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Hip Hing Launches Hong Kong's First Mobile BIM CAVE System in Conjunction with CIMC MBS, CLPe and Motive Force

Transforming Construction Project Management

Hip Hing Construction Co., Ltd., a leading contractor in Hong Kong, today announced the launch of its innovative mobile BIM CAVE system. The pioneering innovation combines Hip Hing's desire to leverage the benefits of the BIM CAVE system with the expertise of our partners CIMC MBS, CLPe and Motive Force. The bespoke design and construction of the mobile BIM CAVE system, which is housed within a tailor-made MiC module can be transported to any construction sites via a truck. This enables Hip Hing to make the BIM CAVE system more accessible to any construction sites. Engineering teams can then use BIM technology to inspect complex processes and data in a virtual environment, improving the precision of planning and design, while enhancing site safety and environmental performance.

Supported by our longstanding partner CIMC MBS, Hip Hing adopted MiC technology to house the first mobile BIM CAVE system. CIMC MBS overcame the challenges presented by the requirement for mobility. The structural design of the custom MiC module was optimised to ensure it was robust enough to withstand road transportation and lifting operations, that it was compliant with road traffic regulations, yet the spatial design still satisfied the functional requirements to effectively showcase the BIM CAVE system.

The Hip Hing mobile BIM CAVE system uses Motive Force's mobile XR technology. This is a comprehensive building information modelling system which simulates the construction project in a virtual environment. It helps resolve technical conflicts and deliver solutions prior to design approval, fabrication and construction, which is paramount with projects increasingly making use of MiC and Multi-trade integrated MEP (MiMEP).

Through collaboration with CLPe, a stable and reliable power source was integrated into Hip Hing's first mobile BIM CAVE system to support its operations anytime anywhere. CLPe has specially designed a compact and mobile Battery Energy Storage System (BESS) for the BIM CAVE. Its size and weight are about 20% of a standard BESS,

making it more lightweight and flexible. It also helps reduce carbon emissions by replacing the use of conventional diesel generators. Further planned developments include the installation of solar panels on the roof to reduce heat absorption and facilitate BESS recharging, thus further promoting sustainable development through the adoption of renewable energy.

Hip Hing Construction Executive Director Mr Tony Za said, “We are pleased to partner with CIMC MBS, CLPe and Motive Force in developing this innovative asset. With the collective expertise and collaboration, the mobile Hip Hing BIM CAVE system becomes a pioneering movable BIM asset, which can bring digital models to life and make training, safety, planning and operations more connected and collaborative.”

He added, “Our clients, consultants and other stakeholders can now experience the mobile Hip Hing BIM CAVE system at any time and at any location. Making the BIM CAVE system more accessible to all enhances construction project efficiency, safety, and coordination. It was used to good effect at the design and construction of Expansion of the Legislative Council Complex expansion project and other social housing projects.”

CLPe Managing Director Mr Ringo Ng said, “CLPe is committed to providing energy solutions that meet the business needs of enterprises. As a low-carbon energy solution, BESS can support the power demand of large-scale construction site equipment and the charging of electric vehicles, effectively reducing carbon emissions, air pollution, and noise issues on construction sites. We are pleased to collaborate with Hip Hing and custom design a BESS to meet the mobile power supply needs of the BIM CAVE system. This also demonstrates the versatility of BESS, setting an example for the industry.”

He added, “The support from all sectors is instrumental in reducing carbon emissions and achieving carbon neutrality. CLPe will continue to promote the adoption of BESS, especially in the construction industry, to replace the use of diesel generators, and drive Hong Kong further towards sustainable development.”

Motive Force Technology Limited CEO & CTO Mr Terence Tseng said, “Motive Force is the first technology company in Hong Kong to offer mobile XR technology applications in the architecture industry. Driving architectural collaboration forward with VR technology, Motive Force utilises immersive XR to showcase projects on-site, expediting team communication and mitigating project discrepancies. Additionally, integrating VR with mixed reality enhances training efficiency, enabling technicians to navigate realistic scenarios, practice maintenance procedures, and familiarise

themselves with tools in a cost effective, secure setting, thus maximising training effectiveness.”

