



BUILDING THE FUTURE

Tower Crane Innovations & BIM

By Aviv Carmel



A group of seven yellow Minions wearing blue overalls and white hard hats are standing on a grey steel construction beam high above a city. They are holding various tools and food items like baguettes. The background shows a dense urban skyline under a grey, overcast sky.

BIM - What are they talking about ?

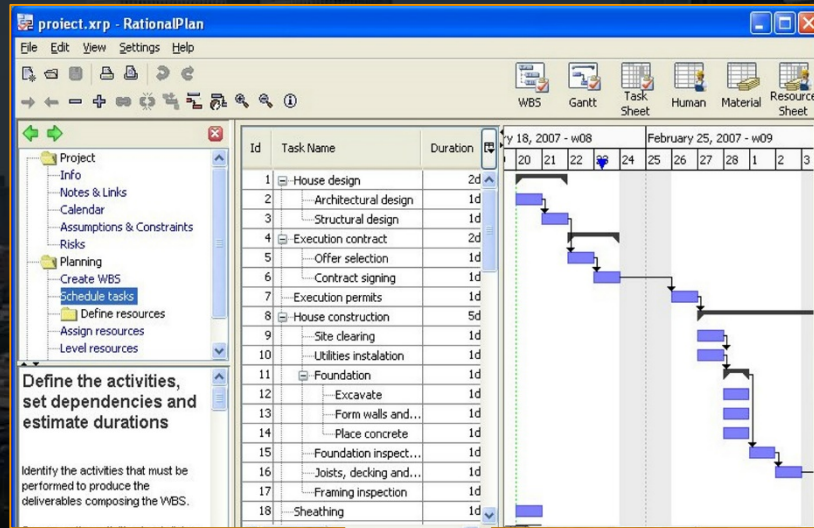


