



## Affordable, Sustainable Standard Design Mid/Hi-Rise Buildings

using

# Standard Design, Off-Site, Pre-fabricated Structural Steel Modules

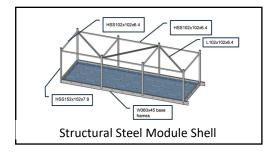
A development model for building...

more housing
in less time
at a lower cost
with better & more consistent quality



### **MAKING HOUSING MORE AFFORDABLE & MORE QUICKLY**

- Using Standard Steel Modules & Standard Building (1—21 Storeys)
- Overlappping On-Site Construction & Off-site Modular Fabrication















#### **MERCIDIAN STANDARD BUILDING - DESIGN FEATURES**

- 3 years of research & development to reach an <u>integrated design</u> for both <u>standard module and standard building design</u>
- HSS structural steel fabrication designed for <u>low-rise</u>, <u>mid-rise</u>, <u>or high-rise</u> construction
- A standard design which enables construction of buildings from 1 to 21 storeys, all with the same floorplate & footprint
- Code Compliant across Canada, including up to Zone 5 Seismic regions (which is the highest zone in Canada Victoria, BC)
- **Highly configurable building siting** (the modular residential tower can be placed: on slab on grade with surface parking, or on a commercial/retail podium with surface parking, and with or without underground parking)
- Highly configurable floor plate, for <u>virtually any mix of 6 standard suite configurations</u> using the same standard core design (Studio, One Bedroom, Bedroom & Den, Two Bedroom, Two Bedroom & Den or Three Bedroom)
- Highly fabrication simplified (only 3 standard steel module types are required to fabricate any of the standard suites)
- Conventional construction components include: elevator/stairwell/services core, retail commercial podium (if applicable) and Underground Parkade (if applicable)
- 16 modules per floor (112 modules in an 7 storey residential tower)
- 8 to 12 suites per floor (depending on the mix of suite types)
- Highly configurable for different municipality demographics and uses (affordable housing, market housing, student housing, seniors living, hotels/motels or any hybrid combination)
- Highly Fire Resistant (incorporation of mostly non-flammable materials, inside and out except cabinetry)
- Super insulated air tight suites (utilizing fire retardant spray in foam)
- Highly energy efficient Mitsubishi HYBRID CITY MULTI "smart" HVRF Heating & Cooling System (which can provide heating & cooling to
  different suites at the same time, as required, on demand, using air source heat pump(s) and backup boiler(s) in colder regions)
- High efficiency Mitsubishi Heat Recovery Air Exchange System (75% efficient)
- Advanced sound, smoke and fire barrier (all modules have a 16 inch deep "basement" which contains all plumbing, HFAC, Mechanical and electrical equipment, with a concrete "basement" floor
- **Highly self contained** (each module is highly leak proof with a tapered concrete "basement" floor to drain any water leaks toward plumbing risers in the central core)
- Each off-site fabricated module includes balcony & common area hallway attaching to central core (to minimize placement and connection time to complete)
- DP sign-off and BP compliance verifications across Canada by Kumlin Sullivan Architecture Studio
- Efficient off-site fabrication (18 to 20 days for the first module and 1 to 2 per day thereafter per line)
- Fast on-site erection time (1 to 2 storeys per week using Mercidian's proprietary "Quick Connect" structural & utilities connections)
- Short & long term construction benefits (attention to both cost to purchase <u>and</u> cost of ownership)
- Sustainable materials and energy efficient systems for low overall cost of ownership (low cost of construction, maintenance, & operation)
- Conventional & CMHC financing available for purchasers by National Bank, Alberta Treasury Branch & BMO Bank of Montreal.

392 sq. ft. Studio Suite (including motorized "wall bed/bookshelf unit") starting at \$149,900. to purchase (in some municipalities) or under \$795./mo. mortgage payment (rent-to-own option may also be available).

One Suite in every building <u>built by Mercidian</u> will be donated to a person or persons in most need (as selected by the municipality or non-profit intake agency where the building is constructed)

Mercidian GROUP

#### STANDARD FLOOR-PLATE TEMPLATE



When setting an appropriate building design for any particular municipal demographics, the Standard Suite Configurations can be used to set a floor-plate that can be laid out with various mixtures of 6 Standard Suite styles (Studio, 1 Bedroom, 1 Bedroom + Den, 2 Bedroom, 2 Bedroom + Den, 3 Bedroom)

For example: 2 Studio Suites can be replaced by one 1 Bedroom Suite, a 1 Bedroom Suite can be replaced by 2 Studio Suites. A 2 Bedroom can be replaced with a 1 Bedroom + Den or vice versa. A 3 Bedroom Suite can be replaced by a 2 Bedroom + Den or vice versa.

#### GENERAL CONSTRUCTION PROCESS IN BUILDING A MODULAR RESIDENTIAL MULTI-STOREY DEVELOPMENT

ON-SITE SITE CONVENTIONAL CONSTRUCTION & OFF-SITE RESIDENTIAL MODULE FABRICATION OVERLAPS (for significant time saving)

#### ON-SITE CONVENTIONAL CONSTRUCTION IN PREPARATION FOR MODULAR RESIDENTIAL TOWER

