

A Comparison Between Traditional Quantity Take-off Practices VS BIM-Based Take-off (BIM-QTO)

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Glodon 广联达

A Digital Building Platform Service Provider

Providing Customers with Building-lifecycle

Digital Solutions

The 1st listed company in China's engineering construction information technology industry, listed on the Shenzhen SME Board in May 2010. Stock Code: 002410

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01 The Current QTO

02 The Changes of QTO

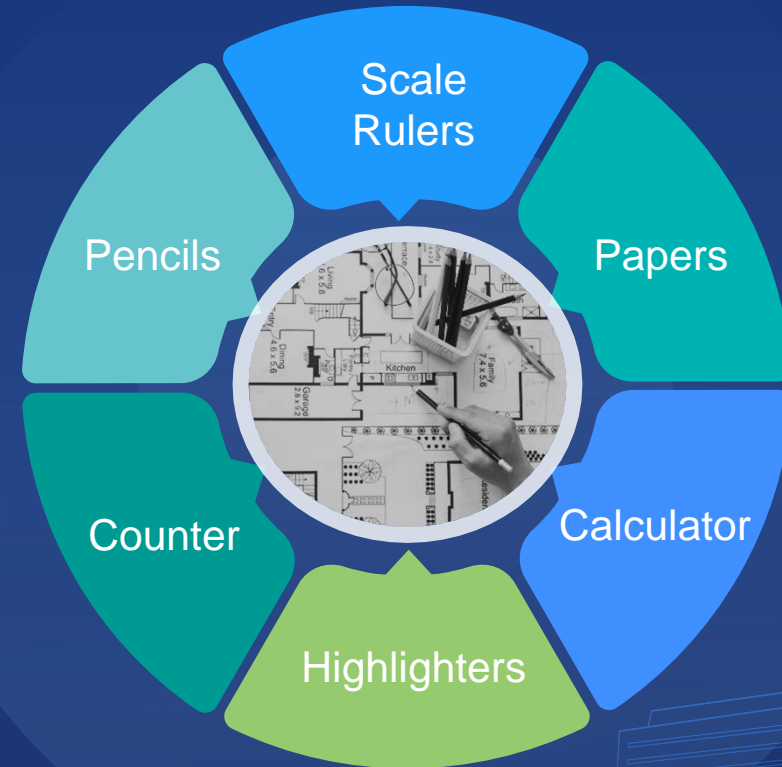
03 Case Sharing



What are we currently Doing?

And the majority feels...

- *This is the easiest way to do my work!*
- *I do not need to think too much to proceed with my QTO!*



Why 5D BIM Digital Transformation?



BIM Design has become the current rapidly uprising trend in AEC industry, and will be the mainstream in the coming years



15889	21246	4753	461394
465	4704987	4613431	1384
51781	4311894	1321	32
4764916	1845	13678	46
4311229	5468278	190	51781
1680	655014	227	1781
5468613	1682	51616	32192
054649	156453	1616	1973
170	1682	32027	32192
56288	681	1808	1781
1517	31862	1908	1176
516	1643	1616	157149
97	1643	1011	973
8	1451	156984	5258
	846	808	806