BIM

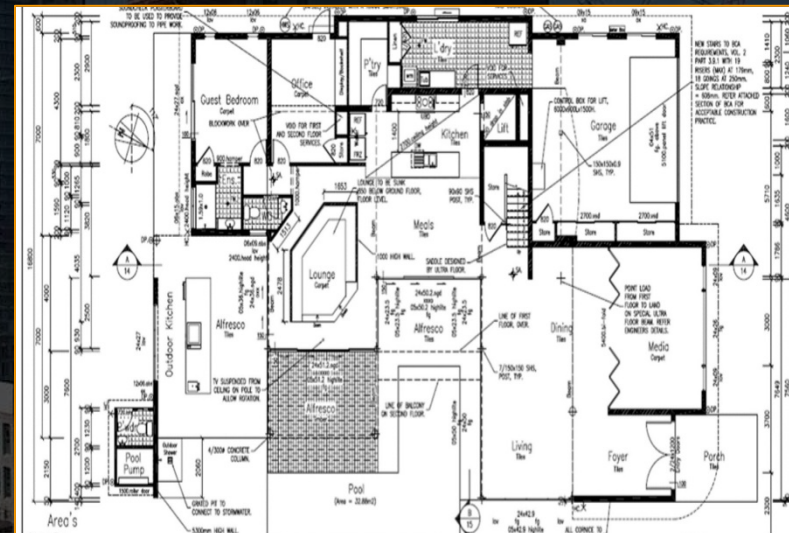
Visual Language



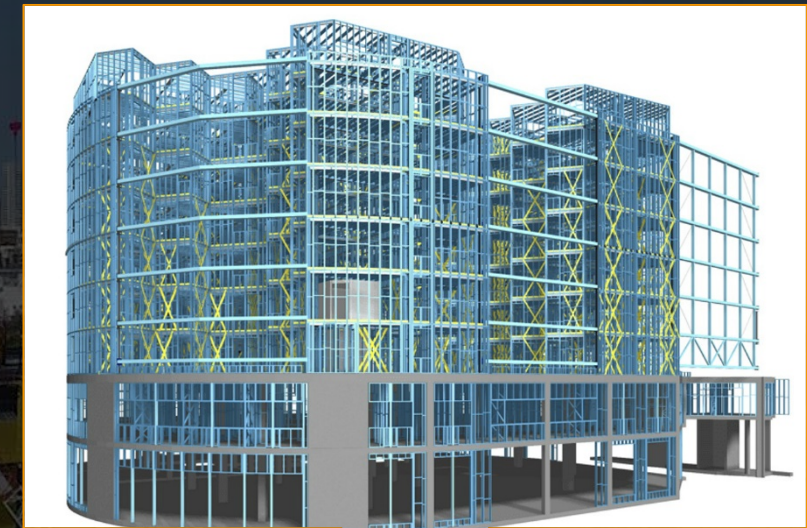
BIM - Building Information Modeling



Managing software



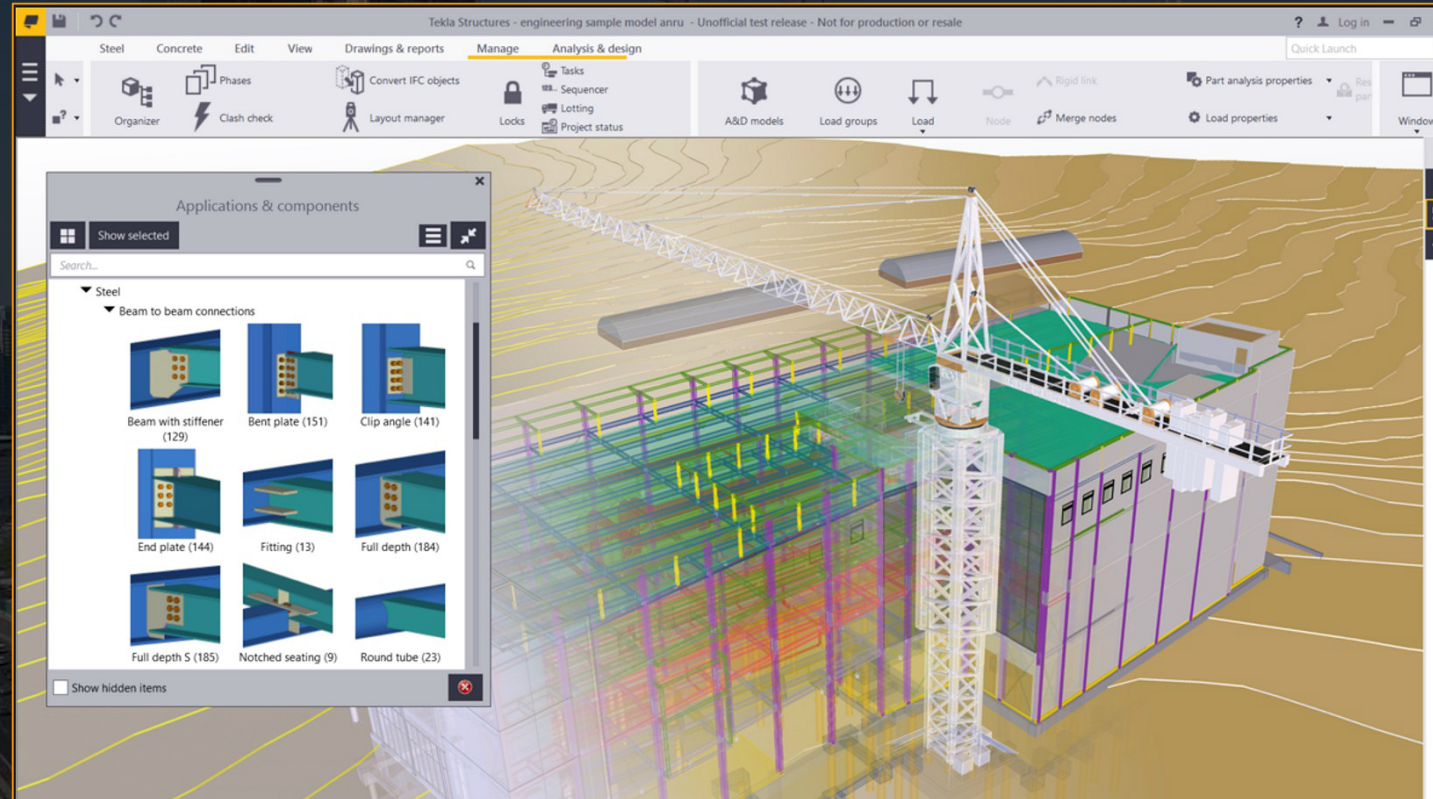
Drawing software



Graphic software

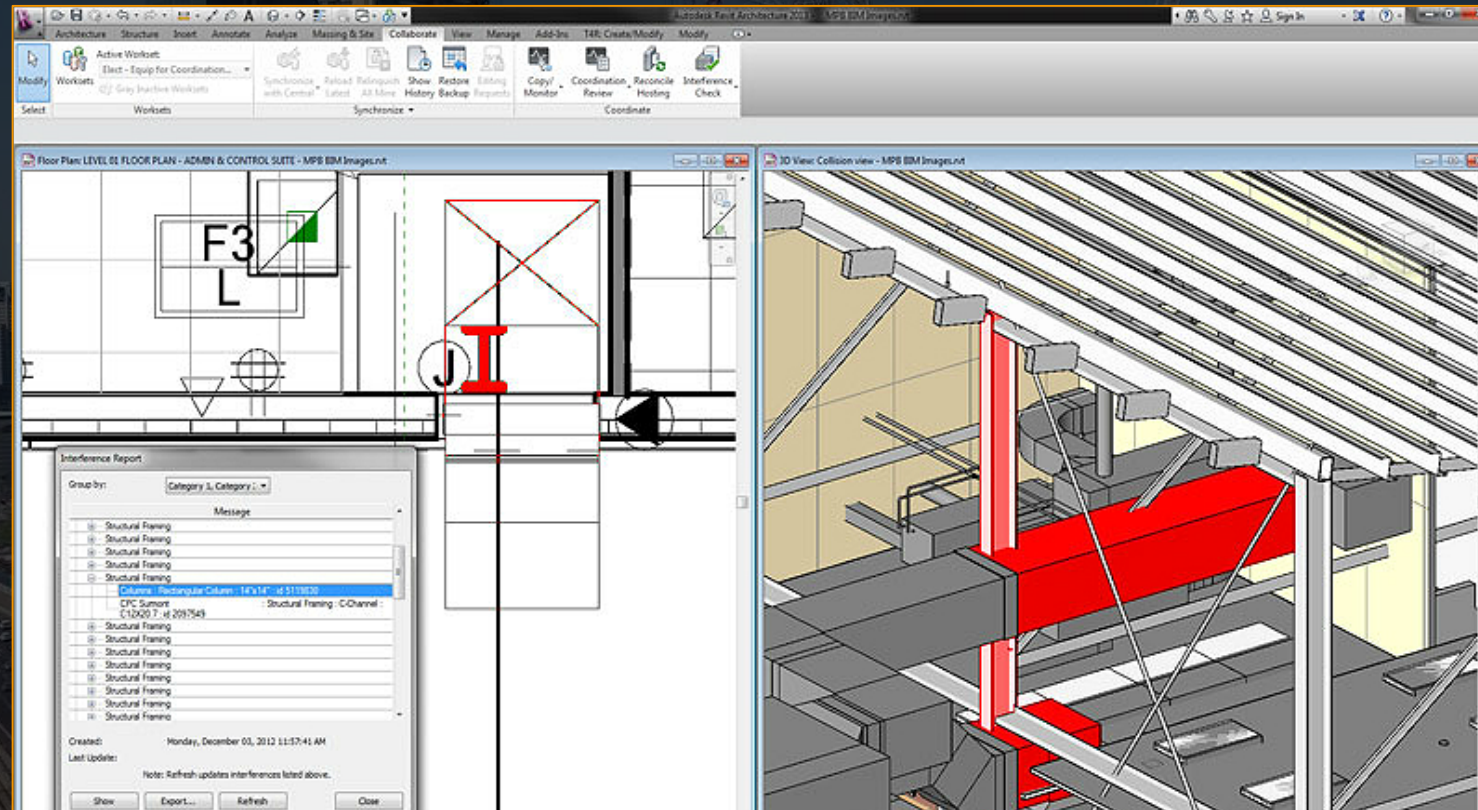


BIM



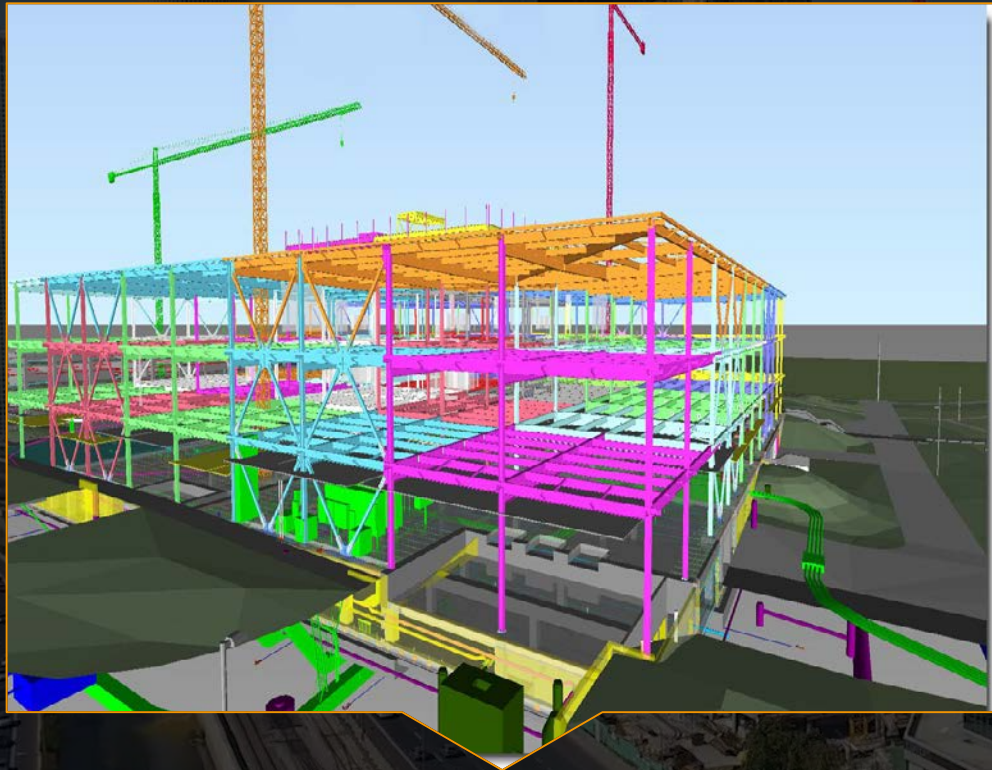
Powerful Graphic Interface
Everybody's data on one platform
Shared working standard

