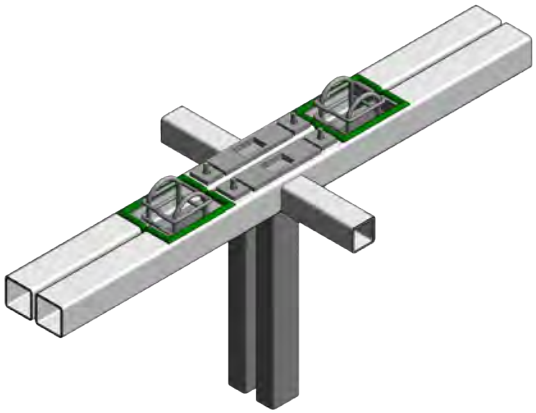


The KNUCKLE

An Entirely Different Modular Building System

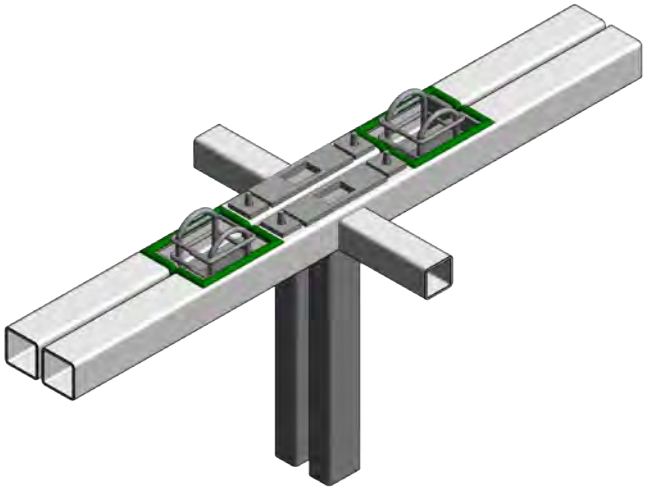
The KNUCKLE

Imagine if modules could be connected with no mechanical fixings, no plates and no bolts...

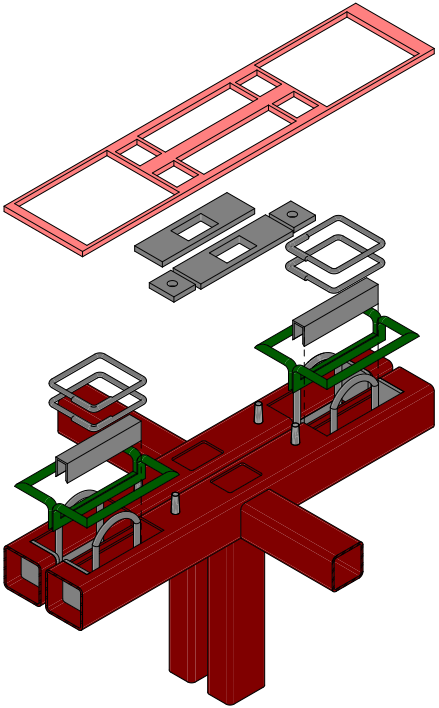
This is what The Knuckle achieves - an easy and economical solution to the setbacks of complicated connection details that typically tie modules together on site.

It's a rapid process. Once the modules are lifted into place they can be adjusted, lined and levelled the same as any other modular system. Concrete or high-strength grout is then inserted within its tubular structure to form The Knuckle and connect the modules.

By connecting the modules together with no mechanical fixings, sections of cladding will not require leaving off in order to fix plates between modules.



"It's about joining, flexibility & strength"



The KNUCKLE

This means that we can reduce the extent of temporary works such as scaffolding and mast climbers.

Additionally, the cladding can potentially be self-sealing so that no external temporary works are required.

It also means that there are no parts of the interior fit-out that need leaving off because all the connections are made with concrete and reinforcement within The Knuckle's tubular structure.

As such, it is a unique solution with numerous benefits which is why we believe that The Knuckle is the future of modular design.

"A unique solution with numerous benefits"

Benefits of Modular Construction

Offsite, recyclable and sustainable

Early cost certainty

Full scale, working mock-ups for review

Factory-stored materials reduces risk of damage/loss

MEP

Early integration of room M&E

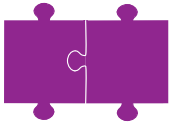
Shorter construction programme

Early occupation and return on capital investment

Low risk to client and contractor

Health & safety issues more easily addressed

Light-weight construction



Ability to template designs

Local labour can be utilised

Benefits Particular to The Knuckle

Rapidly constructed and naturally robust structure

20⁺ storey building height if stability cores provided

Seven-storey building height if self-stable – no stability cores

Repetitive cage types and structure make numerous different buildings

Minimised wall & floor thickness to match traditional footprint & height

Minimised site works for connections in fitted-out rooms

Minimised temporary works, scaffolding and wall climbers

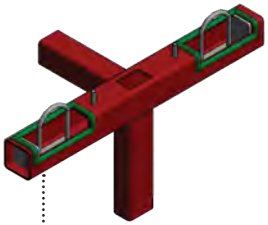
Increased structural efficiency & reduced fire protection requirements

