

THE FUTURE OF BUILDING INFRASTRUCTURE



StrongKor is the Future - Now



Canadian based StrongKor is the technology holder for a revolutionary building and integrated infrastructure system. A StrongKor system that changes all the rules for building and infrastructure. It is system that will re-structure infrastructure!

INTRODUCTION

StrongKor has revolutionary building systems uniquely robust, resilient and capable to create a wide range of environmentally and technologically advanced buildings, structures, roads, bridges, railways, docks, airports, agriculture, aquaculture, bio-culture, resource transmission, utilities and other systems.

Risk prevents us from moving into the future because we are enslaved to 'sunk costs' in our buildings and infrastructure. StrongKor systems change this by:

- Being completely flexible, replaceable, upgradeable and re-programmable
- Being durable and sustainable, and...
- Being totally future-proofed versus comparable site built or modular systems

The future is uncertain, so StrongKor systems are designed to take advantage of:

- Growing populations and expectations
- Limitations in financing and resources
- The environment and sustainability
- Interconnectivity and technology, and...
- New frontiers in building science, uses, energy harvesting and building locations

Integrated StrongKor systems will construct any building or infrastructure to:

- Be extremely resistant to fire, flood, severe weather and seismic events
- Any height and any size in a wide variety of finishes
- Reduce construction costs, and...
- Slash construction time to completion versus comparable site built systems



MULTIPLE USES *options*

1. Residential towers, hotels and convention centers
2. Shopping centers, stadiums and office buildings
3. Schools, universities and government buildings
4. Hospitals, clinics, seniors and extended care facilities
5. Warehouses, refrigerated storage and laboratories

FUTURE USES *options*

1. Roads, bridges, tunnels, docks, runways and railways
2. All utilities including sewer, water and gas
3. Pipelines, power and resource conveyance
4. Vertical agriculture, bioculture and aquaculture
5. Offshore structures and seismic foundation system

STRONG NOW

21st century StrongKor buildings are:

- Future proofed architectural assemblies
- Building systems integrate plug-n-play component systems
- Sustainable and environmentally responsible
- Reusable and fully recyclable
- Energy efficient with leading edge technologies that transform the way we live, work and play

Future proof



21st Century StrongKor buildings can also include:

- Architecturally pleasing **StructiKor** shutter systems that will automatically reinforce any building opening to secure interior spaces from insurgency, earthquake, fire, flood and even the most extreme weather
- Our **StructiKor** armored reinforced wall and roof systems that provide additional security and protection for sensitive interior spaces

Revolutionary StructiKor systems create unparalleled quality, fit and finish

- **StructiKor** is warmer in winter, cooler in summer, quieter, stronger and safer (for earthquakes, storms and armed conflicts)
- **StructiKor** robust systems are durable
- **StructiKor** buildings and infrastructure are easy to clean, operate and maintain
- **StructiKor** systems allow a wide variety of financing and profit making options

	ADVANTAGE
Reduced construction times	50 – 70%
Reduced construction financing costs	50 – 70%
Lowered building construction costs	5 – 20%
Superior fit, finish and quality	Immeasurable
Extreme climate conditioning	Up to r -100 (rsi -12)
Efficient mechanical systems	Reduced operating costs
Exceed strictest fire and life safety code	Reduced building insurance cost
Reduced architectural/engineering fees	Additional cost and time savings
Any height or architectural finish	Ultimate flexibility

STRONG FUTURE

21st Century ultra long-lasting StructiKor road, rail, bridge and runway systems are:

- Quickly and easily assembled and maintained on site for any volume of traffic
- Safe for high speed travel with advanced surface systems and unique engineering
- Removable, reusable and fully recyclable
- Able, with the appropriate features, to harvest waste energy normally damaging to vehicles and travel surfaces to produce electric power



21st Century ultra long-lasting StructiKor pipeline systems are:

- Quickly assembled on site, a continuous, seamless installation process, greater capacity and strength with less disruption
- Safe for all forms of material containment with advanced surfaces and unique engineering
- Safe with multi-redundant containment systems for additional environmental protection
- Able, with the appropriate features, to harvest waste energy normally damaging to pipeline surfaces and use to pre-refine raw resources