BIM

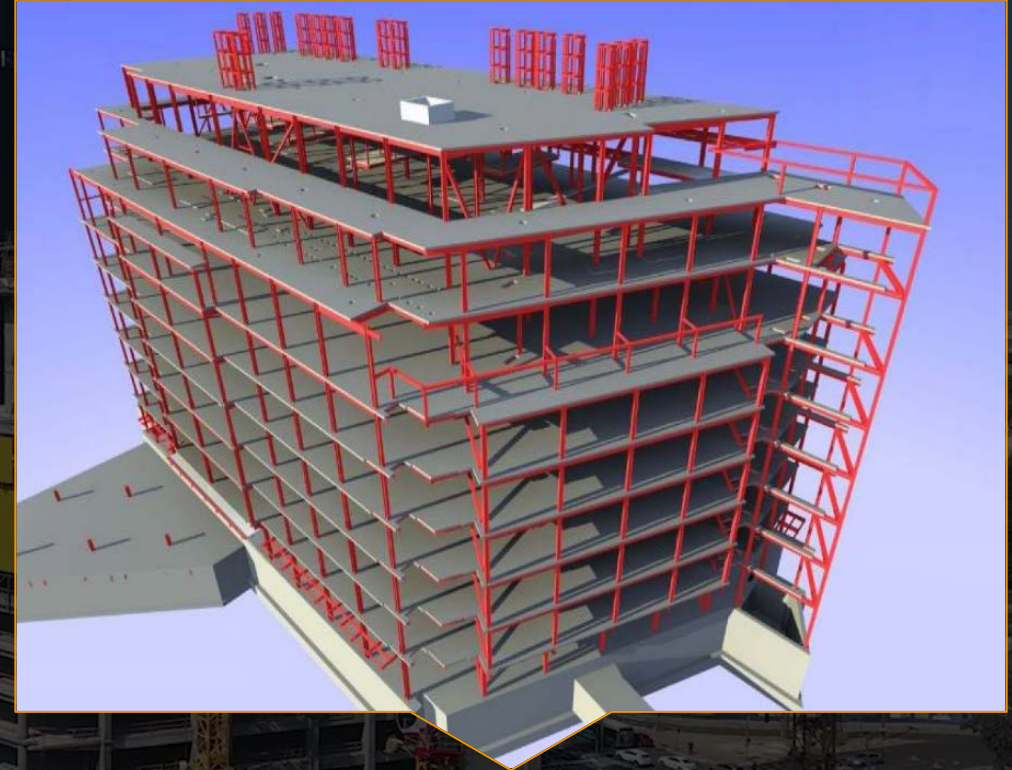


Small details
Integrated systems
Collisions

BIM



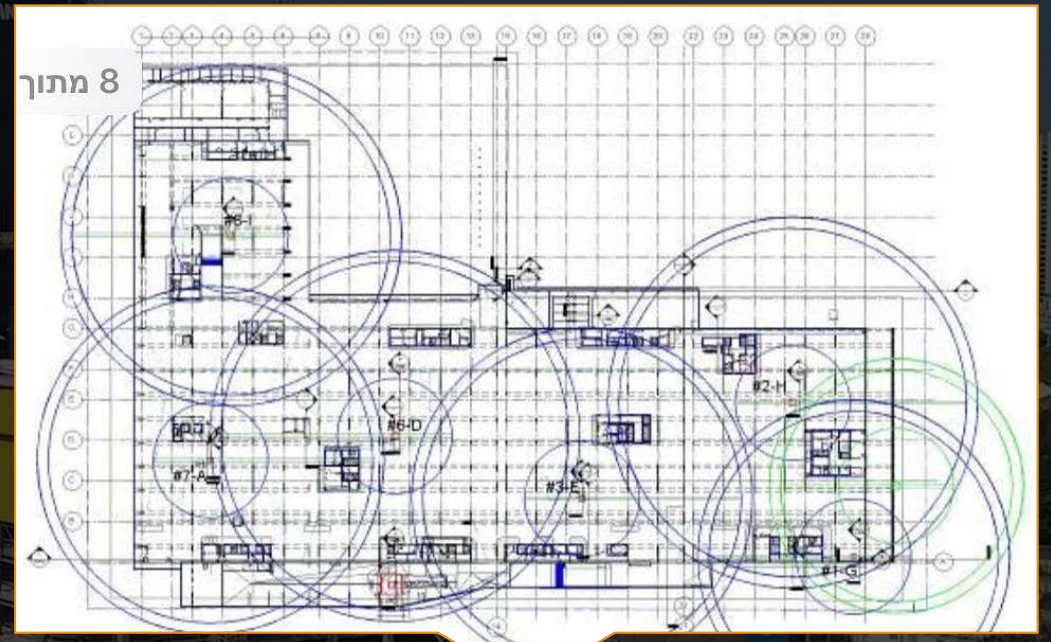
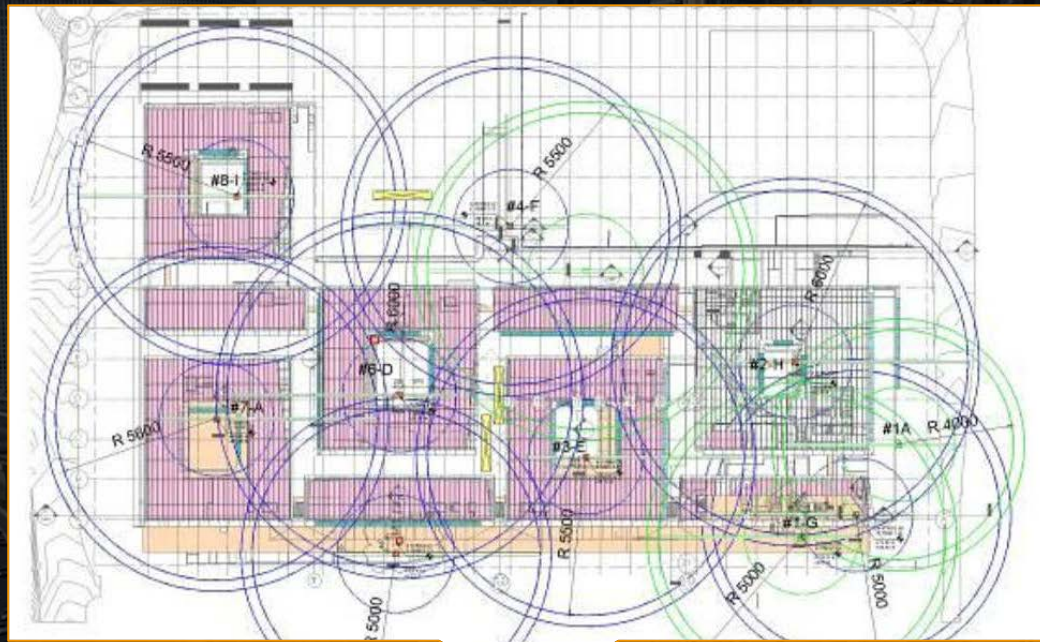
**Modeled project
See the schedule**



