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DECARBONISING HONG KONG

ROADMAP TO A WORLD CLASS METROPOLIS

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Executive Summary – Strong foundations deserve recognition alongside the challenges that remain.

Decarbonising the built environment is an opportunity to contribute to the **Hong Kong Climate Action Plan 2050.**

Strong Foundations

Authority
Government leadership, ambition, strategy and plans.

Practitioner Expertise
Architects, construction, engineering and surveying.

Academia
Excellence in education and research.

Finance
Global financial expertise.

Instruments
Green building certification and technology.

Experience
Leading local and regional exemplars.

Construction
Co-ordinated cross-industry participation.

Key Challenges and Next Steps

Mainstream sustainable practices by fostering industry collaboration.

Encourage **retrofitting of existing buildings** through regulations and incentives.

Support **data transparency** to drive informed decision making.

Use **green certification** to scale up decarbonisation.

Address **education and awareness** to unlock incentives and utilise green financing.

Alignment of **valuation mechanisms** and incentives to drive investment and capital allocation.

SECTION 01

INTRODUCTION AND SUMMARY

Introduction

In November 2023 the **Australian Chamber of Commerce in Hong Kong** (AustCham) initiated presentations and discussions in partnership with Hong Kong Green Building Council and the Business Environment Council to **share opportunities, identify priorities and develop a decarbonisation roadmap** for Hong Kong's built environment.

Background

- Decarbonising Hong Kong's built environment is an opportunity to contribute to the **Hong Kong Climate Action Plan 2050.**
- **Mobilising green and sustainable investment** is crucial and The Hong Kong Monetary Authority (HKMA) is taking steps towards a local green taxonomy.
- The Hong Kong Stock Exchange is seeking market feedback on their proposal to enhance **climate-related disclosures** under its environmental, social and governance (ESG) framework.

Hong Kong has already laid **strong foundations** to implement decarbonisation of the built environment:

- **Authority**: Government leadership, ambition, strategy and plans.
- **Practitioner expertise**: Architects, construction, engineering and surveying.
- **Academia**: Excellence in education and research.
- **Finance**: Global financial expertise.
- **Instruments**: Green building certification and technology.
- **Experience**: Leading local and regional exemplars.
- **Construction**: Co-ordinated cross-industry participation.

About the Event: Sharing Opportunities, Solutions and Priorities.

In her opening remarks, **Josephine Orgill**, Chair of The Australian Chamber of Commerce in Hong Kong commented that the event was "**bringing together opportunities, solutions and priorities to jointly develop a built environment decarbonisation roadmap**."

The event comprised 2 parts:

- **Part 1** included 'State of Play' Presentations from **Diane Wong** - Under Secretary for Environment and Ecology, Government of HKSAR, **Russell Fortmeyer** - Global Sustainability Leader, Woods Bagot & US LEED Fellow, **Simon Ng** - CEO, Business Environment Council (BEC) and **Ir Dr Cary Chan**, Executive Director, Hong Kong Green Building Council (HKGBC).
- **Part 2** comprised panel discussions to take a Deep Dive into the topics of **'design', 'adapt' and 'value'.**

Purpose

Event Knowledge Partner, Savills, have documented the event, drawn conclusions together and summarised the outcomes of the event which sought to consider:

- Where do we go from here?
- How can we unlock the potential of Hong Kong's built environment?
- What are the meaningful next steps?

This summary of the event discussions concludes with **challenges and recommendations and a decarbonisation roadmap**. The playbook sets out more details of the common topics identified during the panel discussions.

Josephine Orgill, Chair of AustCham (L), Diane Wong, Under Secretary for the Environment, Hong Kong SAR (C) and Aino Kavantera, Co-Chair AustCham Construction, Property and Infrastructure Committee (R).

Part 1 Summary – State of Play

Diane Wong
Under Secretary for Environment and Ecology, Government of HKSAR

- Climate change and the need for ESG and decarbonisation initiatives is a global challenge.
- China aims to reach peak carbon emissions by 2030 and achieve carbon neutrality by 2060.
- Wwithin China, Hong Kong SAR intends to reduce emissions by 50% before 2035 and achieve carbon neutrality before 2050.
- The Hong Kong SAR government focuses on areas including electricity generation, green buildings, green transport, and waste management.
- The built environment sector plays a vital role in achieving these targets through initiatives around green building design, improved energy management, and sustainable waste practices.

Simon Ng
CEO, Business Environment Council Building Council

- The Business Environment Council has implemented initiatives to address waste management, clean air, renewable energy, energy-saving, and green buildings.
- The government has introduced policies for waste separation, recycling, green transportation, and raising public awareness.
- Challenges include limited sustainability teams in companies, confidence and investment barriers. The lack of involvement in green financing highlights the need for appropriate resources.
- The built environment sector can leverage government frameworks and green finance to drive progress in sustainability and decarbonisation.

Russell Fortmeyer
Global Sustainability Leader, Woods Bagot & US LEED Fellow

- Cities can make a significant impact, with potential savings of up to 40% towards a 1.5-degree Celsius world. Goals include zero carbon emissions by 2050 and a 60% reduction in carbon emissions.
- Different building types require tailored solutions, such as retrofitting commercial buildings. Building owners collaborate with architects, and policies like zero carbon buildings gain support.
- Los Angeles has implemented initiatives including energy audits and retrofit commissioning plans. Dkeeper retrofitting for older buildings remains challenging.
- Tangible benefits, such as repurposing petrol stations as charging stations, create opportunities.
- Collaboration is crucial, everyone shares responsibility to address climate change.

Dr Cary Chan
Executive Director, HKGBC

- Existing building sustainability initiatives only cover a small portion of the city's energy consumption, with the majority of smaller developers yet to adopt sustainable practices.
- Mainstreaming sustainability requires a baseline and comprehensive database are needed to track progress and align with different industries.
- Robust systems are necessary to promote neutrality and ensure accurate comparisons and benchmarking.
- Engaging engineers and finance professionals who understand genuine sustainability is crucial.
- The journey towards mainstreaming sustainability in the building sector is ongoing, but with ambitious targets, robust systems, and stakeholder engagement, progress can be made towards a sustainable future.

Part 2 Summary – Adapt, Design, Value

Adapt

- **Decarbonisation requires the establishment of an industry framework for adaptation.**
- Adaptation requires integration and embedment of sustainable building practices integrating ESG factors.
- Sectoral focus on TOD and developing a sustainable building construction supply chain contribute to reducing built environment carbon emissions.
- Retrofitting and adoption of building technology to drive green buildings practices requires supporting regulation, industry cooperation, education, skills and the enhancement of standardised measurement, benchmarks and monitoring.
- Mainstreaming sustainability frameworks. For example, NABERS is a state-by-state energy rating system to disclose energy consumption across building types.
- Mandatory energy disclosures and investor involvement could encourage in cross-sector collaboration, including start up innovators.
- Collective efforts are necessary to adapt existing buildings to prevent them becoming “stranded assets.”

