[For Immediate Release]

俊和建築控股有限公司
CHUN WO CONSTRUCTION HOLDINGS COMPANY LIMITED
(Subsidiary of Chun Wo Development Holdings Limited)

CHUN WO ANNOUNCES RESEARCH AND DEVELOPMENT RESULTS OF "MODULAR INTEGRATED CONSTRUCTION SYSTEMS"

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Chun Wo Becomes First Construction Company to Use Concrete MiC in Construction of Buildings Up to 40 Storeys High Patented Wall Connection Technology Reduces Wall Thickness and Increases Saleable Area of Buildings

(Hong Kong, 23 November 2020) — **Chun Wo Construction Holdings Company Limited** ("**Chun Wo**") has been actively developing innovative technologies targeting the construction industry so as to enhance construction efficiency and promote the transformation of the industry. To complement the major trend towards innovative development by the construction industry, **Chun Wo** and **The P&T Group** ("P&T") have developed an advanced "wall connection technology" that is applicable to Concrete "Modular Integrated Construction" Systems ("Concrete MiC"). This technology and the entire Concrete MiC solution have received "In-principle Acceptance" from the Buildings Department, meaning that they can be applied to building development projects in Hong Kong. The "wall connection technology" of Concrete MiC has also obtained the pertinent patent, making Chun Wo the **first Hong Kong construction company** to use this method in the design and construction of buildings up to 40 storeys high, hence substantially helping enhance construction efficiency.

MiC technology is a state-of-the-art construction method that transfers on-site construction procedures to the factory. Through the concept of "factory assembly followed by on-site installation", free-standing integrated modules (including finishes, fixtures, components and fittings) are pre-fabricated in a factory before on-site installation. In this way, a building is largely completed before its components arrive at the site. Since on-site construction procedures are minimized, limitations resulting from weather, labor resources and location can be avoided. MiC therefore helps increase construction productivity, safety and sustainability and makes the construction process easier to control.

Compared with the "MiC" modules that are largely "steel structures" in Hong Kong, the "Concrete MiC" developed by **Chun Wo and P&T** is more cost-effective. Firstly, the patented "wall connection technology" can reduce the thickness of the wall and enlarge the saleable area of a unit. Concrete modules are durable and easy to meet the fire resistance prescribed. In terms of maintenance, concrete modules do not have to undergo initial inspection for repair and maintenance as quickly as their steel counterpart once a building is completed, and they do not require frequent repairs. Furthermore, concrete modules can be designed in a conventional and flexible manner to suit building layout plans, helping clear the misconception of MiC as being "rigid". Concrete-built flats excel in insulating against sound and heat, hence, **Chun Wo** believes concrete modules meet general market expectations and demand from the private sector.

Though possessing many merits, Concrete MiC modules are not easy to design and construct as they are complex and require meticulous attention to detail. Possessing extensive construction experience and a team of experienced BIM professionals, **Chun Wo** is capable of providing one-stop solutions covering design to on-site construction, and can successfully apply "Concrete MiC" to different projects. Since **P&T** has strong engineering design capability as well as mature MiC technologies, it is able to offer strong support to the R&D of "Concrete MiC".

Sr Stephen Lee, Chief Executive Officer of Chun Wo Construction Holdings Company Limited, said, "The Company has over the years been committed to developing innovative construction technologies. We are truly encouraged by the successful introduction of 'Concrete MiC' and to become the first construction company in Hong Kong to construct buildings of up to 40 storeys high with this technology. With **Chun Wo**'s construction experience stretching more than 50 years, the Company's professional and mature team, and P&T's professional design solutions, we can capitalize on these advantages to promote the use of this technology in more construction projects. Going forward, we will continue to develop more innovative construction technologies that contribute to the future of Hong Kong's construction industry and which leads to the building of a more pleasant and advanced city."

Chun Wo's pioneering technology brand "Inno@ChunWo" has set up an innovative technology exhibition center "Chun Wo InnoBase" (俊和創展基地**)** in Yuen Long, which is expected to open at the beginning of next year. The center will display show flats that adopt the two MiC methods, namely "concrete" and "steel structure". More innovative construction technologies will be presented to the industry and public via the center in the future.