**Real elements at virtual construction
Designing to construction process**

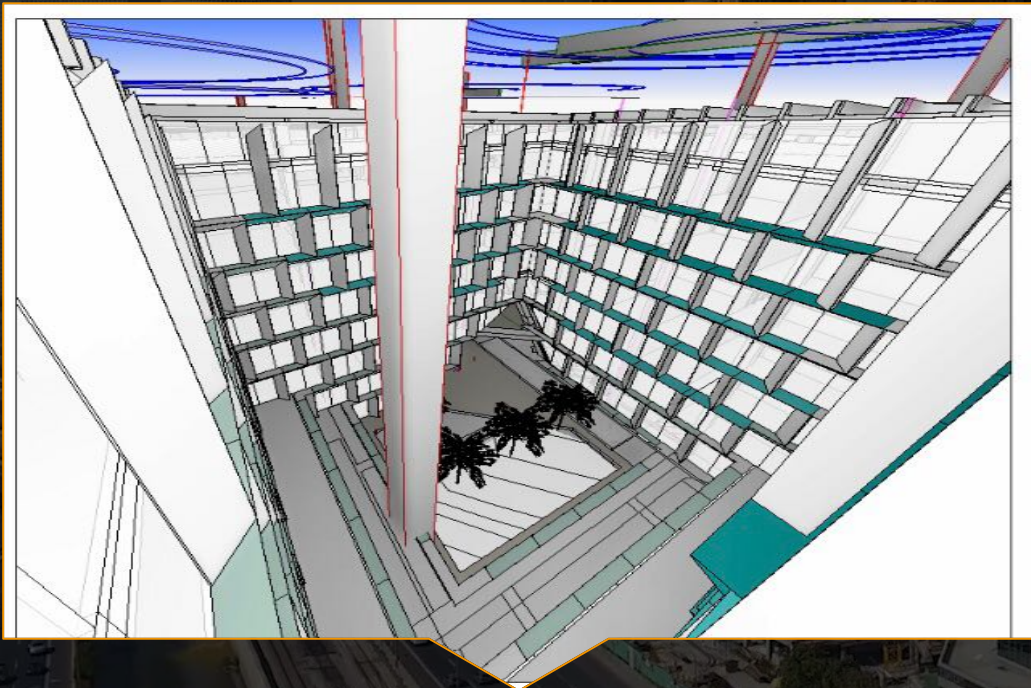
BIM

Project - Teva Pharmaceutical Industries new campus

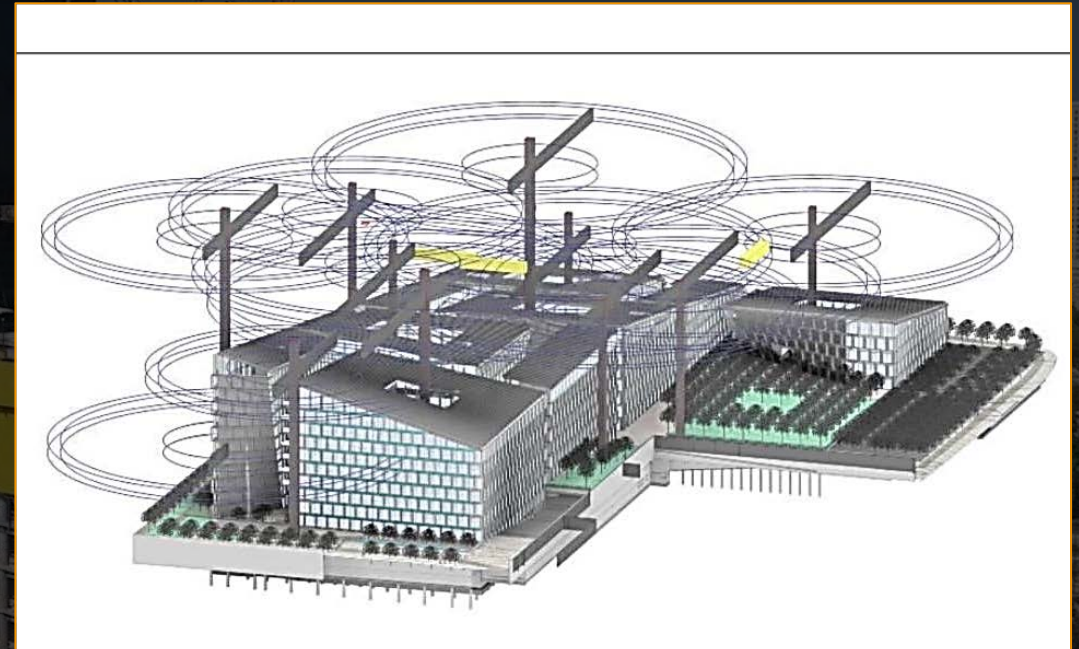


History

BIM