Design

- **Decarbonisation requires regulations and incentives to ddesign new and retrofit existing buildings.**
- Designing sustainable retrofitting solutions is the most significant factor in improving sustainability performance.
- Increasing disparity between the number green certified retrofitted existing and new buildings means policies are required to support existing buildings bridge the gap.
- Developing a strong business case, technological advancements, and managing information to support retrofitting design projects are key ingredients.
- The challenges of mainstreaming sustainable practices include fragmented ownership and high retrofitting costs.
- Collaboration, data accessibility, green financing, and incentives are key drivers to accelerate retrofitting progress.
- Education, government intervention, and learning from global trends and best practices are also required.
- Industry-wide efforts are required to address policy gaps.

Value

- **Decarbonisation must have economic as well as a societal drivers.**
- Valuations that take account of green building premiums unlock incentives for landlords to take action.
- Stakeholder engagement, social aspects of green certification, incentives, collaboration, data sharing, retrofitting, and the importance of clear roadmaps are other challenges.
- The private sector is a driver of change through innovation and scaling up sustainable practices.
- Policymakers play a crucial role in setting and adjusting feasible targets to permit transparency and drive private sector competition.
- Affordable housing and incentivising retrofitting are different aspects of both social and financial value.
- An incremental carbon tax linked to specific milestones or thresholds is one incentive for decarbonisation.
- Realising value through adopting sustainable building practices also requires stakeholder engagement, collaboration, and clear guidance.

Key Challenges and Next Steps

Mainstreaming sustainable practices

The challenge in mainstreaming is diverse building ownership and fostering industry wide cooperation and collaboration from a range of stakeholders including government and finance

Next steps: foster cross industry collaboration through regulation, data transparency, education and so on to promote mainstreaming.

Retrofitting existing buildings

Addressing challenges in retrofitting requires government regulations to incentivise efforts. Industry collaboration is needed to develop innovative solutions; effective measurement helps verify the impact of retrofitting.

Next steps: regulatory requirements to achieve minimum green standard for existing buildings with grants to complete retrofit work.

Data sharing and benchmarking KPIs

Data transparency and implementing benchmarking/KPIs enable effective monitoring and evaluation of sustainability efforts. Transparency drives informed decision-making and performance improvement efforts.

Next steps: set clear data standards to support transparent declarations of Energy Use Intensity as an open measure of sustainability performance.

Green certifications and standards

Green certifications are far more common among new buildings than existing buildings. Incentivising sustainability improvements through green certifications is the key to scaling up decarbonisation efforts.

Next steps: adopt market-based incentives, stakeholder engagement and technology to support adoption of green certifications for existing buildings.

Education and awareness

Decarbonising the built environment depends on education and awareness. The result is recognition of the business opportunities and the potential role of incentives and green finance.

Next steps: develop a range of awareness and education programmes, including education for the young. Develop the skills and expertise for decarbonisation of existing buildings.

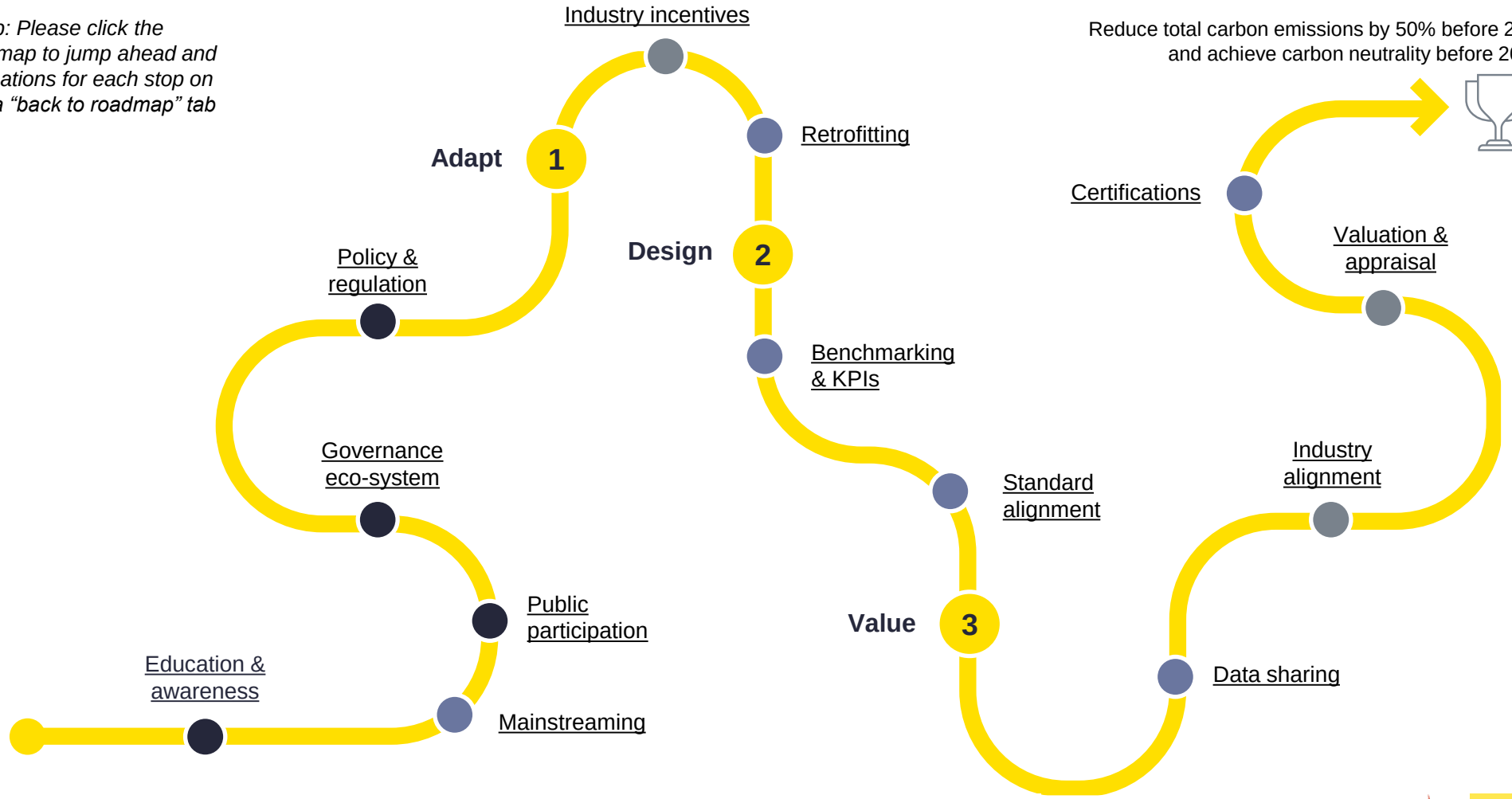
Valuation, incentives and industry alignment

Valuation mechanisms, along with government incentives and industry alignment, can be co-created to drive sustainable investments and capital allocation.

Next steps: regulatory intervention to align industry, incentives, finance and valuations to support mainstream decarbonisation and other sustainable practices.

Decarbonisation roadmap for the built environment

How to navigate the roadmap: Please click the hyperlinked tabs on the roadmap to jump ahead and read relevant detailed explanations for each stop on the journey. Each page has a "back to roadmap" tab to bring you back here.