21st Century StructiKor agriculture, aqui-culture and bio-culture systems are:

- Quickly and easily assembled, replaced, converted and maintained on site for a wide variety of crops or other bio-systems
- Designed to make highly viable food and medicine production from the exterior of buildings and other structures (walls and roofs)
- Safe with redundant containment systems for crop, bio-system and environmental protection
- Able, with the appropriate features, to optimize nutrient use and minimize water use



21st Century ultra long-lasting StructiKor offshore systems are:

- Quickly and easily assembled and maintained on site for structures up to 30 meters deep
- Ideal as an artificial reef and human habitat
- Safe with multi-redundant containment systems for internal flooding and external environmental protection
- Removable, reusable and fully recyclable
- Able, with the appropriate features, to harvest tidal energy to produce electric power

THE OLD WAY

Stick built on site

Weather issues are a problem

Material scheduling delays

Materials exposed to elements

Inconsistent quality

Changing completion dates

Costly construction financing



STRONGKOR PANAKOR



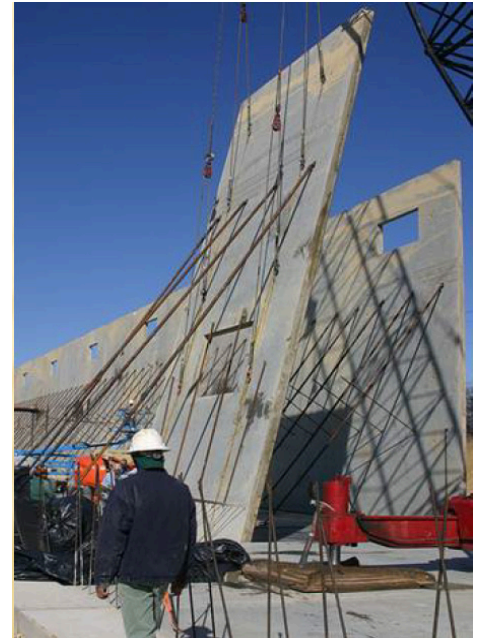
The **PanaKor** system is the generic term that **StrongKor** uses to describe a very versatile building system that assembles structures by means of planar surfaces; horizontally, vertically and obliquely. This system is an ideal solution for everything from single family housing to warehouses.

Example Single Family Residence Project

As needed, **StrongKor GeoKor** foundation anchoring systems would be put in place as a base for the foundations that would be cast in place on site

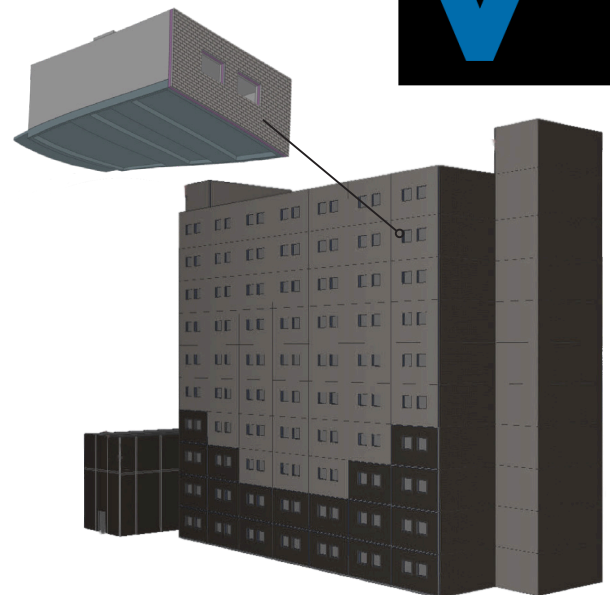
- A slab on grade foundation would be cast in place on site ready to receive the **StrongKor PanaKor** system
- Vertical elements (walls) of the **StrongKor PanaKor** system would be installed with the exterior elements incorporating the **StructiKor** opening reinforcement system for each window and door for protection in areas under severe storm threat