Foundations



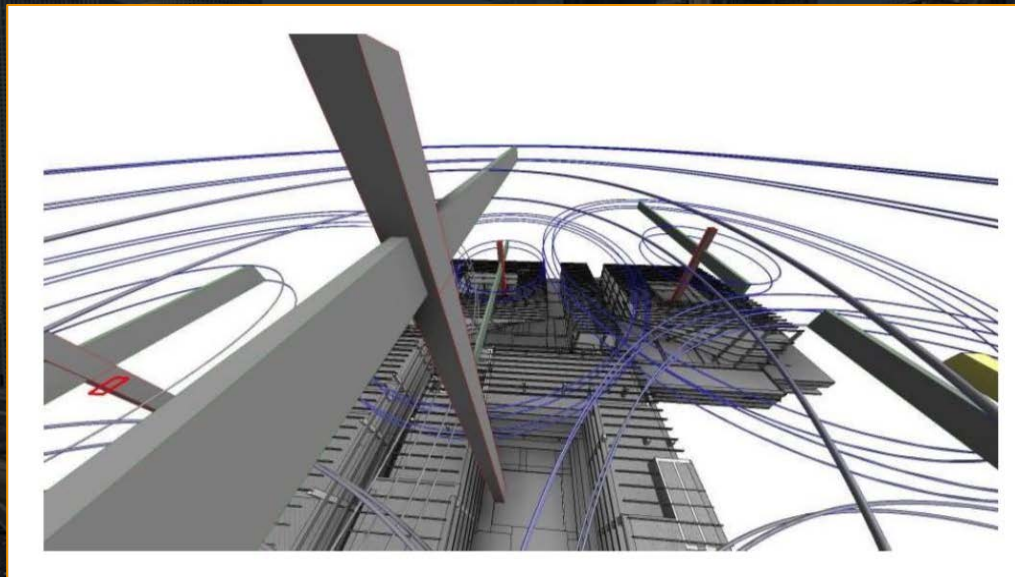
Tie level, overlapping crane, building

BIM

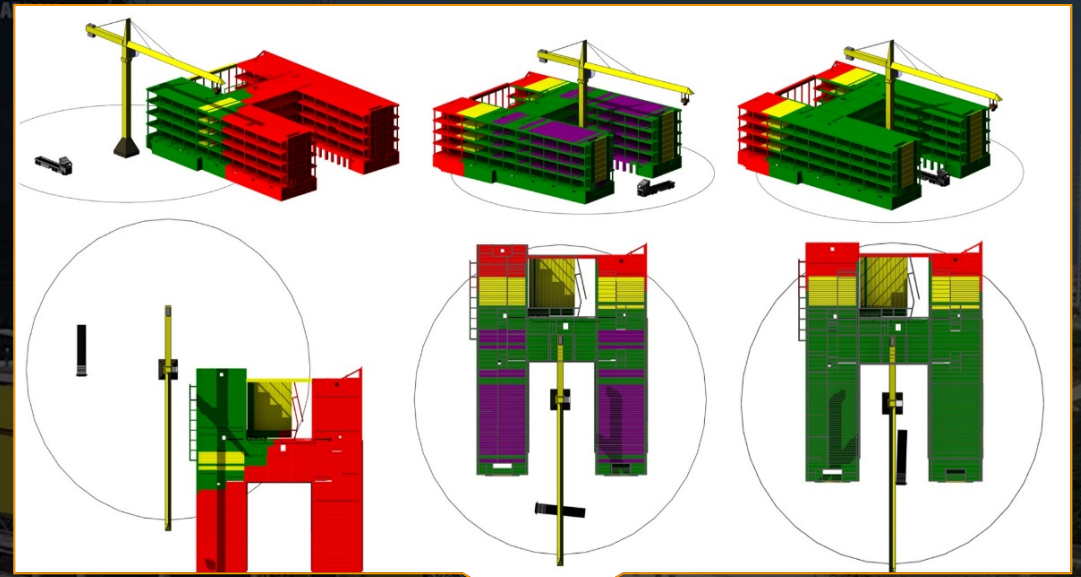


Collision

BIM

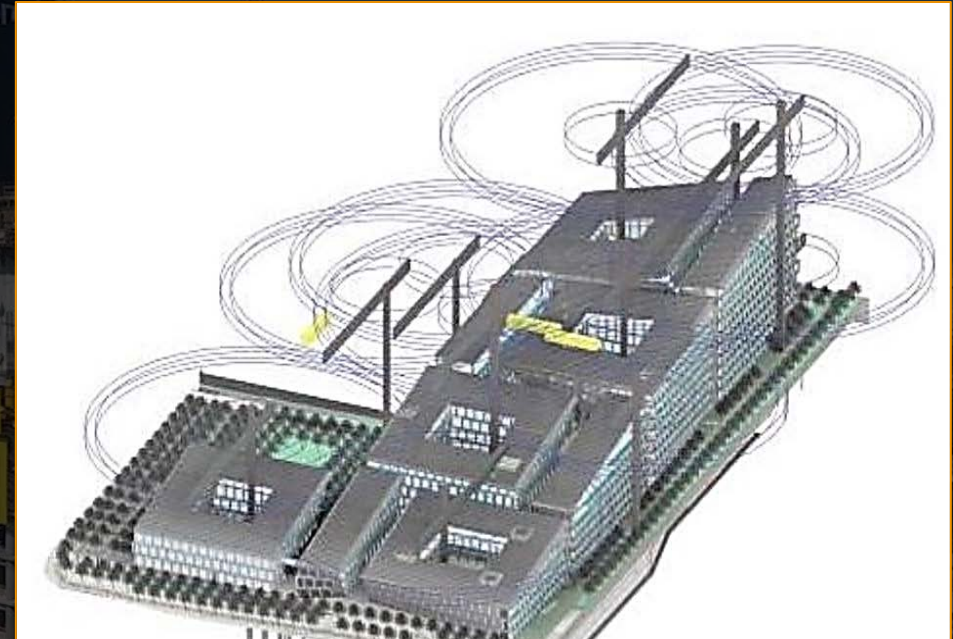
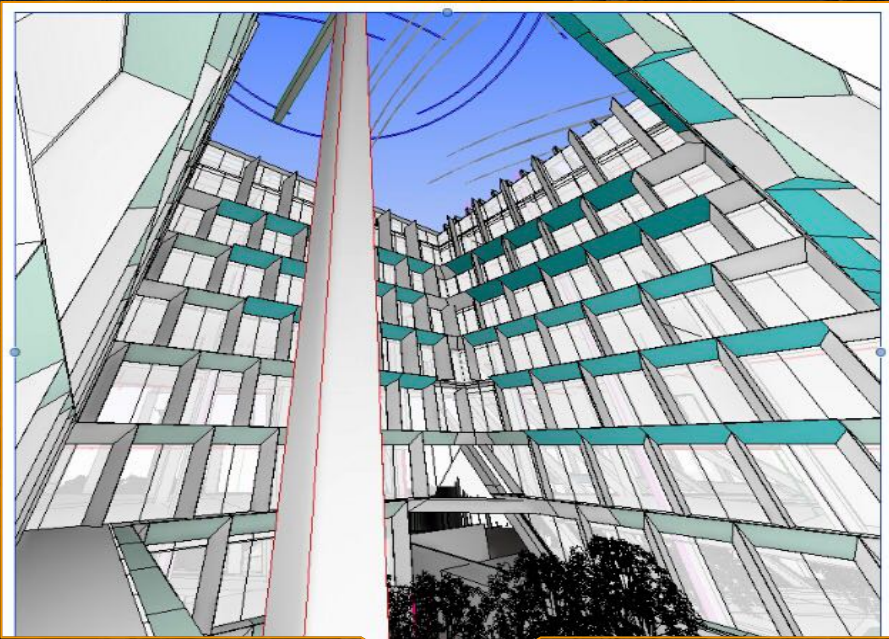