START
Built environment decarbonisation through **Adapt, Design and Value.**

SECTION 02

BUILT ENVIRONMENT DECARBONISATION PLAYBOOK

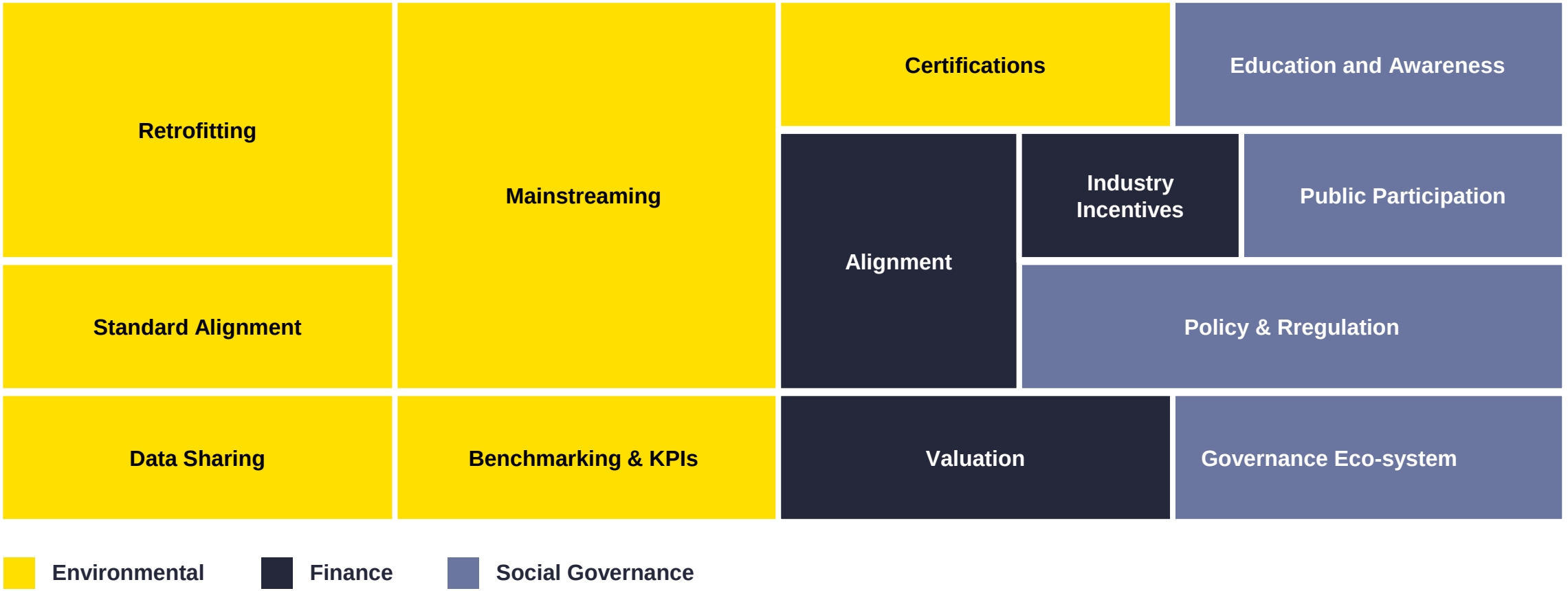
The built environment decarbonisation playbook is based on recurring topics identified during the panel discussions.

Each panel had their own focus, recurring topics were identified during the conversations and the playbook synthesises the highlights from different panels for each topic.

Panel 1 - Adapt	Panel 2 - Design	Panel 3 - Value
Mainstreaming	Retrofitting	Valuation
Retrofitting	Incentives	Stakeholder engagement
Policy & regulation	Mainstreaming	Data transparency
Incentives	Benchmarking & KPIs	Incentives
Certification	Policy & regulation	Alignment
Public engagement	Data & information	Innovation & talent
Benchmarking & KPIs	Collaboration & education	Retrofitting

The key topics raised during the event provide a framework for deeper analysis and help develop an action-based decarbonisation playbook.

The size of the pieces representing each topic roughly depends on the extent of discussion focus on each topic, and their connection to the aspects of environmental, finance and social governance.



Mainstreaming sustainable practices faces several challenges. The solutions already exist and there are opportunities for the built environment.

Mainstreaming

- the integration and incorporation of ESG considerations into mainstream business practices and decision making.

Why is mainstreaming important?

- it enables organisations to address urgent challenges, enhance resilience and meet regulatory expectations.

Challenges

01

Mainstreaming sustainable practices in the context of **diverse building management practices, ownership and responsibility** complicates the challenges of integrating a holistic approach in a fragmented ownership.
Government intervention may help **provide exemplar sustainable models** for managing older existing buildings.

02

A study conducted by the Asia Networks has identified three key priorities that should be targeted.

- Establish a baseline and create a comprehensive database.
- Develop robust systems that ensure proper baselines are used for benchmarking.
- Engage professionals to distinguish between genuine sustainability versus greenwashing.

Opportunities

03

Mainstreaming sustainable practices requires collective effort and collaboration. Data is important to access green finance and to develop incentives to accelerate retrofitting.

04

Existing buildings present an opportunity to develop mainstream approaches. Education, awareness, government intervention, and learning from global trends and best practices all have a role in driving sustainable retrofitting efforts.

05

Incorporate environmental, social, and governance (ESG) factors into all measures and building sustainable communities. TOD (Transport Oriented Development) is a key example of mainstreaming sustainability.

Next Steps: Consider and adopt measures outlined above to encourage mainstreaming of sustainable built environment practices.

Retrofitting existing buildings revitalises urban areas, preserves heritage, community and cultural value and improves sustainability performance.

Retrofitting

- the process of making improvements or modifications to an existing building or structure.

Why is retrofitting important?

- it plays a crucial role in reducing energy consumption, saving operating costs and improving well-being in the built environment.

Challenges

01 Financial constraints.

02 Technical complexities.

03 Fragmented ownership within buildings.

04 Regulatory barriers.

Opportunities

01 Industry collaboration.

02 Standardisation of measurement practices for valuation, energy audits and ESG assessments.

03 Incentives for adoption of green materials.

04 Job creation and economic growth.

Insights

Revitalisation and adaptive use

- Retrofitting existing buildings contributes to the revitalisation of urban areas and communities.
- Adaptive reuse of buildings preserves their tangible and intangible heritage, adds to the local identity, and enhances community pride. An example is Tai O Heritage Hotel is an example of co-dependencies of community, job creation, economic payback and preservation.

Preservation of heritage

- The preservation of heritage buildings and their historical significance enables adaptation and modernsaction while preserving architectural and cultural value.
- It allows for the integration of contemporary amenities, accessibility features, and sustainability measures without compromising the unique character and historical integrity of the buildings.

Community Engagement and social impact

- Foster a sense of ownership and inclusivity leading to revitalisation and community pride.
- Job opportunities, economic benefits, preserves heritage and improved quality of life.

Next Steps: Focus collaborative efforts on overcoming challenges in retrofitting of existing buildings.

Standardised measurement practices, benchmarks and robust systems are key for setting KPIs and monitoring.

Benchmarking and KPIs

Sustainability data transparency supports capital allocation. Data is essential for baselining and benchmarking of existing assets. Analysis of data is used to determine the need for, and prioritisation of, upgrades based on the potential payback.