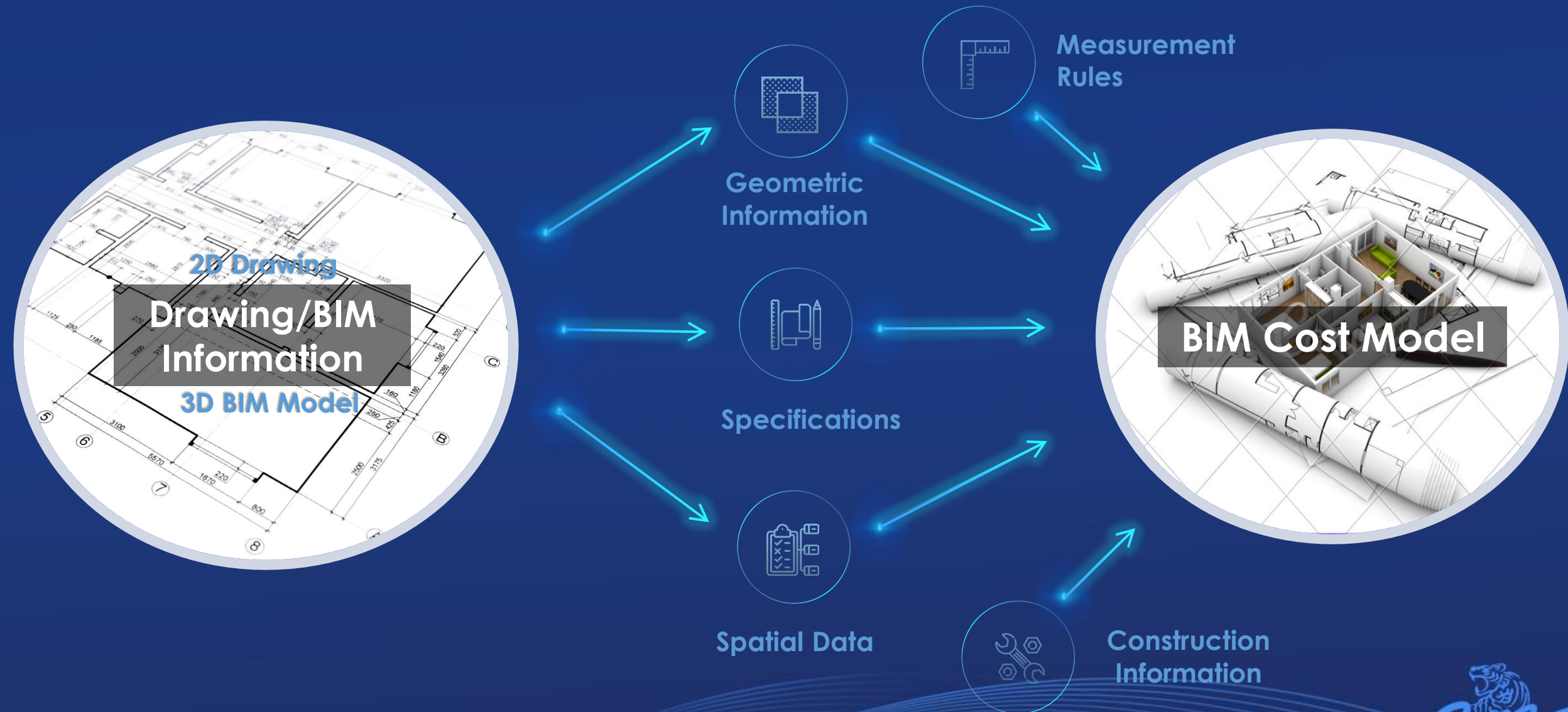
- Project Cost Data is residing and being managed in many different forms and files, which is not structured and very tedious to be mined and utilized



- Multiple historical project cost data not being managed in a common data environment



- Cost Data information is not being conveyed to one another among project parties in a timely and productive manner





- BIM Design Perspective
- QS Cost Estimating Perspective
- 5D BIM Cost Model Perspective
- 5D BIM Usage Scenarios & Recommendations

BIM Model Quantification Has Never Been This Fast!



The screenshot displays the Glodon software interface for BIM model quantification. The main window is titled "Cubicost TAS C-II VIP (TIO) - [Project3]". The interface is divided into several sections:

- Top Menu Bar:** Includes "START", "PROJECT SETTINGS", "BIM MODEL", "IDENTIFY", "DRAW", "VIEW", and "QUANTITY".
- Toolbar:** Contains various icons for file operations (Import IFC File, Export IFC File, Export IFC Quantity, Import RVT File, RVT Changes RVT), analysis (View BIM Attribute and Quantity, Match Attributes, Check Entity Object Type, View BIM File Information), and output (Import Model, Export Model-Cubic Model, Save as Picture).
- Context Menu:** Shows "Ground Floor", "Axis", and "Axis Grid" options.
- Main Viewport:** A large dark area for the BIM model, currently empty. A 3D coordinate system (X, Y, Z) is visible in the bottom-left corner.
- Right Panel:** A vertical toolbar with icons for navigation and viewing.
- Bottom Status Bar:** Displays "Specify first corner point, or select element entities". It also includes tabs for "Modeling", "BQ", and "Report".
- Bottom Footer:** Shows coordinates "X = 1975 Y = -842", "Floor Height: 3.000", "Bottom Elevation: 0.000", "0 0", "Hide: 0", "Cross-Element Select", and "All rights reserved by Glodon Company Limited." The FPS counter shows "111.111 FPS".

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01

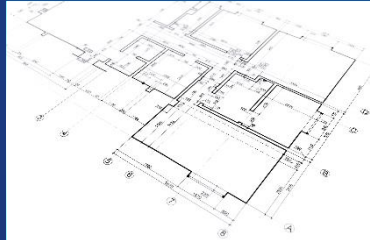
The Current QTO

02

The Changes of QTO

03

Case Sharing



Read Drawing

- B&W Lines layouts
- Plan Drawings could be Difficult to comprehend



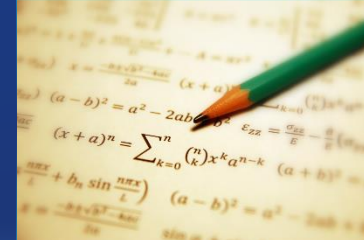
Measurement Stage

- Physical stationaries are needed
- Rough Estimates due to potential inaccuracy of Scale factors



Tabulating Dimension

- Differential Excel Format based on Individual QS Preference & Practices
- Inconsistency in Dimension tabulation between different QS



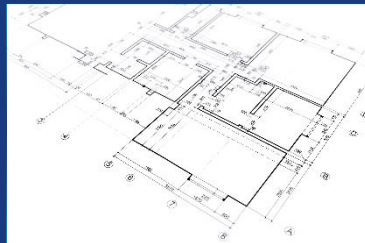
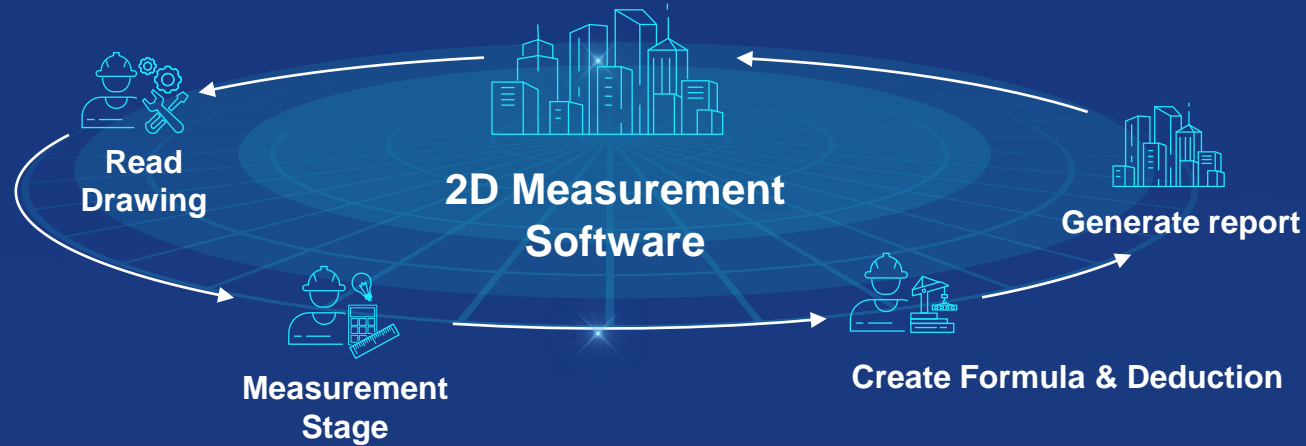
Create Formula and Deductions