Practical models



Smart crane model
Alert

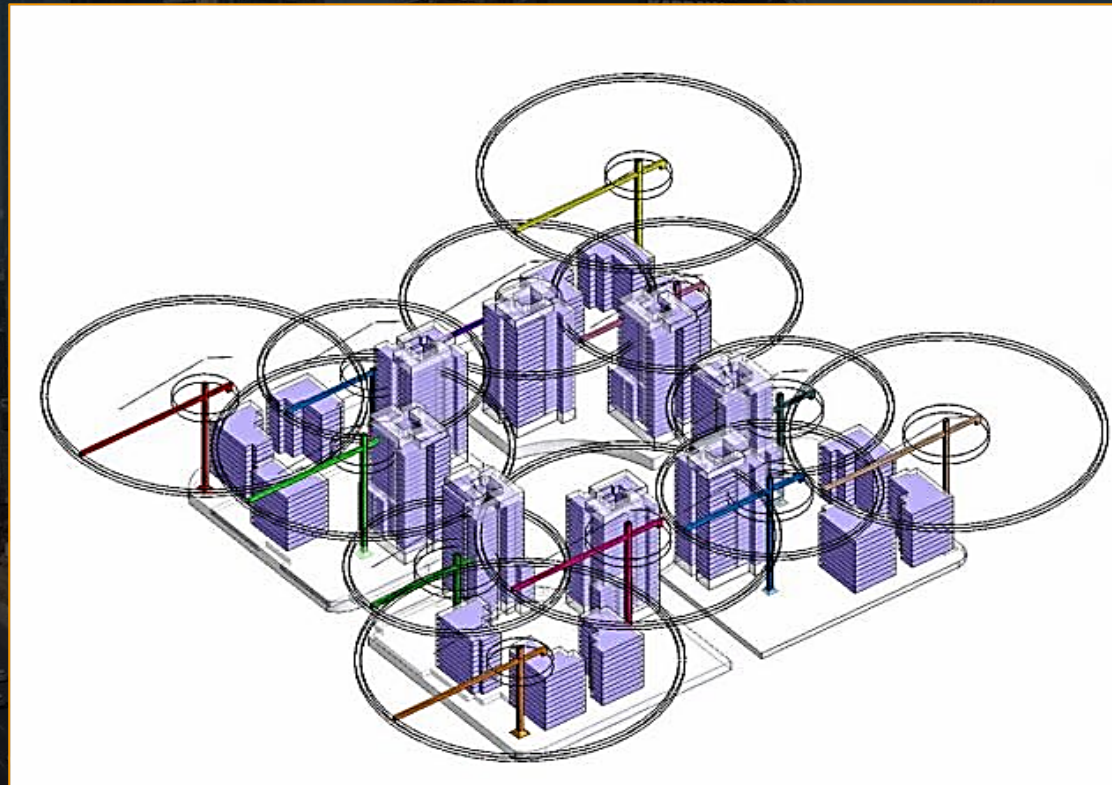
BIM



The next step – Building to crane translator
Floor Mast section

BIM

Project - Psagot Afek neighborhood



Cut unexpected expenses from 6% to 1.5%



You can really plan & make decisions
Reliable
An amazing working tool for professionals