Challenges

01 Standard practices for measurement and target setting.

02 Managing information and prioritising buildings for retrofitting.

03 Alignment of policy, incentives and funding to drive retrofitting efforts.

Opportunities

01 To maximise the impact and opportunities, we can first enhance local regulatory and policy frameworks. We should advocate for a Hong Kong specific roadmap for the built environment. A Building Decarbonisation Ordinance can set the overall direction.

02 Strengthen local regulations like BEC (Building Energy Code), EAC (Energy Audit Code) and MEELS (the Mandatory Energy Efficiency Labelling Scheme) and call for increased clarity in their contributions towards Hong Kong's net-zero 2050 goal.

03 Business-as-Mutual as a win-win partnership model among end-users, products, service providers, R&D and financial support. It is also important for multi-stakeholders to collaborate towards decarbonisation.

Insights

- Energy Use Intensity (EUI) is a key performance indicator for building energy performance but needs to be based on standardised measuring standards.
- In Hong Kong, EMSD has provided online benchmarking tool to facilitate the comparison of building's energy performance.
- International standards like ASHRAE add value to global alignment and identify improvement gaps compared to global benchmarks.

Target Setting and Monitoring:

- Managing a diversified portfolio by identifying top performers and opportunities across the portfolio.
- Investment in energy saving measures helps balance business growth and energy efficiency.

Some factors that influence on energy use:

- Building design, building classification, trade mix, numbers and types of energy-used equipment, duration of operation hours and occupancy rate.
- Differences in energy consumption and floor area accounting and other floor area metrics (CFA/GFA/IFA) makes direct comparisons difficult.

Next Steps: Consider to set clear benchmarking protocols and practices and establish EUI as the principal measure of sustainability performance.

Establishing transparent platforms and data management protocols enables data quality improvements and sharing.

Data sharing

- Data supports informed decisions, prioritising investments, and optimised energy use.
- Stakeholders need access to data to support decision making in retrofitting, investment or as potential end users.
- Data sharing supports accurate valuation of green buildings by enabling assessment of potential upgrade costs and opportunities.

Considerations for energy data sharing:

Data quality and reliability

Establish data quality assurance processes, including data validation, verification, and auditing. Maintaining accurate and up-to-date data improves the credibility and usefulness of shared energy information.

Data standardisation

Establish common data standards and formats to enable effective data sharing. Standardising data collection methods, metrics, and reporting formats ensures consistency and compatibility across different energy systems and stakeholders. This standardisation facilitates data integration, analysis, and comparison.

Data access and ownership

Clarifying data access rights and ownership is essential in energy data sharing. Clear agreements on data sharing protocols, usage rights, and intellectual property. Open data initiatives or data-sharing platforms can help facilitate data access while ensuring appropriate permissions and restrictions.

Data governance and ethics

Clear data governance frameworks and ethical guidelines are important for energy data sharing. This ensures responsible data use, respects privacy rights, and promotes transparency and accountability. Compliance with relevant data protection regulations and ethical principles should be prioritised.

Building managers

Landlord

Data

Next Steps: Consider and establish data governance to support transparency to support efficient capital allocation.

Green certifications are not without challenges including different methodology, disparities between new and existing buildings and impact on values.

Certifications

- Sstandards that are typically awarded by independent third-party organisation and provide recognition for meeting performance criteria.

Challenges

- Main focus on new buildings.
- Lack of incentives and support for retrofitting.
- Valuation of green vs brown buildings.
- Location-dependent premium for green buildings as a factor in valuation.
- Need for data sharing and monitoring progress.
- Need clear roadmaps and collaboration in sustainability improvements.
- Embedding sustainability into existing buildings.

Opportunities

- Focus on green certification for retrofits.
- Allocating incentives and support for retrofitting.
- Auditors accepting green certification in property valuations, leading to potential benefits in terms of loan-to-value ratios and property values.
- Stakeholder engagement and integration of social aspects in green certification.
- Availability of technologies contributing to greater efficiency in buildings.
- Successful examples of green building certifications like the Australian NABERS rating system.
- Importance of disclosure and reporting for providing stakeholders with access to information.

“According to HKGBC, there is a disparity of 1,700 new buildings and 100 existing buildings that have been green certified. Incentives and support for retrofitting around 60,000 existing buildings would help bridge the gap.” Jonathan Lee, Savills.

Key takeaway: *The challenges include the disparity in green certifications between new and existing buildings, retrofitting, valuation considerations for green buildings and fragmented ownership. The opportunities lie in incentivising retrofits, improved valuations, stakeholder engagement, technological advancements, and successful certification systems.*

Green building certification plays a key role in setting minimum standards and best practices.

Next Steps: Consider and refocus the role of certification on existing buildings with a focus on the business case for retrofitting.

Aligning standards with climate action plans and international best practices plays a role in setting incentives to drive sustainability efforts.

Standard Alignment

The process of adhering to recognised frameworks, guidelines, or standards that provide a common set of principles and criteria for measuring and reporting.

Discussion around standard alignment

Alignment and Integration:

- Education and awareness of recognised frameworks and standards.
- Alignment of practices with climate action plans.
- Need for alignment with international standards.
- Role of the government in setting near-term targets.
- Emphasis on the need for alignment to achieve sustainability goals.

Valuation and Measurement:

- The role of standards in the valuation of green buildings.
- Emphasis on data sharing and monitoring progress.

Incentives and Collaboration:

- Incentives and collaboration are key to driving sustainability efforts.
- Frameworks are required to establish incentives and collaboration.

Insights

Alignment with Climate Action Plans:

- Aligning practices with climate action plans involves integrating strategies that reduce greenhouse gas emissions and mitigate climate change impacts.
- This can include adopting energy-efficient building designs, utilising renewable energy sources, implementing sustainable transportation solutions, and promoting resource conservation.

Alignment with International Standards:

- Examples of widely recognised international standards include NABERS, BEAM+, LEED (Leadership in Energy and Environmental Design), BREEAM (Building Research Establishment Environmental Assessment Method), and WELL Building Standard.
- Aligning with these standards ensures that sustainable practices are consistent, measurable, and internationally recognised, enhancing credibility and facilitating benchmarking across projects.

“Decarbonising Hong Kong’s built environment needs to consider the financial sector, merely estimating the carbon emissions from this industry is a challenge. The Research Centre for Sustainable HK is making a significant contribution to this, and the results can be used to help further decarbonise the built environment that the sector depends on.” Professor Linda Chelan Li, City University of Hong Kong.

Improving health, connectivity and live ability depends on public participation to prioritise communities.

Communities/ Public participation

Putting communities first and prioritising people centric results helps improve human health and livability. This includes reducing urban heat islands, increasing green-blue infrastructure, air quality and so on. Encouraging local and regional standards results in wider adoption.

Effective, inclusive and sustainable development depends on the participation of communities and the public.

Engaging community members allows for a better understanding of their needs, priorities, and environmental and social contexts. In this way, decarbonisation initiatives are more contextually appropriate, effective and sustainable.

- Buildings serve different purposes to different stakeholders. They have significant impacts on communities.
- Tai O Heritage Hotel is an example of a project that has a bond with the local community. It is a source of local pride and jobs in a location far from the main business districts of Hong Kong.
- This represents a process of buildings giving back to the community and a catalyst for social enterprises.
- Collaboration with startups and others is led by the engagement of developers in sustainable practices.