Simple accommodation of manufacturing and site tolerances

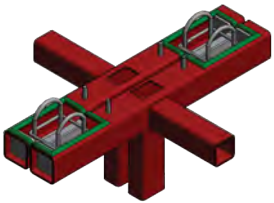
Open-plan spaces are possible, as internal columns can be removed/omitted

Operation Summary: Internal Module-to-Module

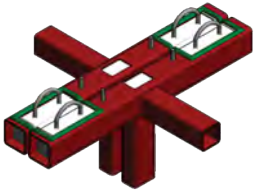
Placement of 1st module



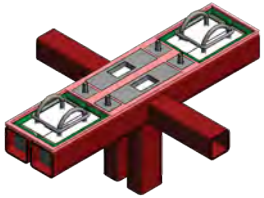
Placement of 2nd module



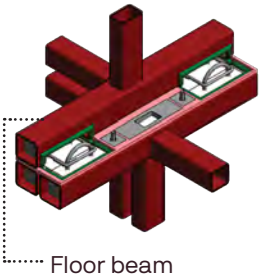
1st pouring of concrete



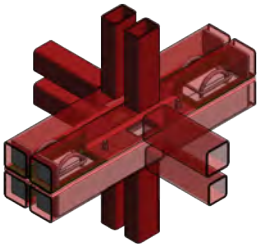
Shim plates in place



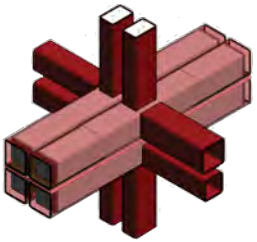
Placement of 3rd module



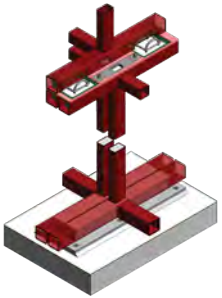
Placement of 4th module



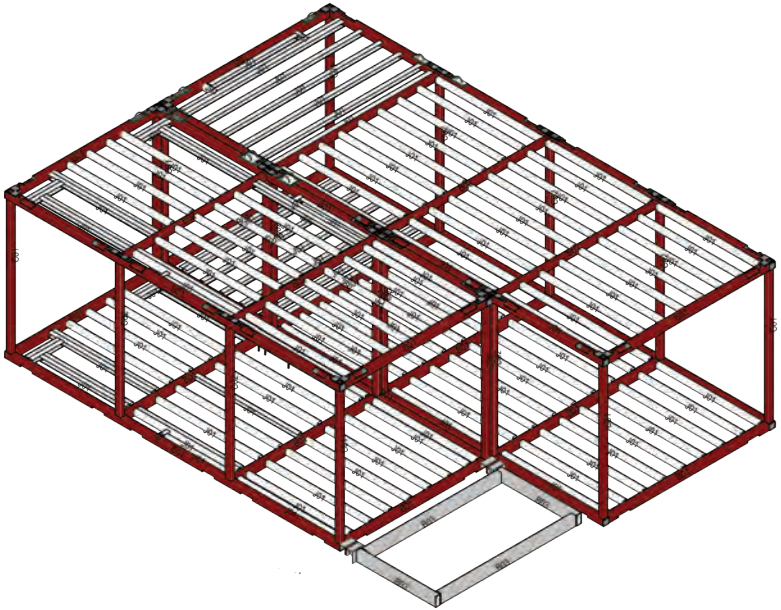
2nd pouring of concrete



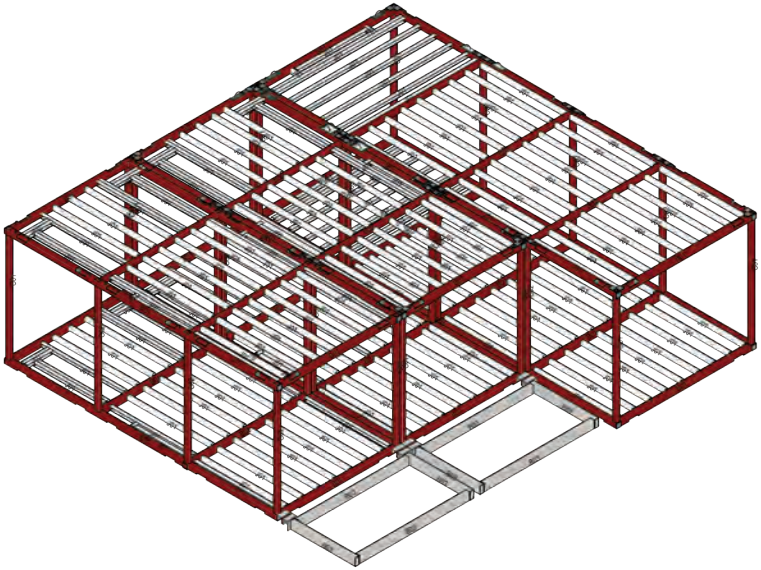
The Knuckle connection

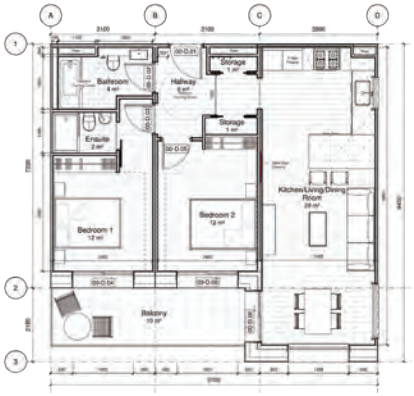


One Bedroom Apartment

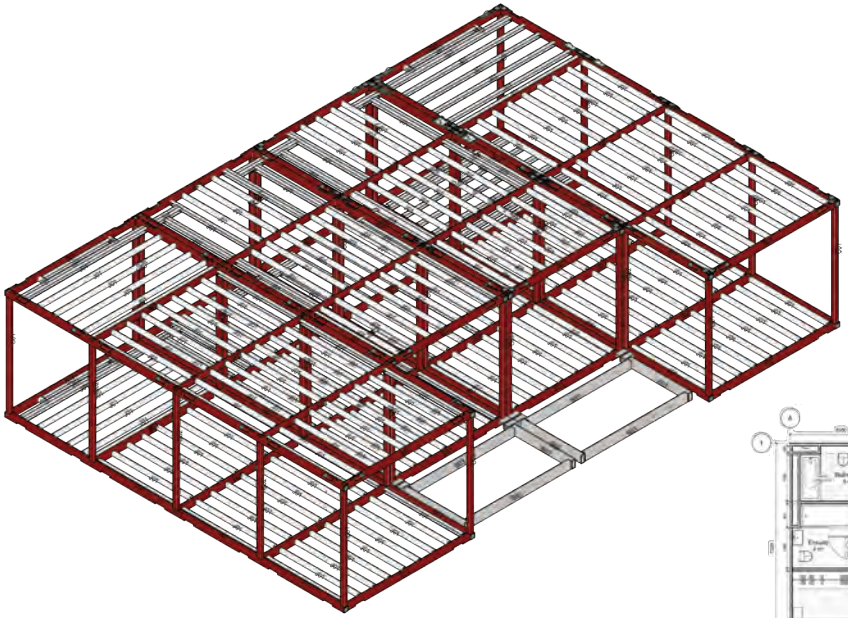


Two Bedroom Apartment



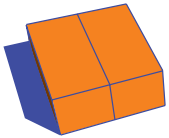