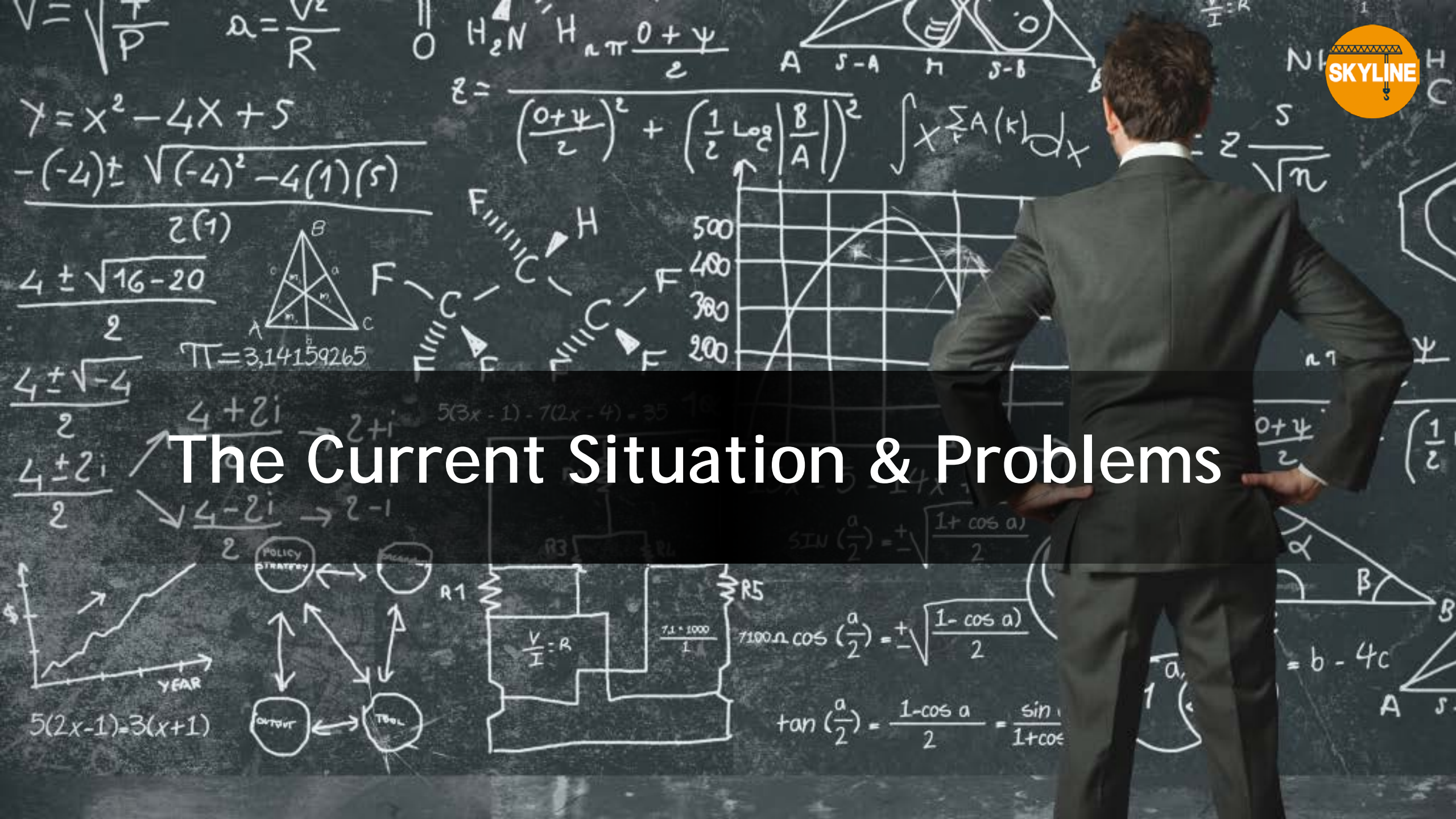


The Evolution of Tower Crane Innovations

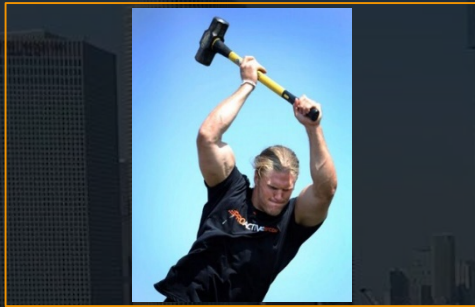




The Current Situation & Problems



Pin



Big guy



Deformed pin



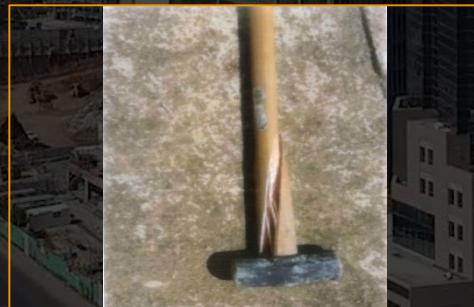
Big hammer



Jammed pin



Exhausted staff



Broken hammers



Extra expenses



Limited time

Climbing System



Inside the building



Dense & Clumsy



Inaccurate



Holes/gaps in building floors



Reinforcement support



Metal- concrete match

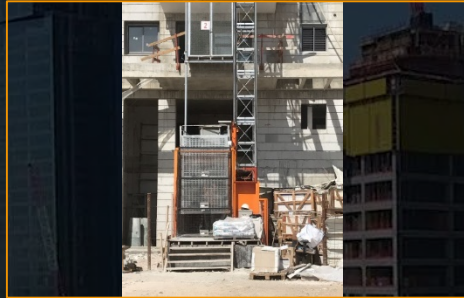


Limited time

Feed In Device



Finishing works



Construction hoist



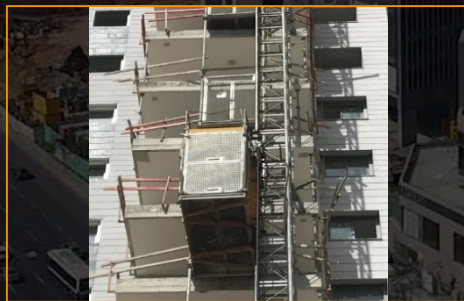
Temporary balcony



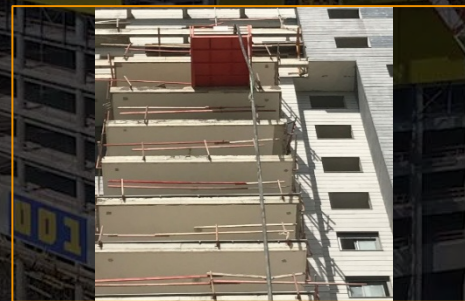
Clumsy balance



Inefficient



Size limitation



Weight limitation

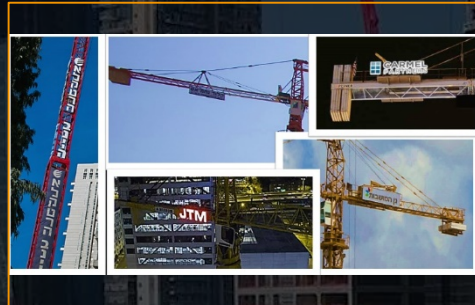


Safety

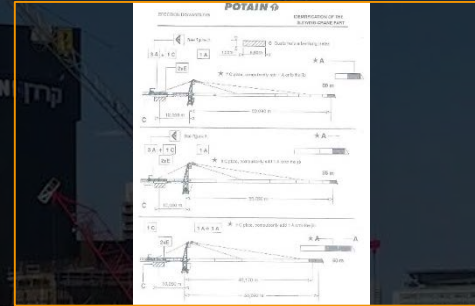
Crane Advertising



Called for signage



Multiple signs



Limited wind sail



Blurred ad



Drag Coefficient



One advertiser



Day view only



Fixed message



The Dilemma

Pin

tight vs. loose

Climbing System

complex vs. one unit
flexible vs. stable

Feed In

unbalanced vs. levelled

Crane advertising

visible vs. transparent





The Idea & Solution





Adjustable Pin by Carmel Design