- End -

BIM model of a "5-face module 2-bedroom unit" built with concrete MiC developed by **Chun Wo** and **P&T**

Chun Wo Construction Holdings Company Limited

Chun Wo Construction Holdings Company Limited ("**Chun Wo**") was founded in 1968 and is a key subsidiary of Asia Allied Infrastructure Holdings Limited (stock code: 00711.HK). The Company is principally engaged in the construction and property development businesses, and possesses the professional capabilities to undertake large-scale integrated construction projects. Recent examples of large-scale infrastructure projects that it has undertaken in Hong Kong include the Central-Wan Chai Bypass, Liantang/Heung Yuen Wai Boundary Infrastructure, Hong Kong-Zhuhai-Macao Bridge Passenger Clearance Building, Guangzhou-Shenzhen-Hong Kong Express Rail Link (Hong Kong Section) and MTR Shatin to Central Link. With deep roots in Hong Kong and an operation history stretching over 50 years, **Chun Wo** has accumulated extensive experience and a strong position in the construction sector, enabling it to expand its business to countries along the "Belt & Road" route in Southeast Asia. Examples of such expansion include the acquisition of a construction and engineering consultancy in Singapore, and the undertaking of waterway bridge design and construction projects in the Philippines in recent years.

The P&T Group

The P&T Group (Palmer & Turner), formerly known as Palmer and Turner Hong Kong, is a multi-disciplinary international practice with over 1,600 staff, working from offices in Hong Kong, Singapore, Bangkok, Shanghai, Wuhan, Shenzhen, Macau, Hanoi, Ho Chi Minh City, Jakarta, Kuala Lumpur, Dubai and Abu Dhabi. The P&T Group offers a full range of architectural, structural and mechanical engineering, planning and project management services, with full support from in-house interior and graphic design divisions. P&T Group celebrated its 150th anniversary in 2019. P&T continues to thrive on innovation and has gained industry-leading expertise in areas such as Building Information Modelling (BIM), Modular Integrated Construction (MiC) design, precast building design, and other Design for Manufacture and Assembly (DfMA) solutions and their practical application.

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Comparison of Modular Integrated Construction (MiC)

	Modular Integrated Construction (MiC)			Traditional construction methods
	Chun Wo's Concrete MiC	Concrete MiC	"Steel structures" MiC	
Method of construction	Factory assembly followed by on-site installation			On-site construction
Major materials	Concrete		Steel	Concrete
Number of modules	5-face module*	6-face module^	6-face module^	/
Maximum number of storeys	40 storeys	Not more than 20 storeys^	40 storeys ^	Over 100 storeys
Minimum thickness of structural wall	250 mm **Chun Wo wall connection technology**# reduces wall thickness and relatively enlarges the saleable area of a unit	270-295 mm^	Depend on the design at the time of building plan submission	Depend on the design at the time of building plan submission
Effectiveness in insulating against sound and heat	Buildings made from concrete have excellent sound insulation and thermal performance. Concrete modules are able to better meet the general expectations and requirements of the private building market		Sound and heat insulation are inferior compared with concrete buildings – relatively suitable for transitional homes	Concrete buildings have excellent sound and thermal insulation properties
Construction lead time	A single prefabricated unit can be lifted and assembled in approximately one hour, saving 30% of total project construction time on average			Completion of one floor per seven days

* Chun Wo's Concrete MiC has recently received formal approval from the Buildings Department, which granted it "In-principle Acceptance" for its "connection method" and "module" and allowed Concrete MiC to be applied to building developments in Hong Kong. (At the time of entry approval, this "connection method" and "module" have been pre-approved, so no further approval is needed.)

#Chun Wo's wall connection technology has been granted a patent in Hong Kong, and the registration of an international patent under PCT (Patent Cooperation Treaty) is pending

^ With reference to existing projects in the market using MiC; future projects will depend on the design at the time of planning

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*Existing construction projects adopting MiC	Concrete / steel structure	Maximum number of storeys
Disciplined Services Quarters for the Fire Services Department at Pak Shing Kok	Concrete	17
Elderly Home at Jat Min Chuen in Sha Tin	Steel structure	10
InnoCell at Hong Kong Science Park	Steel structure	17
Residential Care Homes for the Elderly ("RCHE") in Kwu Tung North	Concrete	8
Student Residence at Wong Chuk Hang Site for The University of Hong Kong	Steel structure	17
Transitional Homes at Nam Cheong Street in Sham Shui Po	Steel structure	4
Transitional Homes at Yen Chow Street in Sham Shui Po	Steel structure	4
Transitional Homes at Yip Shing Street in Kwai Chung	Steel structure	4
Tung Chung Area 99 Public Housing Development Project	Concrete	12

* Subject to announcements from the Construction Industry Council via its website: http://www.cic.hk/chi/main/mic/whatsmic/hk_examples/