Three Bedroom Apartment

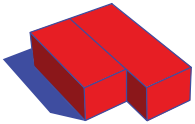


Some Potential Building Configurations

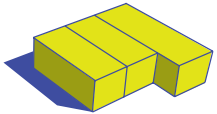
1 Bedroom Type / 1 Person



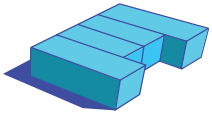
1 Bedroom Type / 2 Persons

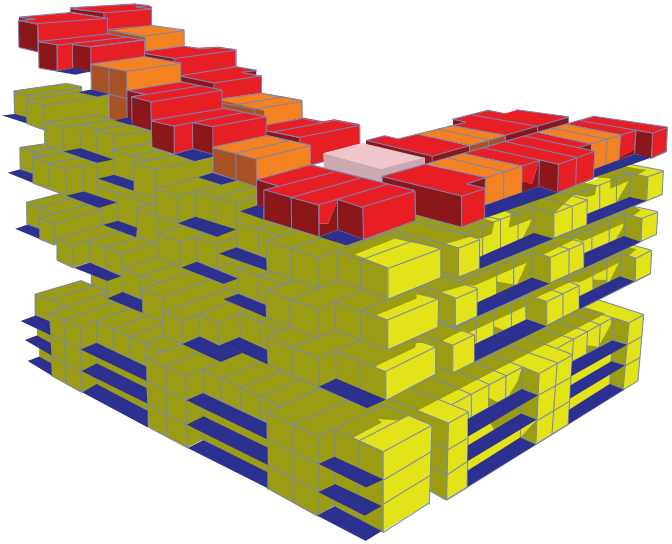


2 Bedroom Type / 4 Persons

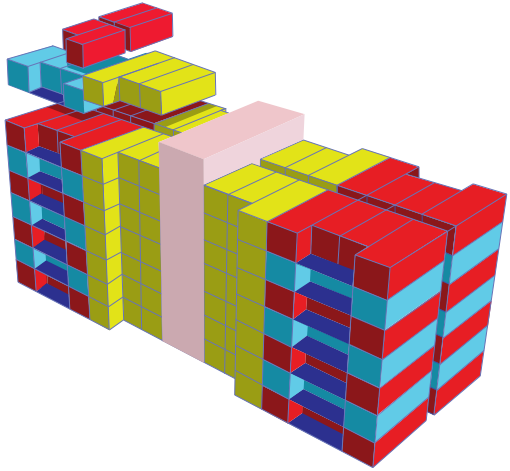


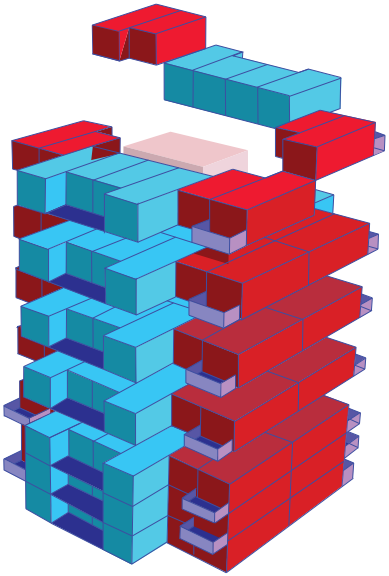
3 Bedroom Type / 6 Persons





Some Potential Building Configurations





Awards

2020 WINNER

2020 FINALIST

2020 FINALIST

2020 FINALIST

2019 WINNER

2019 FIRST

2019 WINNER

2018 COMMENDED

2018 FINALIST

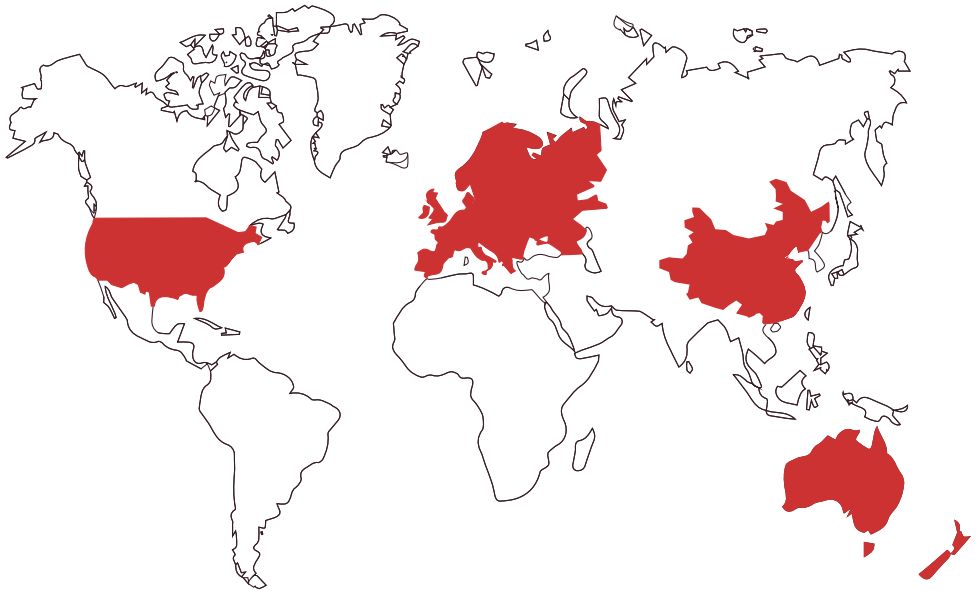
2018 FINALIST

2018 FINALIST

2018 WINNER

Patents & Accreditations

USA UK EUROPE CHINA HONG KONG AUSTRALIA NEW ZEALAND



BOPAS CHECKMATE BLP INSURANCE PREMIER GUARANTEE

Our Experience

Peter Chapman is the inventor of The Knuckle.

His involvement in MMC design and development began when he joined Peter Dann and took a keen interest in the progression of this form of construction. As part of the design team, he has been instrumental in the promotion of MMC techniques on many award-winning modular buildings in the UK and overseas.

Peter Dann have over 60 years' experience in structural and civil engineering, including 30+ years' expertise in modular construction. They have been instrumental in the design of many prototype building systems with sustainability as a major factor in their development.

Innovation has always been a major part of the Peter Dann philosophy and an integral part of business development. That is why they supported the invention and patenting of The Knuckle and other ground-breaking structures.

The Knuckle is the future of modular design

Kn

TheKNUCKLE

We want to hear from you...

9 Charlotte Street, London W1T 1RG

Peter Chapman | p.chapman@peterdann.com | P: 0207 637 7870 | M: 07768 666 671