- Only as needed, horizontal elements (floors) of the **StrongKor PanaKor** system would be installed and bonded with the previously installed vertical elements
- Additional vertical elements (walls) and horizontal elements (floors) of the **StrongKor PanaKor** system would be installed and bonded to the previously installed elements depending on the number of floors
- Modular baths and kitchens would be mounted in place along with the home's core mechanical and electrical rooms would be installed as appropriate
- Oblique elements of the **StrongKor PanaKor** system would be installed and bonded to the previously installed elements both for interior (stairs) applications and exterior (roofs) applications
- Final details are completed to ensure the integrity and monolithic structure of the **StrongKor PanaKor** building system
- The interior is now framed and finished traditionally to the desires of the home owner. All exterior surfaces (walls and roof) are prefinished from the factory
- Depending on the size of the home desired, a typical installation for the **StrongKor PanaKor** system for this application would range from 1 to 3 weeks. This will dramatically speed up time in building single family residences while also improving quality and overall building integrity during extreme conditions in the future



STRONGKOR VERTIKOR

- The **VertiKor** system is the generic term that **StrongKor** uses to describe a very efficient stacking building system for certain types of project that do not exceed 15 storeys in height. In these cases we recommend one of two **StrongKor** approaches, the soft/full/hard module assembly or the integrated full/hard module assembly for high seismic load areas



Example Project Concept

- The basement level would be constructed with a **StrongKor PanaKor** and 4 hard modules, interior finish to this level would be completed on site
- Level 1 would be constructed with a combination of **StrongKor VertiKor** elements using **StrongKor PanaKor** panels, 22 soft modules, 23 full modules and 4 hard modules
- Levels 2, 4 and 6 would construct each floor with a combination of **StrongKor VertiKor** elements using 22 soft modules, 24 full modules and 4 hard modules
- Levels 3 and 5 would construct each floor with a combination of **StrongKor VertiKor** elements using 22 soft modules, 25 full modules and 4 hard modules
- Level 7 would be constructed with a combination of **StrongKor VertiKor** elements using panels, 23 soft modules, 25 full modules and 5 hard modules
- Level 8 would be constructed with a combination of **StrongKor VertiKor** elements using panels, 23 soft modules, 25 full modules and 5 hard modules
- Roof level would be constructed of **StrongKor PanaKor** elements to complete the project

PanaKor panels and singular modular elements

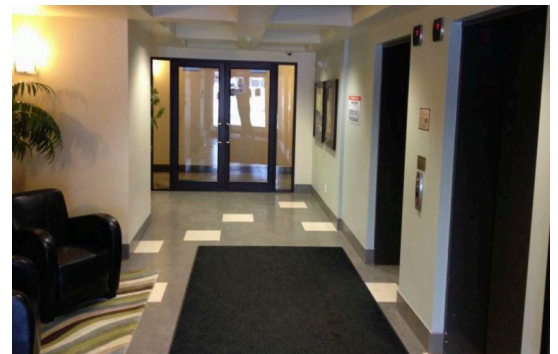
- At the basement level once the perimeter walls and all footings are cast, these prefinished elements make up the remainder of the structure, including the floors for the soft modules at Level 1
- At Level 1 it includes the floors of the soft modules and other individual exterior elements
- At the Roof level it includes the roofs of the soft modules at Level 8 and hard modules, and all prefinished roof structures.

Soft Modules (partially assembled in plant)

- Key pre-assembled manufactured functional elements are installed in these modules in their entirety (i.e. bathrooms)
- Exterior wall systems are installed complete with all finishes, doors and windows
- Interior finishing, cabinetry and accessories are provided in pre-cut kit form and installed on site
- All mechanical and electrical systems are pre-assembled manufactured harness arrangements for easy site install
- Module kits arrive to site fully sealed and protected

Full Modules (fully assembled in plant)

- Includes all interior and exterior walls, floors and ceilings/roofs (with doors and windows) for a complete architectural/structural element
- Includes corresponding corridor space
- Includes all interior finishes
- Includes all interior cabinetry and accessories
- Includes all mechanical and electrical systems
- Modules arrive to site fully sealed and protected



Hard Modules (fully assembled in plant)