Insights

Additional points to consider for communities

Mixed use development and connectivity

- Interconnected urban planning creates vibrant “resilient” neighborhoods.
- Design communities that integrate residential, commercial, recreational, and educational spaces within proximity for a sense of community.

Community health and services

Neighborhoods with access to healthcare facilities, schools, community centers, and other essential services.

Green jobs and economic opportunities

Sustainable initiatives result in green jobs and economic opportunity.

Community engagement and participation

- Foster community engagement and participation in the planning, design, and implementation of sustainable initiatives.
- Involve local residents, community organisations, and stakeholders to ensure all needs, preferences, and perspectives are considered.

Education and awareness help drive and embed a long-term mindset for environmental responsibility.

Education and Awareness

Education and awareness in sustainability requires long-term commitment.

Empowering individuals and communities with knowledge, fosters behavior change, and encourages. This enables collective action towards a more sustainable and resilient future.

“Awareness has to start with early education from kindergarten as it is their future!” Ronald Lu, Ronald Lu & Partners.

- Collaboration among stakeholders helps drive sustainability innovation.
- Promoting education and awareness helps stakeholders achieve a common mindset of environmental responsibility.
- Impactful decarbonisation opportunities are presented by existing buildings. There is potential for green financing and incentives to accelerate retrofitting.

Insights

Education and Awareness

- Awareness campaigns.
- Professional training / qualifications.
- Skill development.
- Research and innovation.

Awareness related promotion

- Educational institutions and programs.
- Public outreach programs.
- Green building and sustainability conferences.
- Sustainability workshops and seminars.

Collaboration

- Multi-stakeholder / disciplinary engagement and collaboration.
- Sharing best practices.
- Public private partnerships.
- Community engagement.

Key takeaway: *Education and awareness drive sustainable practices. Ongoing education starts from a young age, to create a culture of sustainability. While education builds awareness, enhances skills, and promotes innovation, collaboration can enable the sharing of expertise and resources. Together, these elements contribute to the successful implementation of a more sustainable and resilient built environment.*

A governance eco-system requires government intervention, stronger incentives, and supportive policies to address specific considerations.

A governance eco-system refers to the mechanisms by which, in this instance, decarbonisation of Hong Kong's built environment can be managed. This includes not just the buildings and their sustainability performance but also social aspects including decision making, power relations and social interactions. The governance eco-system comprises a number of players, each one with it's own role in generating and managing a direction and results. Collectively the participants direct the goal and target setting, standards, regulations, capital flows, communication, education and awareness and a range of other factors.

Governance eco-system

- According to the BEC, among businesses in Hong Kong, "only 49% have dedicated sustainability team and governance approach" and "14% are not confident that their organisation will achieve the committed decarbonisation targets".
- Some companies have the technology but hesitate to invest due to economic considerations.
- Regulators can play a role in driving carbon emissions reductions across the built environment with regulations and incentives for businesses to adopt sustainability measures.
- Focused intervention to align policy supported by appropriate funding based on global trends and best practices in decarbonisation.

Insights

- The call for increased intervention and stronger incentives for businesses to adopt sustainability measures reflects the need for a supportive environment that addresses uncertainties and economic considerations.
- Clear policies, financial support, and fostering collaboration all play a crucial role in helping businesses achieve decarbonisation targets.
- Industry seeks clear policy to drive the adoption of sustainable practices, provide necessary tools, resources and guidance, and create a more sustainable and resilient future.
- Some simple additional steps for Hong Kong might include increasing transparency around building related energy data.

Regulators

Incentives

Targets

The policy and regulatory environment can push and pull various levers to drive decarbonisation efforts.

Policy and regulation

- Government mechanisms and regulations are key drivers for decarbonisation of the built environment.
- Regulatory frameworks, disclosure requirements, and government support come together to drive sustainable development.
- Alignment with international standards and near-term target setting by government.

Panel 1

The need for government regulations, industry cooperation, and measurement practices.

Green building practices are driven by a combination of factors, including effective government mechanisms and regulations that promote building performance.

Panel 2

Incentives and funding to pull retrofitting efforts and alignment of policy to push.

Where there are policy gaps, these should be bridged. There is a need for collaboration among stakeholders to align interests and address them.

Panel 3

Government and regulators have a role in developing local assessment tools, funding infrastructure programs, and implementing frameworks for green finance.

Government-led integration and clear roadmaps are important in providing incentives and mandatory actions for sustainable practices.

Presenting the business case helps accelerate decarbonisation. Case studies can demonstrate financial, environmental and social benefits.

Industry Incentives

Industry incentives include policies, regulations, mechanisms and initiatives to motivating and reward businesses for adopting sustainable practices.

These incentives should be designed to incrementally encourage industries to reduce their environmental impact, enhance social responsibility, and contribute to a more sustainable future.

The business case

- Financial incentives play a role in encouraging building owners and tenants to adopt sustainable measures.
- This includes collaboration with startups to harness innovation in the decarbonisation journey.
- Developing a business case to encourage retrofitting may include carbon credits as tradable incentives for buildings that achieve carbon savings.
- Alignment of policy, incentives and funding are needed to effectively support retrofitting initiatives.

Insights

The need for a strong business case:

- A strong business case is required for building owners to justify the cost and risk of retrofitting.
- Case studies of successful retrofitting projects should be publicised with financial and sustainability details.
- The evaluation considers potential operating cost savings, ROI, property value, regulatory compliance, environmental impact, health and well-being, and available incentives.

The financial and environmental benefits:

- Clear financial and environmental benefits of sustainable retrofitting can result in investment in decarbonising the built environment.
- The financial benefits vary depending on the specific retrofitting measures implemented, the local energy costs, the size and type of the building, and the duration of the investment.
- Financial analysis should include cost-benefit assessments, return on investment calculations, and energy savings projections.

Valuations support the business case by reflecting green certifications and green premiums helping drive investment and capital allocation.

Valuation

"We all have responsibility to decarbonise Hong Kong. We can voice out our needs as a consumer, end-user, supplier and client so that whole eco-system can work together." Hannah Jeong, Colliers.

Valuation:

Incorporate intangibles into financing decisions – particularly around valuations and ROI.

Valuation discussion highlights:

The need for a strong business case

- The factors involved in valuing green buildings compared to brown buildings are complex.
- Premiums for green buildings are location dependent and multiple other factors are considered in valuation. A 2-3% premium is noted in a core CBD location like Central vs 5% in decentralised districts like Kowloon East and Quarry Bay.
- Green capital expenditure is reflected in property value and auditors now accept green certification in property valuations.

Insights

Challenges in valuing green buildings:

- Complexity of green features.
- Market awareness and demand.
- Comparable data availability and quality.

Opportunities in valuing green buildings:

- Cost saving and financial performance.
- Enhanced marketability and competitiveness.
- Investor demand and long-term value.

Considerations for investors:

- Premium realisation and market demand.
- Regulatory and policy environment.
- Stakeholder perception and social impact.
- Renewable energy ROI and wider benefits.
- Long term maintenance costs and efficiency.
- Future proofing.

Cross industry alignment in valuation, financing, and standards with sustainability goals drives sustainable practices and market transformation.

Industry Alignment

Incorporate intangibles into financing decisions – particularly around valuations and ROI.