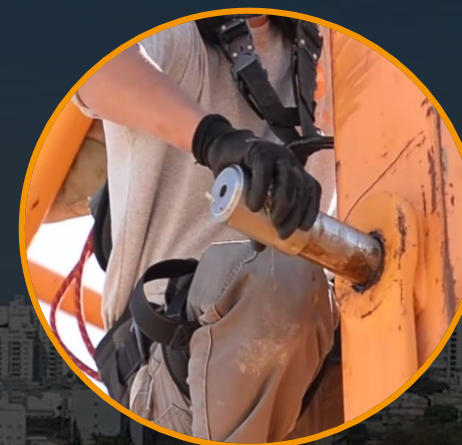
Adapt Its Form



Adapt Its Form



Safe



Easy



Open pin



Locked pin



Fast

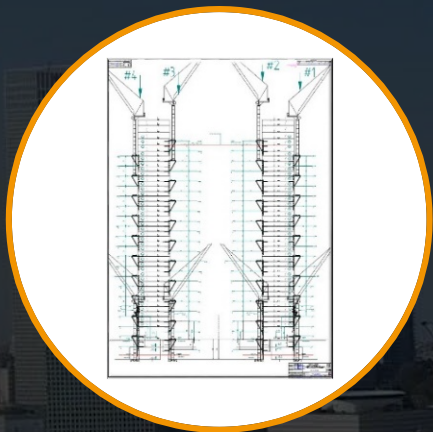


50% time saving

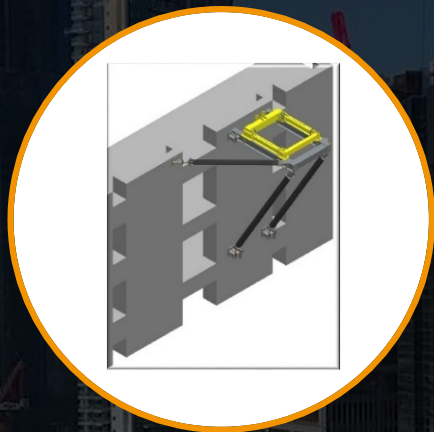


PATENT

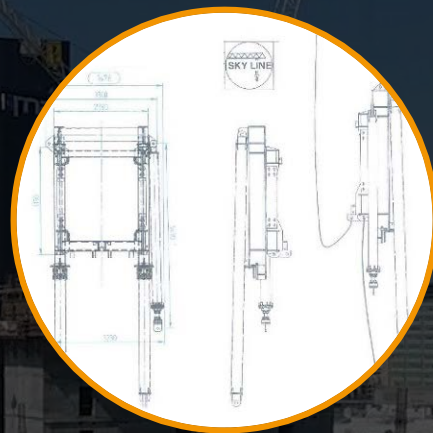
Folding, Flexible, Climbing System



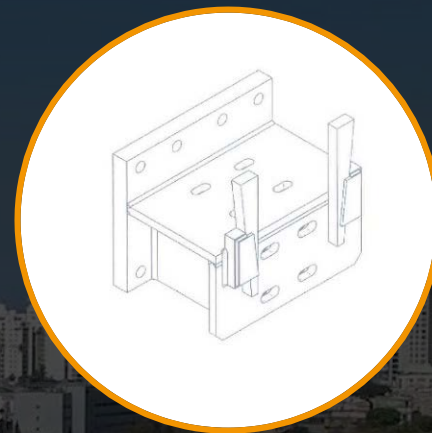
Out of the building



Core/Skin



Folding system



Flexible adaptor



Folded climbing system



Unfolded climbing system



Flexible adaptor & fast lock



Integration of system types

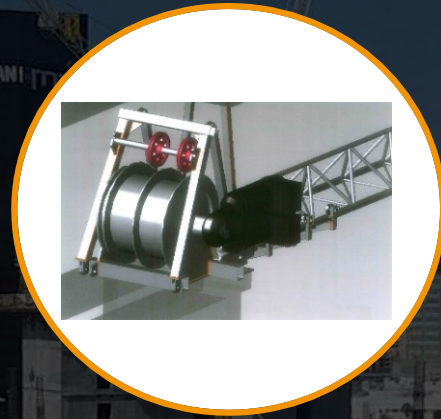


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Skylight Feeder by Carmel Design



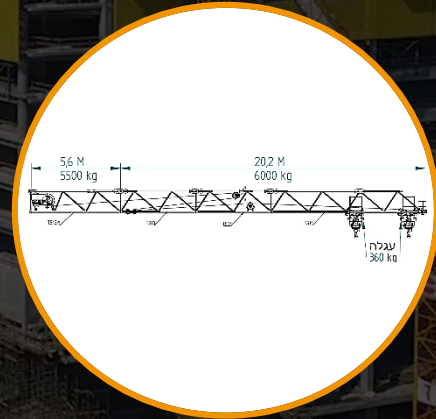
Fixed counterweight



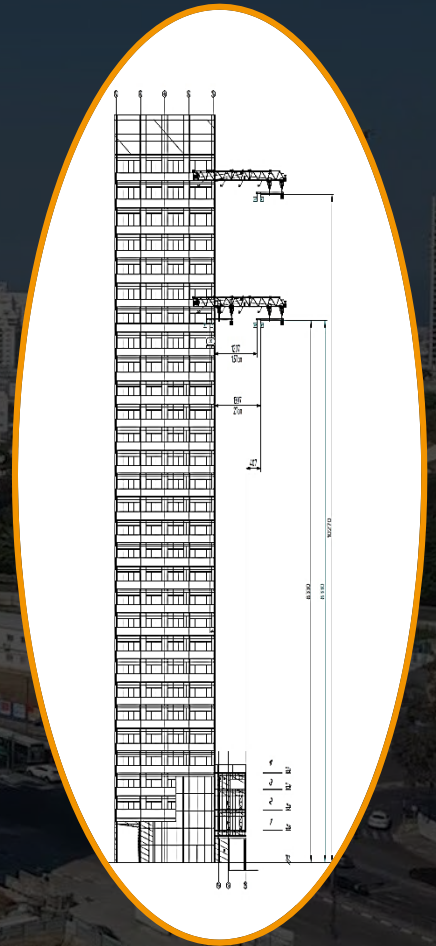
Dual drum



50% - 70% time saving!!



Dual trolley

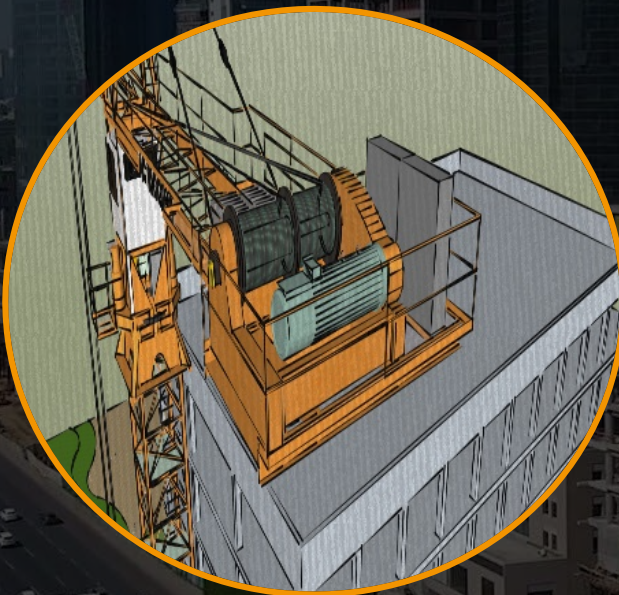


Flexible installation



Skyline Feeder by Carmel Design

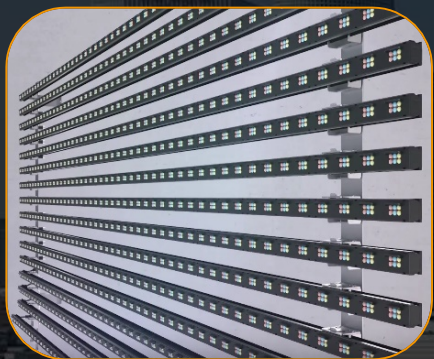
Crane with feeder capabilities



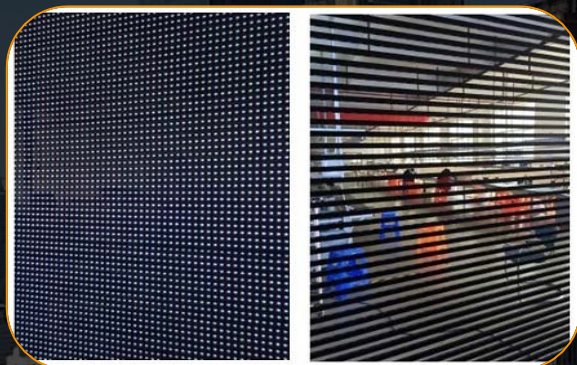


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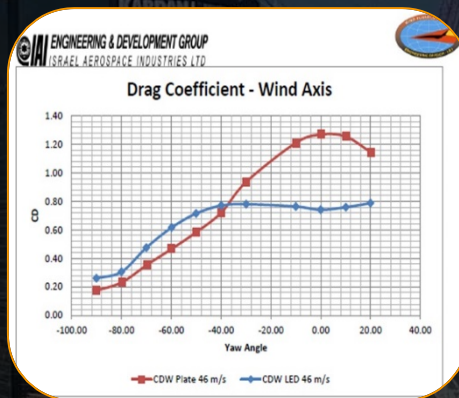
Sky Sign Crane Advertising



Modular Led bars



Transparent to the wind as well as visible to the eye



- 43% Drag coefficient



New income platform



THANK YOU