CIMC MBS Managing Director Mr Victor Zhu said, “CIMC MBS has been working in the Hong Kong market for many years and has been cooperating with the government's needs for the intelligent development of the construction industry, and is committed to promoting standardisation, integration and a technology oriented industry. Hip Hing mobile BIM CAVE is a forward-looking, mobile building information simulation system, and we are honoured to participate in its development. Recently the government has planned affordable housing and light public housing, and the huge amounts of buildings demand higher requirements for construction technology, if the system could be widely applied to these projects, the programmes could be completed sooner and with better quality.”

About CLPe

CLPe is a wholly-owned subsidiary of CLP Holdings Limited. The company provides a one-stop shop for customers, integrating products and services into value-added solution packages to support low-carbon and sustainable business development. As a trusted partner for energy and infrastructure solutions in Hong Kong and Mainland China, CLPe delivers urban and industrial energy infrastructure in power, heating, cooling, etransportation, and data centres to cities, comprehensive building energy management in cooling, solar energy, energy storage, EV charging, electrical and mechanical services, and smart solutions to commercial and industrial customers, and a platform of sustainable home products and services to mass market customers. For details, please visit www.clpesolutions.com.

About Hip Hing Construction Group

Hip Hing Construction Group provides professional design, procurement, engineering and construction services to a wide range of public and private sector projects. Hip Hing Construction and Vibro (HK) are members of Hip Hing Construction Group.

Hip Hing Construction was founded in 1961, is one of the leading contractors in Hong Kong and has constructed many of the landmark buildings which define in Hong Kong. The Company has always strived to shape a better city and living environment for the people of Hong Kong.

Vibro is principally engaged in the design and construction of foundations and civil engineering works, and site investigation in the public and private sectors.

Hip Hing Construction and Vibro (HK) are both subsidiaries of NWS Holdings Limited.

About CIMC-MBS

CIMC Modular Building System (CIMC MBS), a business unit of CIMC Group, has grown into one of the largest provider of modular buildings in the world, by demonstrating that innovative design and patented building technology could truly alleviate traditional build constraints via shorter build time.

Since 2004, CIMC MBS has been committed to providing global customers with one-stop solutions for high-quality integrated steel structure modular buildings, including technical consultancy, manufacture, construction, installation, global logistics and finance. Its corporate standards and product quality meet the standards and requirements of developed countries and regions, including the United States, United Kingdom, Norway, Iceland, Singapore, Japan, Australia, New Zealand, Sweden, and Hong Kong. It has successfully delivered over 200 global projects and evolved into the world's largest modular building technology service provider and manufacturer.

About Motive Force Technology Ltd.

Motive Force Technology Limited was founded in 2016. As an acceleration programme member of Hong Kong Science and Technology Parks, it has been dedicated to R&D and the commercialization of immersive virtual reality systems and applications in sustainable smart city applications.

Since its establishment, it has launched its own brand - the 1:1 “next to reality” immersive extended reality system VirCube XR SPACE and VirCube FLEXI. VirCube leverages the power of virtual space and mixed reality interaction to present a glimpse into the future of smart cities. By incorporating VR and MR technologies into the Architecture, Engineering, and Construction (AEC) industry, VirCube facilitates compatibility with Building Information Modeling (BIM) and real-time sharing, propelling the operational management of intelligent urban environments in alignment with future societal progress.

Photo Captions:

Photo 1 and Photo 2



Hip Hing Construction partnered with CIMC, CLPe and Motive Force to launch Hong Kong's first mobile BIM CAVE system

Photo 3 and Photo 4



Hip Hing BIM CAVE can visualise the data including construction sequence and method stimulations by deploying Virtual Reality (VR) and Augmented Reality (AR).

Photo 5



CLPe designs a compact and lightweight Battery Energy Storage System (BESS) especially for mobile and small-scale power applications, which is about 20% of the size and weight of a standard BESS. This helps reduce carbon emissions by replacing the use of conventional diesel generators.

Photo 6 and Photo 7



Hip Hing BIM CAVE is a pioneering movable building information modelling system which can bring digital models to life and make training, safety, planning and operations more connected and collaborative anywhere and at any time.

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