

Press Release

Hang Lung Properties Collaborates with Zhejiang University and CLEANCO2 to Reduce Embodied Carbon at Westlake 66, Hangzhou

Advancing and Accelerating Progress to Tackle Building & Construction Sector's Major Challenge through Innovation

(Shanghai, May 10, 2023) Hang Lung Properties (SEHK stock code: 00101) (“Hang Lung” or “the Company”) understands that radical changes are needed to reduce the embodied carbon that goes into building materials – a major challenge for the global building and construction sector. The Company is delighted to announce a two-year strategic collaboration (“Collaboration”) with a carbon capture, utilization and storage (CCUS) company CLEANCO2, to apply innovations including low carbon recycled concrete aggregate (RCA) and CLEANCO2 carbon storage concrete bricks (“low carbon concrete bricks”) to reduce the embodied carbon in Hang Lung’s Westlake 66 development in Hangzhou and other projects. Westlake 66 is also the first commercial development project to use low carbon concrete bricks in mainland China and Hong Kong.

The embodied carbon associated with buildings, which covers the carbon emissions created by the extraction, transportation, construction, maintenance, replacement, demolition, and disposal of building materials, contributes 11% of global carbon emissions and [approximately 75% of a building’s total emissions over a typical 60-year lifetime](#). Its impact is fixed at the time of construction and cannot be reduced once the building is constructed.

Embodied carbon constitutes a major source of Scope 3 emissions – i.e., indirect emissions that occur along a company’s value chain – for real estate companies. In 2022, Hang Lung’s scope 3 emissions were about 72% of its overall emissions, with embodied carbon emissions from building materials its largest source of emissions. Hang Lung is squarely confronting embodied carbon reduction and the importance of having strategic collaboration partners to work together.

Mr. Adriel Chan, Hang Lung Properties Vice Chair, and Chair of its Sustainability Steering Committee, said: “Decarbonizing real estate, particularly from embodied carbon, is a marathon, not a sprint. We believe the partnership with CLEANCO2 and Zhejiang University will enable exciting innovations to move forward on this journey. At the same time, we will continue to work closely with our suppliers to reduce emissions through innovative and pragmatic solutions. We encourage other real estate companies to join in accelerating and scaling such innovations.”



“Concrete is the most used building material in the world, and we cannot ignore the impact of its carbon emissions. The strategic cooperation between Hang Lung Properties and CLEANCO2 is not only a solid step towards CLEANCO2’s ‘100 million tons vision’ – which is using CCUS technology to fix and sequester 100 million tons of CO₂, but also a forward-looking exploration and attempt by both sides to reduce the embodied carbon for future buildings.” said Mr. Zhao Chao, CEO of CLEANCO2.

The collaboration will leverage CLEANCO2’s proprietary carbon dioxide mineralization technology to advance CCUS applications through two initiatives at Westlake 66, Hangzhou:

1) Low Carbon RCA

First, we are reusing waste concrete from our Westlake 66 development project in Hangzhou. The waste concrete will be crushed into aggregate and produced into low carbon RCA through a carbon dioxide mineralization process. A life cycle assessment has found that the low carbon RCA has significant potential to reduce emissions compared to normal aggregate when used as raw material for concrete. The Company and CLEANCO2 have completed a small scale pilot project with the low carbon RCA and are now evaluating this process at a medium scale, with 150 tons of waste concrete.

2) Low Carbon Concrete Bricks

Second, we will use CLEANCO2 low carbon concrete bricks on the secondary partition walls of the basement of our Westlake 66 project (the total number of bricks used can cover a wall area of around 17,000m²) – the first commercial development project in mainland China and Hong Kong to do so. These bricks will use cement, fly ash and other solid waste together with CLEANCO2’s carbon dioxide mineralization process. The embodied carbon emissions of the low carbon concrete bricks are expected to be 87.5% lower than conventional shale bricks.

The technology developed by CLEANCO2 originated from the State Key Laboratory of Clean Energy Utilization (CEU) of Zhejiang University. In 2020, as a supported R&D project under the 13th Five-Year Plan, the “Key Technologies of CO₂ Deep Mineralization Curing Building Materials and 10,000-ton Industrial Demonstration” was completed by Zhejiang University. Since 2020, CLEANCO2 has officially cooperated with CEU. They have jointly undertaken several national and local research and development projects related to CCUS technology and jointly built the “Zhejiang University - CLEANCO2 United Laboratory of CO₂ Mineralization Utilization Technology”, the first CO₂ mineralization utilization experimental base in China with potential to achieve large-scale industrial production globally.

Westlake 66, Hangzhou is Hang Lung’s 11th large-scale development on the Mainland, comprising of a world-class shopping mall, five Grade A office towers, and the prestigious hotel Mandarin Oriental Hangzhou. It is scheduled for completion in phases from 2024 onwards.



Photo caption:



Hang Lung Properties and CLEANCO2 ink a two-year strategic collaboration to apply innovations to reduce embodied carbon at Westlake 66, Hangzhou and other Hang Lung projects. (From left) Representatives from Hang Lung Properties include: Mr. Louis Tong, Deputy Director – Project Management, Mr. Adrian Lo, Director – Project Management, Mr. John Haffner, Deputy Director – Sustainability; and Representatives from CLEANCO2 include: Mr. Zhao Chao, CEO, Professor. Wang Tao, Zhejiang University, Mr. Jack Liu, COO



About Hang Lung Properties

Hang Lung Properties Limited (SEHK Stock Code: 00101) creates compelling spaces that enrich lives. Headquartered in Hong Kong, Hang Lung Properties develops and manages a diversified portfolio of world-class properties in Hong Kong and the nine Mainland cities of Shanghai, Shenyang, Jinan, Wuxi, Tianjin, Dalian, Kunming, Wuhan and Hangzhou. With its luxury positioning under the “66” brand, the company’s Mainland portfolio has established its leading position as the “Pulse of the City”. Hang Lung Properties is recognized for leading the way in enhanced sustainability initiatives in real estate as it pursues sustainable growth by connecting customers and communities.

At Hang Lung Properties – **We Do It Well.**

For more information, please visit www.hanglung.com.

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