- For stairwell, includes all interior and exterior walls (with doors and windows), landings, stairs and railing for a complete architectural/structural element
- For elevators, includes all interior and exterior walls and elevator inserts for easy, rapid installation
- Includes all interior and exterior finishes
- Includes all mechanical and electrical systems
- Modules arrive to site fully sealed and protected



Example Installation Process - Summary

- Site is prepared, utilities are run and the perimeter walls below grade and the foundation footings are cast in concrete (approx 3 months)
- Basement level is installed (1 week including SOG)
- Level 1 is installed (3 weeks)
- Levels 2 to 8 are installed (3½ months)
- Roofing and Roof Level construction installed (1 week)
- Final finishing (1 month)
- Commissioning and turn over (1 week)

STRONGKOR OMEGAKOR

The **OmegaKor** system is the generic term that **StrongKor** uses to describe an extraordinarily flexible and capable building system that allows a wide variety of buildings to be created without the normal limitations on:

- Height • Strength • And replacement or inter-changeability even after the project has been completed. Individual modules are built off-site while the superstructure is being completed

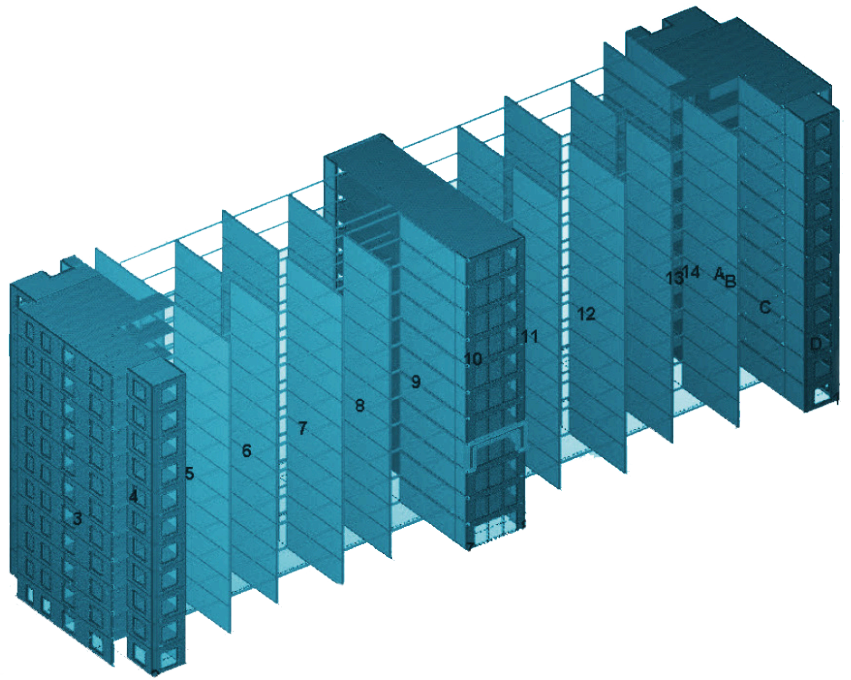


Units arrive on site with:

- All electrical/mechanical systems in place
- All finishes complete including flooring, windows, doors, lighting, plumbing and kitchen fixtures, cabinets and appliances (even flat screen televisions)!

Units are built with:

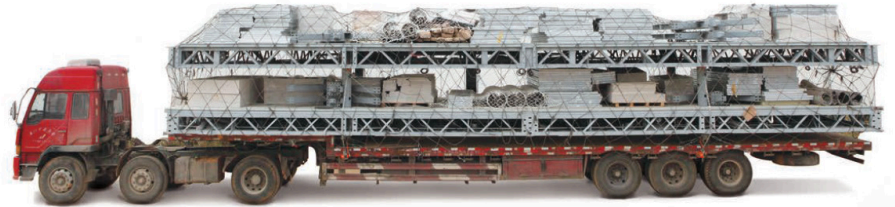
- Advanced and robust 'plug-n-play' allows for easy hook-up of electrical/mechanical systems
- Hook-ups strategically located inside the building for speed, efficiency and green energy design