Stakeholder collaboration draws on regulators, academics, industry associations practitioners and others to share their knowledge and experience.

Industry Alignment:

- Connecting valuation, financing, and setting standards aligned with desired sustainability outcomes.
- Alignment helps ensure that financial benefits of sustainability are properly assessed and valued, motivating organisations to integrate sustainability into their business strategies.
- The alignment will then send a clear market signal to developers, building owners, investors, and tenants, and thereby can drive adoption of sustainable practices.
- Aligning financing mechanisms, such as green bonds or sustainable investment fund can provide investors with confidence in the marketplace.

Insights

Industry alignment:

- Alignment in valuation, financing, and setting standards with desired sustainability outcomes is essential for driving sustainable practices.
- It enhances the financial incentives, facilitates access to capital, sets performance benchmarks, drives innovation, supports market transformation, and reinforces regulatory initiatives.

Market Transformation:

Alignment in these areas makes a clear market signal to be sent to developers, building owners, investors, and tenants. This helps shift market preferences towards sustainable buildings and practices, creating a demand-driven ecosystem that supports sustainable decision-making and long-term sustainability goals.

Regulatory Support:

Governments and regulatory bodies can use these aligned mechanisms to incentivise sustainable retrofitting, new construction, and compliance with environmental regulations. Regulatory support, combined with alignment in other areas, strengthens the business case for sustainable practices and encourages broader adoption across the industry.

SECTION 03

ACKNOWLEDGEMENTS

Sponsor Acknowledgement

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The Savills Sustainability Advisory Services team captured the thoughts, ideas and outcomes from the event to produce this 'Hong Kong Built Environment Decarbonisation Playbook'.

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Speakers Acknowledgement

With thanks to the event speakers for sharing their expertise, advice and experience:

- Diane Wong - Under Secretary for Environment and Ecology, Government of HKSAR
- Russell Fortmeyer - Global Sustainability Leader, Woods Bagot & US LEED Fellow
- Simon Ng - CEO, Business Environment Council (BEC)
- Ir Dr Cary Chan - Executive Director, Hong Kong Green Building Council (HKGBC)
- Julian Bott - Managing Director, APAC, Cundall
- Ir Mr. Colin Hong - Director of Engineering (HK), Link REIT
- Hannah Jeong - Head of Valuation & Advisory, Colliers
- Ir Sr Jonathan Lee - Deputy Managing Director, Technical, Safety and Sustainability (TSS), Savills
- Steve Lewis - Partner - Head of Infrastructure, Major Programmes and Construction Advisory, EY
- Professor Linda Chelan Li - Professor of Political Science at the Department of Public Policy, City University of Hong Kong
- Dr. Ronald Lu - Founder & Chairman, Ronald Lu & Partners
- Grace Kwok - Chairman and Executive Director, Allied Sustainability and Environmental Consultants Group Limited (AEC Group)
- Melanie Kwok - General Manager Sustainability, Sino Group
- Eddie Tse – Head of Sustainability, Gammon Construction

The Organising Committee

Thanks to the Construction, Property and Infrastructure Committee for their dedication to building a connected, influential and diverse community, and ***especially*** to the Net Zero Working Group Committee for their efforts bringing us this event.

Construction, Property and Infrastructure Committee Leadership

Brian Shuptrine
Asia Head of Real Estate
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Aino Kavantera
Former Principal, Hong Kong
PMDL
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Helen Cheng
Director, Sustainability
and Net Zero
Turner & Townsend

Savills sustainability advisory services deliver and implement sustainable property solutions to landlords and occupiers.

Savills sustainability policy and initiatives

- Savills Group is committed to the protection of the environment and is focused on climate-related risks and working together with its clients, suppliers and the local communities on which its operations impact to deliver a more sustainable future.
- Our in-house sustainability policy aims to achieve a positive impact on the environment and society, whilst maintaining robust governance measures.

Our sustainability services

- Our services are aligned with your view of sustainability as part of the real estate development and investment strategy and help realise the value adding opportunity.
- We work with occupiers to adapt and embed your commitment to sustainability and responsible business practices into the workplace.

Savills Earth works with a wide range of organisations to deliver sustainability advisory services. Our specialists offer practical advice to turn sustainability targets and commitments into reality.

- Businesses are looking beyond financial results.
- They increasingly consider the wider impacts they have on the environment and society.
- Savills advise on impact measurement and management, strategic advisory and corporate reporting.
- We understanding the opportunities and impacts for society and its stakeholders in organisational decision-making.

Our sustainability advisory services include:

- Corporate sustainability strategy
- Net zero transition
- Social sustainability
- ESG reporting
- Green buildings and certifications

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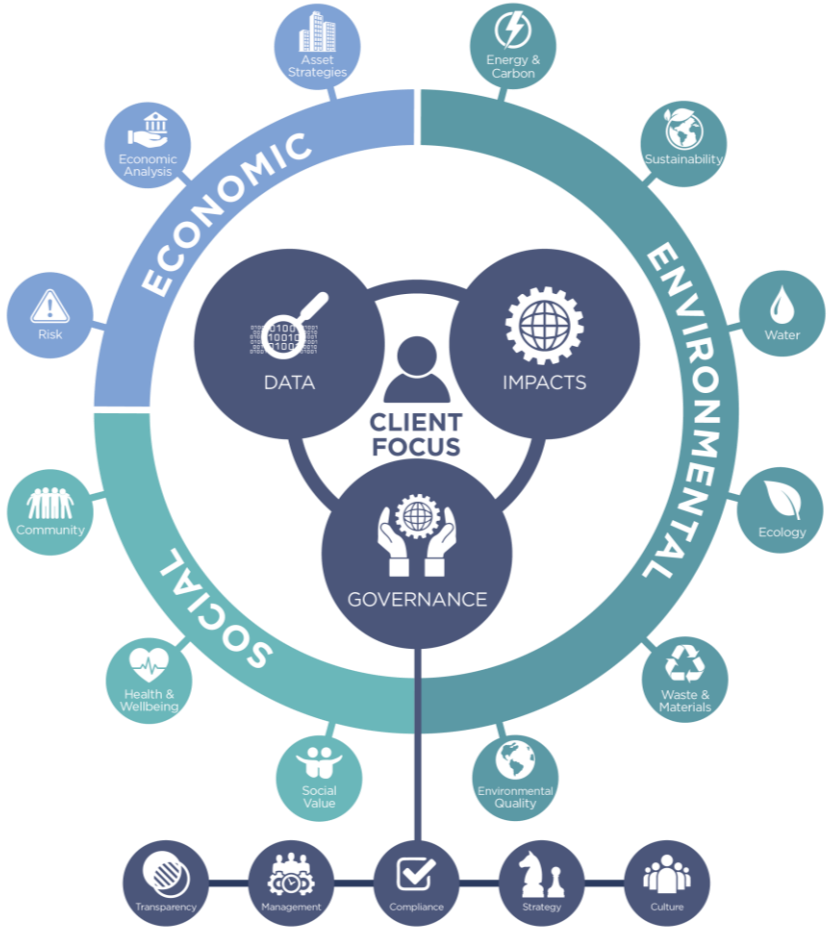

About AustCham Hong Kong

The Australian Chamber of Commerce in Hong Kong was incorporated in 1987 and is the peak body representing the Australia-Hong Kong business community.

