



INNOVATIVE  
PRODUCT  
AWARD

Upbrella is a patented innovative construction system for high-rises. It starts with the roof and doesn't require a tower crane. Upbrella is a new assembly of construction means including: the permanent roof, a set of synchronized vertical actuators to lift the roof every level, a temporary protective enclosure attached to the roof perimeter, a peripheral work platform adjustable to the building exterior shape, a roof undermounted bridge crane, a street level side mounted jib crane, a high capacity vertical hoist/platform and numerous other handling equipments and protection systems. This new system can replace conventional equipment such as tower cranes, freight elevators, manual scaffolds, scissors lifts, suspended platforms.

With Upbrella, the roof is installed as soon as a repetitive typical floor is required. The lifting system is attached under the roof, ready to push on the last/upper floor completed. The material are unloaded efficiently using the jib crane to unload trucks onto a side vertical transporter. Materials are lifted to the construction zone with the transporter and the bridge crane that extends above the transporter quickly take the components where they will be needed on the floor. The new floor assembly/components are assembled at men's height in order to let them work with their feet on the floor at all time. When the assembly is completed, the roof is lifted up by pushing the actuators on the last/upper floor. The new floor assembly is suspended to the roof during the lift, resulting in the positioning of the new floor assembly to its final height. Once the new floor and roof are lifted, columns are installed underneath the new floor assembly. The new floor assembly can be braced in permanent position, launching the exterior wall construction underneath the new floor assembly. While the exterior wall is being built, the final work is completed on top of the new floor assembly to prepare the concrete pouring. No concrete is lifted.

Upbrella can also come with extensible elevators and phased mechanical systems to allow first floors occupancy as soon as the completed floors meet all the Codes and regulations.

Upbrella advantages are:

**Deliver Faster:** Since roof, elevators and mechanical systems are functional, first floors can be occupied as soon as they meet the regulations, meaning much faster than ever before. Being able to occupy the first floors also reduce the risks associated with budget overruns and market changes.

**Control Calendar:** The work zone is sheltered from the elements, therefore the calendar is typically 20% shorter at no extra cost nor overtime (in Canada, most project loses an average of one day per week because of weather conditions).

**Improve Quality:** Sheltered construction results in improve quality because workers work in a controlled environment. Inspection is also facilitated by the peripheral work platform that is accessible all the time, all around the building.

**Reduce Costs:** The cost of the Upbrella system and the complexity of the construction are not affected by the height of the building. In fact, the higher the building is, the higher the fine tuning gets from floor to floor. For tall and thin towers, Upbrella equipment alone can be much cheaper than the conventional equipments. In addition, Upbrella reduces the public occupancy costs, the winter fees, repetitive temporary installations, insurance costs (eliminates water damages during construction and reduces fall of objects/workers) and eventually, safety wages as the number of accidents will reduce.

**Improves safety:** The protective enclosure for the construction zone eliminates most risks associated with elevated works. The workers have the two feet on the floor almost all the time. The work environment is controlled and engineered in advance.

**Durable values:** Upbrella limits energy wastes (such as temporary heating), limits the number of temporary installations that end up in the containers and facilitates elevated construction, providing new simple solutions that encourages the TODs (Transit Oriented Developments) by limiting their risks.

Upbrella is unique because it is the first system that:

1. Uses the permanent roof as a construction shelter that is lifted during the construction
2. Where a protective enclosure is equipped with a peripheral work platforms the prevents object and workers from falling
3. Where each new floor construction is completed at men's height to be hooked to roof and lifted simultaneously with the roof
4. Uses an innovative, yet simple, combination of industrial handling equipments to move materials vertically and horizontally
5. Provides all the means (such as extensible elevators and extensible/phased mechanical systems) to deliver first floors much sooner
6. Allows to synchronize sales, financing and construction of real estate spaces.