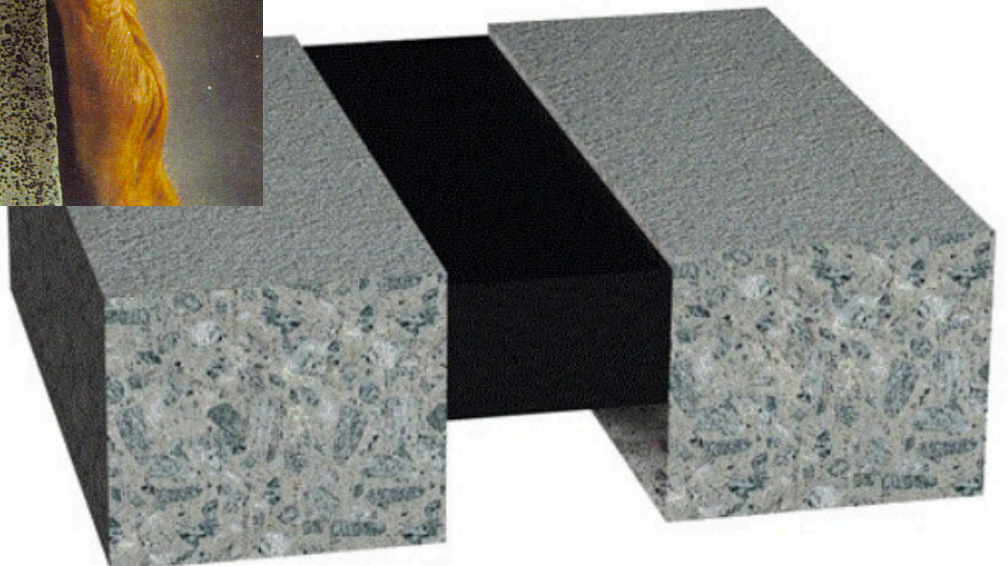
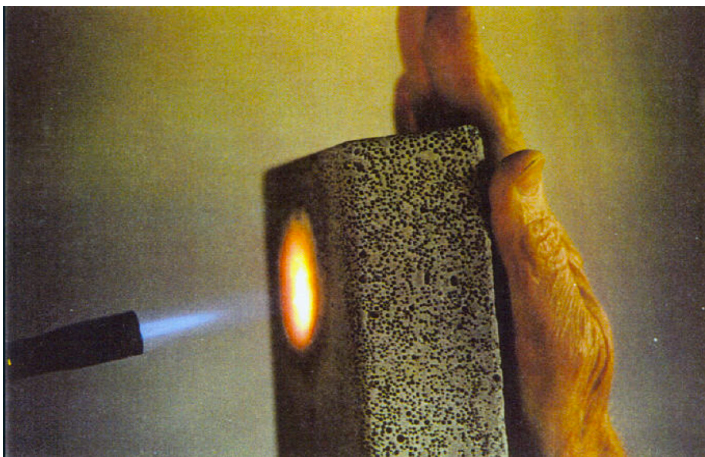
Individual components slide into the structure:

The **OmegaKor** system is the pinnacle **StrongKor** building system which allows elements within a completed structure to be easily replaced with little impact to ongoing operations for:

- Upgrading building systems
- Changing uses or needs of occupants
- Micro-wave de-contamination (i.e. for 'super-bug' bacterial infections)
- Major disaster recovery (i.e. fire or explosion)



Superior insulation and durability



MATERIALS SCIENCE

CONCRETE	ADVANTAGE
Little or no aggregate used 40% Less weight	40% Less weight Easy to transport- Less cost
Proprietary concrete ingredients	Retains compressive and tensile strength Includes ductile strength for earthquake proofing
Extruded or embedded (not poured)	Quick curing Any shape and size - with stone, tile, brick or any other texture
Reduced or eliminated architectural/engineering fees	Additional cost and time savings

GREEN SCIENCE

FEATURE	ADVANTAGE
LEED Certified	Very little waste
	Fewer materials used
	50% less energy to build than conventional
	Complete building is recyclable
	Complete building is reusable
	Non-toxic material used
	Superior thermal efficiencies
	Harvests a variety of waste energy
	Minimal site disturbance
Minimal marshalling area needed	

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