The Chamber's mission is to promote and represent Australian business and values, while enabling members to connect, engage and grow the bilateral relationship.

AustCham is one of the largest and most influential international business organisations in Hong Kong. The Chamber represents more than 900 members and 240 companies. Our diverse membership is a cross-section of start-ups, SMEs, NGOs and large corporates across all industries and expertise.

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SECTION 04

APPENDICES

Image note: Hong Kong has around 510 ha of mangroves. They help with protection against wave surges, support marine ecosystems and carbon sequestration. Hong Kong has a ‘no net loss of wetlands’ policy.

Part 1 – State of Play: Overview

Introduction

Developed in partnership with Hong Kong Green Building Council and the Business Environment Council, this AustCham-initiated event brought together a cross-sector audience to share the opportunities relating to a low carbon economy, identify priorities for investment and jointly develop the built environment decarbonisation roadmap for Hong Kong.

The event comprised Part 1 ‘State of Play’ Presentations from Diane Wong - Under Secretary for Environment and Ecology, Government of HKSAR, Simon Ng - CEO, Business Environment Council, Russell Fortmeyer, Global Sustainability Leader, Woods Bagot and Cary Chan, Executive Director, Hong Kong Green Building Council.

In her opening remarks, Jo Orgill, Chair of The Australian Chamber of Commerce commented that the event was “bringing together opportunities, solutions and priorities to jointly develop a built environment decarbonisation roadmap.”

Simon Ng (L) asks the audience for directions while Russell Fortmeyer (R) points the way.

Part 1.1 – State of play: Diane Wong - Under Secretary for Environment and Ecology, Government of HKSAR

Speaker: Diane Wong - Under Secretary for Environment and Ecology, Government of HKSAR

The distinguished first speaker from government sector, Diane Wong, Under Secretary for Environment and Ecology, Government of HKSAR made the following key points.

Climate change poses unprecedented global challenges, leading to a growing demand for ESG and decarbonisation initiatives worldwide.

In response to the climate crisis, China has committed to peaking carbon emissions before 2030 and achieving carbon neutrality by 2060. Hong Kong, in support of these goals, aims to reduce total carbon emissions by 50% before 2035 and achieve carbon neutrality before 2050. On this, “The Austcham contribution to promoting green practices are highly appreciated.”

The Hong Kong SAR government has strategies in key areas:

- Electricity Generation: Hong Kong aims to achieve net-zero electricity generation by 2050.
- Energy Saving and Green Buildings: Hong Kong is committed to promoting energy-saving and green buildings.
- Green Transport: Hong Kong is actively promoting green transport and targets zero emissions in the sector by 2050.
- Waste management: The government aims to develop advanced waste-to-energy facilities and reduce reliance on landfills by 2035.

The built environment sector plays a crucial role in achieving these targets by promoting green building design, improving energy management, supporting low-carbon lifestyles, and implementing sustainable waste management practices. This set the scene for the next presentations.

Part 1.2 – State of play: Russell Fortmeyer, Global Sustainability Leader, Woods Bagot

Russell Fortmeyer, Global Sustainability Leader, Woods Bagot & US LEED Fellow presented materials including Los Angeles as a case study.

Both Los Angeles (LA) and Hong Kong (HK) are part of the C40 Cities network, which focuses on addressing climate change at the urban level. Globally, cities have the potential to contribute 40% of the required savings for achieving a 1.5-degree Celsius world. Setting ambitious milestones, such as achieving zero carbon emissions by 2050 and reducing carbon emissions by 60%, requires breaking down the roadmap into actionable steps.

Different solutions apply to different building types and include possibilities for retrofitting commercial buildings. Building owners are engaging architects to conduct comprehensive assessments of buildings and systems. It is crucial to actively engage the market and encourage voluntary policies, such as the commitment to zero carbon buildings that many architecture firms have already signed up for (AIA 2030 Challenge for New Buildings).

Some initiatives in LA include the requirement for energy audits and annual publication of performance, creating benchmarks and transparency in line with ESG goals. Additionally, LA has introduced a retrofit commissioning plan every five years to drive improvements.

The challenge for LA is investing in deeper retrofitting for commercial buildings that have been in operation for 40 years or more. These initiatives must come with tangible benefits to encourage participation and engagement. An example is rethinking petrol stations. With the transition away from fossil fuel cars there is an opportunity to reimagine petrol station sites as charging stations, where the charging process takes approximately 30 minutes meaning new commercial opportunities.

A spirit of cooperation is crucial, as everyone is collectively responsible for addressing climate change.

LAX Midfield Satellite South – Woods Bagot

LA's **Electrification Ordinance** (2022):
- No new fossil fuel connections in the city.
- CA Title 24 **Energy Code** embraces heat pumps.

CalGreen's **Embodied Carbon Reduction Code** (2024).
California's **EV Car Sales Mandate** (2035).
LA **Better Buildings Challenge**: 22% reduction in energy use by 2025 (2015 baseline).

Part 1.3 – State of play: Simon Ng - CEO, Business Environment Council Building Council

Simon Ng, CEO, Business Environment Council, mentioned the various policy papers and initiatives introduced, focusing on areas such as waste management, clean air, increasing the share of renewable energy sources in the electricity mix. Other efforts focus on energy-saving measures and promoting green buildings. Buildings account for a significant portion of energy consumption and promoting the adoption of green building practices are crucial steps in the decarbonisation journey.

The government initiatives include waste separation at source, expanding recycling facilities, and raising public awareness about proper waste handling as well as promoting green transportation options.

To facilitate discussions and collaboration, the government has established the Council for Climate Change. This platform allows stakeholders to share insights, address challenges, and work together towards sustainability goals.

According to the BEC, while many companies have committed to sustainable practices, only 49% have dedicated sustainability team and governance approach, while 14% lack confidence in achieving decarbonisation targets.

Investment, not technology, is a barrier to implementation. There is a growing call for the government to play a larger role in reducing carbon emissions and providing stronger incentives for businesses to adopt sustainability measures.

Additionally, there is a significant gap in green financing and investments. A survey revealed that 77% of respondents were not involved in green financing, highlighting the need for the right tools, methods, and resources to accelerate the decarbonisation process.

In conclusion, achieving sustainability and decarbonisation requires collaboration and action from all stakeholders. The built environment sector plays a pivotal role in this journey, leveraging government frameworks, resources, and green finance opportunities.

Part 1.4 – Ir Dr Cary Chan, Executive Director, HKGBC

Dr Cary Chan, Executive Director, HKGBC explained that existing building sustainability initiatives cover less than 20% of the city's total energy consumption. The remaining 80% falls under smaller developers that have yet to adopt significant sustainable practices. A major challenge is mainstreaming sustainability. To address this, we need to establish a baseline and create a comprehensive database to track progress and align with different industries.

Secondly, we need robust systems that promote neutrality and ensure proper baselines are used for comparison and benchmarking. Finally, it is crucial to engage engineers and professionals in the finance sector who can discern what constitutes genuine sustainability.

Mainstreaming is also an opportunity. One such opportunity lies in the area of retrofitting existing buildings. By implementing sustainable practices and energy-efficient technologies in older structures, we can significantly reduce their carbon footprint and contribute to meeting our carbon budgets.

