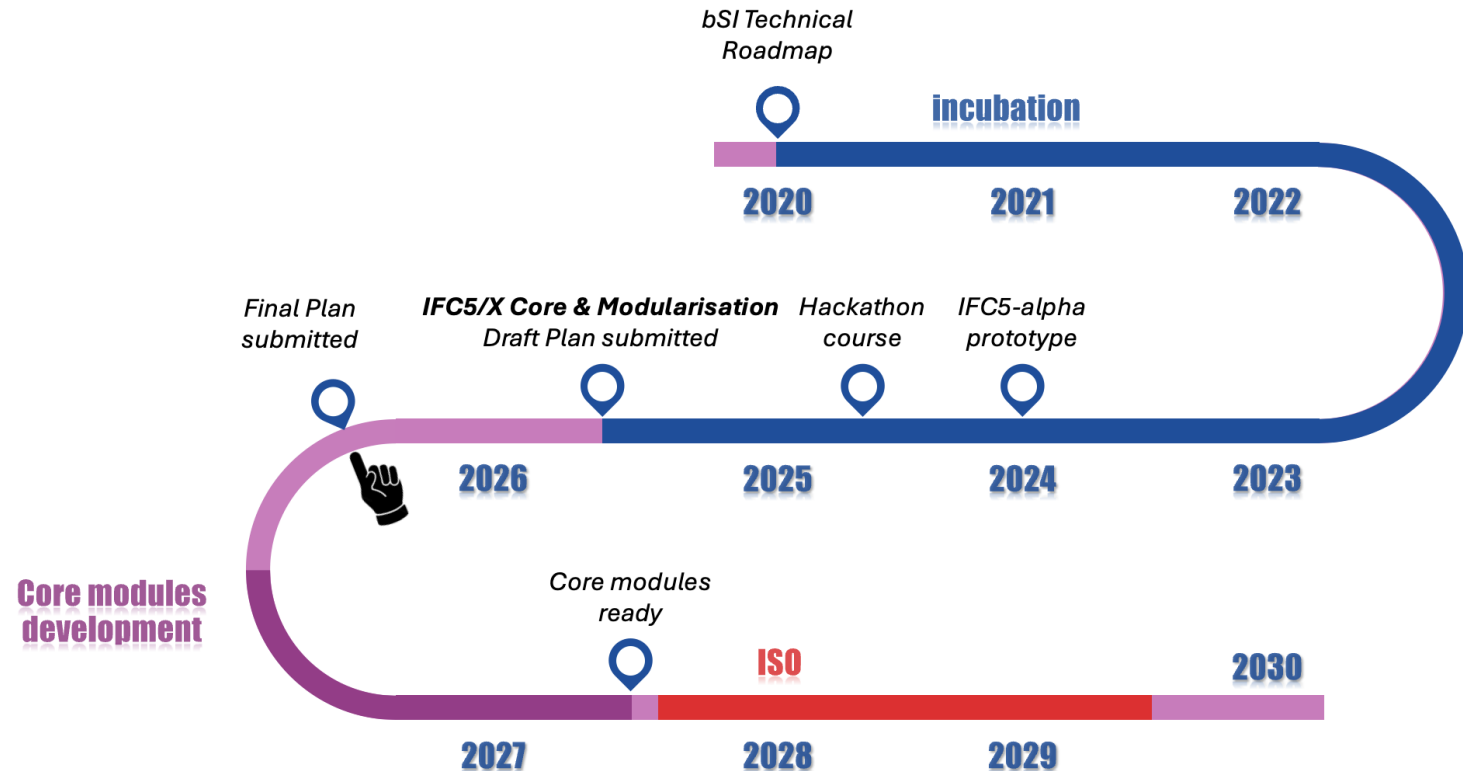


"IFC X" – Future Foundations

Less file exporting, more data sharing

The IFCX Core and Modularisation project plan focuses exclusively on the development of the **IFCX Core**, which defines the essential concepts common to all domain-specific extensions that will follow. As a result, the future of IFC will be

- Stable
- Modular
- Extensible
- Future-ready







 Best Time To Buy



[Sign In](#)

[Join Now](#)

AI Data Centers: Big Tech's Impact on Electric Bills, Water, and More

Massive data centers are gobbling up resources across the U.S.—and you may be paying for it



Beyond Efficiency –

- Waste Heat Recovery & Water Stewardship
- waste heat repurposed
- MEGA-i rainwater harvesting
- Circular economy

This is the paradox at the heart of our digital transformation. Supercomputing centres are essential for everything from climate modelling to AI-driven energy optimization. But they are also significant consumers of energy and water.

The average Power Usage Effectiveness (PUE) has traditionally been around 1.5 to 1.7. And water consumption is an increasingly critical concern. The challenge is to power our digital future without compromising our environment.

The solution is already here. Immersion cooling can reduce cooling energy by over 80% and achieve a world-class PUE below 1.1. HKUST has introduced the city's largest immersion cooling system—saving 900 tonnes of CO₂ and nearly HK\$3 million annually.

Way Forward

**Advancing the Frontiers of Sustainable and Intelligent Built Environment
For an Intelligent, Smart, Net-Zero Planet**

Building a Sustainable Future for Our Future Generations

Timeline 2026–2050 for Decarbonisation with key milestones

Emphasis on: "Collaboration for Intelligent, Smart, Net Zero Built Environment in Harmony with Nature" AND "Trusted Information"

- Implementing NbS and BSAP targets, alongside ESG, SDGs, Green Buildings
- Ensuring trusted information across lifecycles; Scaling openBIM and IFC X adoption for information exchange;
- Promote Sustainable supercomputing infrastructure
- Strengthening cross-border and global collaboration
- Strengthening public education

Thank You!