The journey towards mainstreaming sustainability in the building sector is ongoing. By setting ambitious targets, developing robust systems, and engaging stakeholders from various industries, we can make progress in a sustainable future.

Ir Sr Jonathan Lee (L) and Ir Dr Cary Chan (R) enjoy a selfie moment.

Part 2 – Adapt, Design, Value: Overview

Part 2 took a Deep Dive into the topics of ‘design’, ‘adapt’ and ‘value’ with panelists from industry in discussion around each of those topics.

- What does this mean?
- Having considered the state of play in part one, we turned our attention to cross-sector knowledge sharing with industry insiders.
- The aim is to identify sector-based solutions for co-development of a 5-year Industry Action Plan.

From left to right: Kirsten Mundy, Brian Shuptrine, Aino Kavantera, Daniele Albanese, Lizette McNeill, Alex Katsanos and Hannah Jeong.

Part 2.1 – Design

The issue of stranded assets refers to underperforming buildings or those facing challenges and opportunities. The importance of building sustainable communities and integrating ESG factors into all measures.

Decarbonisation is a priority for all building owners, addressing climate risks should be a collective effort. Buildings serve multiple purposes for example the heritage hotel in Tai O which is a former police station on Lantau Island.

TOD (Transport Oriented Development) enables people to reach their workplaces within 30 minutes. Importance of incorporating sustainable practices into manufacturing plants.

Retrofitting and technology in existing buildings is a challenge that needs government regulations, industry cooperation, and measurement practices.

The Australian NABERS (National Australian Built Environment Rating System) rating system has been ‘mainstreamed’ and covers over 75% of commercial buildings rated and has helped achieve significant energy and carbon emission reductions. Key drivers for progress include compulsory disclosures. In Australia, when selling or leasing assets, building owners must disclose the performance of their buildings. NABERS is the tool to do that.

Cross-sector collaboration, reporting, and finding the right balance between greenwashing and green hushing. The goals of design are to integrate sustainability measures into building practices, address climate risks, retrofitting existing buildings, and the role of collaboration, reporting, and awareness in driving sustainable development.

Green building practices are driven by a combination of factors, including effective government mechanisms and regulations that promote building performance. The necessary design knowledge and skills to drive effective decarbonisation already exist within the built environment engineering and architectural industry. The challenge remains how to effectively harness this capability.

Investors play a significant role in driving change and the climate pathway standard and government regulations further encourage disclosure which in time will deliver further progress.

Collaboration with innovation startups can be instrumental in the decarbonisation journey and provides opportunities for developers to engage in sustainable practices. The importance of transparency and stakeholders' access to information through reporting.

Overall, the speakers highlighted the importance of government regulations, measurement practices, collaboration with startups, and education to accelerate the adoption of sustainable building practices. They emphasised the need for transparency and disclosure, as well as the role of investors and financing options in driving change. The role of and need for education and awareness in driving sustainable practices was highlighted.

Part 2.2 – Adapt

The significance of retrofits in improving building performance and driving energy efficiency was a key point discussed during the panel. **Jonathan Lee** highlighted the importance of retrofitting for maintaining and improving buildings over time. He mentioned there is a significant disparity between the number of new buildings achieving green certification and the number of older buildings doing so. While approximately 1,700 new buildings were green certified, only about 100 older buildings were. The gap could be bridged with incentives and support for retrofitting efforts in existing buildings. A total of around 60,000 existing buildings have potential for retrofitting.

Eddie Tse emphasised the need for a strong business case to encourage clients to pursue retrofitting projects. Lack of incentives was again identified as a significant barrier to implementation. He also mentioned that there are still technological gaps in retrofitting practices that need to be addressed.

Linda Li raised the issue of mainstreaming sustainable practices, particularly in the context of diverse building ownership, including individual owners. She pointed out that it can be challenging to promote green practices when ownership is fragmented.

The importance of managing information and prioritising buildings for retrofitting was raised by **Colin Hong**. In particular using Energy Use Intensity (EUI) as a key performance indicator to compare energy performance, benchmark achievements, set targets, and monitor progress in different buildings. Factors such as Gross Floor Area (GFA) measurement practice and climate differences should be allowed for. He reiterated earlier comments about the need for policy, incentives and funding to align support for retrofitting.

Margaret Kam questioned the cost of retrofitting and proposed the idea of carbon credits as an incentive for buildings that achieve carbon savings. These credits could be tradable, providing additional motivation for retrofitting projects.

Throughout the discussion, the panelists acknowledged the existence of policy gaps and the need for collaboration among stakeholders to address them. They also highlighted the importance of data in making informed decisions, prioritising investments, and optimising energy use. Mainstreaming sustainable practices was identified as a significant challenge that requires collective effort.

In their final remarks, the panelists stressed the need for collaboration, accessibility to data, and the potential for green financing and incentives to accelerate retrofitting progress. They also recognised the opportunities presented by existing buildings and emphasised the role of education, government intervention, and learning from global trends and best practices in driving sustainable retrofitting efforts.

Part 2.3 - Value

Hannah Jeong discussed the factors involved in valuing green buildings compared to brown buildings. She mentioned that the green premium versus brown discount varies by location, with a 2-3% premium in core CBD like Central and a 5% premium in decentralised districts like Kowloon East and Quarry Bay. She explained the difference is partly due to the declining proportion of rent in higher rent locations and is also just one of several factors considered. Green capital expenditure (capex) is now being reflected in property values with auditors now accepting green certification in property valuations and also gave an example of US banks decreasing loan-to-value (LTV) ratios in flood-prone areas. Her later comments emphasised the need for government regulation or market incentives to drive sustainable changes.

Steve Lewis discussed the importance of participatory design and stakeholder engagement in driving sustainable change. This extends to the role of government in developing local assessment tools, funding infrastructure programs, and implementing green bond frameworks. Government can also lead integration of sustainability and set clear roadmaps, which would provide incentives and mandatory actions for sustainable practices. He also emphasised the need for public-private collaboration to drive sustainability initiatives.

Grace Kwok expressed the need for residential energy data to be made available to help develop decarbonisation pathways. She emphasised the importance of accelerating progress in the built environment sector and mentioned the role of ESG (Environmental, Social, and Governance) initiatives in driving sustainability. For example, every infrastructure proposal should be required to consider and evaluate operational costs, including carbon taxes, to incentivise sustainable practices. She concluded with the need for interdisciplinary collaboration and the involvement of various stakeholders, including climate scientists, to address climate and diversity, equity, and inclusion (DEI) challenges.

Overall, the panel discussed the valuation of green buildings, the importance of stakeholder engagement, the integration of social aspects in green certification, and the role of incentives and collaboration in driving sustainability efforts. They also highlighted the need for data sharing, retrofitting, and setting clear roadmaps for the future. It is clear that the private sector can drive change by adopting new innovations, piloting and scaling up applications, and demonstrating their feasibility and readiness to policymakers. It was mentioned that policymakers can then adjust or modify minimum requirements based on these demonstrations.

As policy evolves the incentives for deep retrofitting can be expected to emerge although the future challenge of action in lower value housing estates is likely to remain for some time. A gradual implementation of a carbon tax linked to hitting specific milestones or thresholds is a possibility that was raised to introduce a higher cost for ‘doing nothing’.

Thank you

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