- Different considerations on Method of Measurement
- Inaccuracy of results based on different formulas defined



Generate Report

- Quantity Summary Report differs from Individual QS



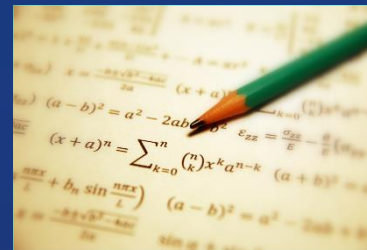
Read Drawing

- CAD / PDF / JPEG – File Based on Original Drawing Source Format
- Transposition from paper documents to a Digitalized platform



Measurement Stage

- Estimated quantification of area through Ditto Points
- Transpose rough estimates to excel table
- No Consideration of QS Standard of Measurement rules for quantities generated.



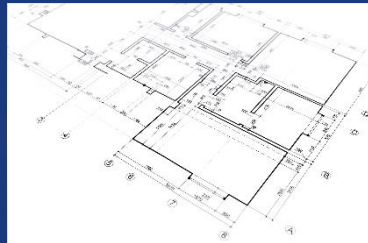
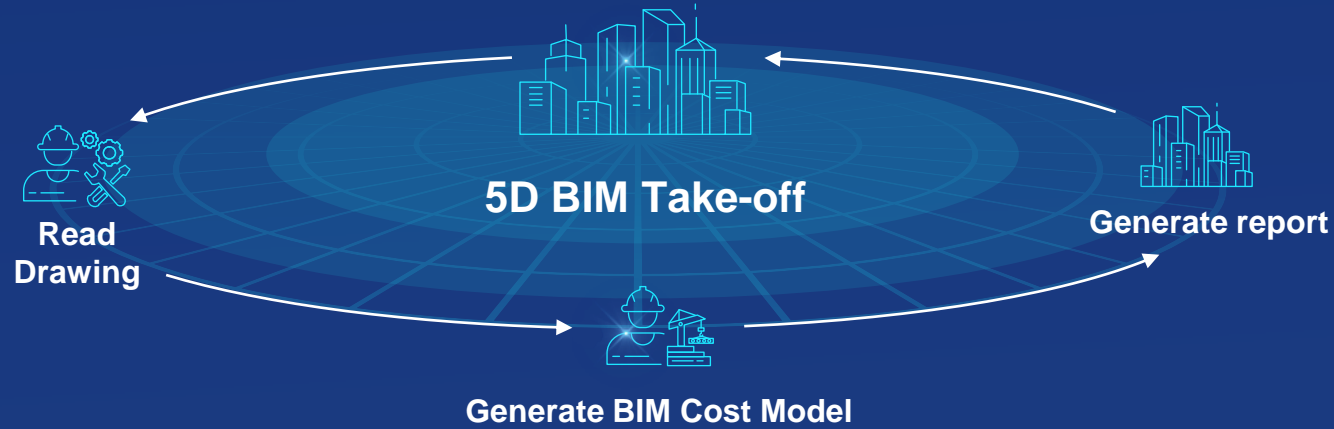
Create Formula and Links

- Differential Settings and Format based on Individual preference
- May NOT be easily comprehensible by Other QS



Generate Report

- Quantity Summary Report may differ from Individual QS Submission



Read Drawing

- CAD Drawings
- BIM Model Direct Importation
- PDF – Converted to Colored Lines



BIM Cost Model

- Element Identification
- Trace & Draw Elements



Generate Report

- View Expressions (Deductions & standard-based formula)
- 3D Visualization Model
- Trackable Quantification

QTO in Different Stages



Read Drawing

Use Scale Ruler to measure Length

Tabulate Dimensions in Excel

Use Excel to create Formula & Deductions

Generate Report From Excel

Read Drawing

Measure Length/Area Quantity in 2D Software

Create Formula and Deductions

Generate Report From Excel

Read Drawing

Generate 3D BIM Cost Model

Calculate and Generate Report

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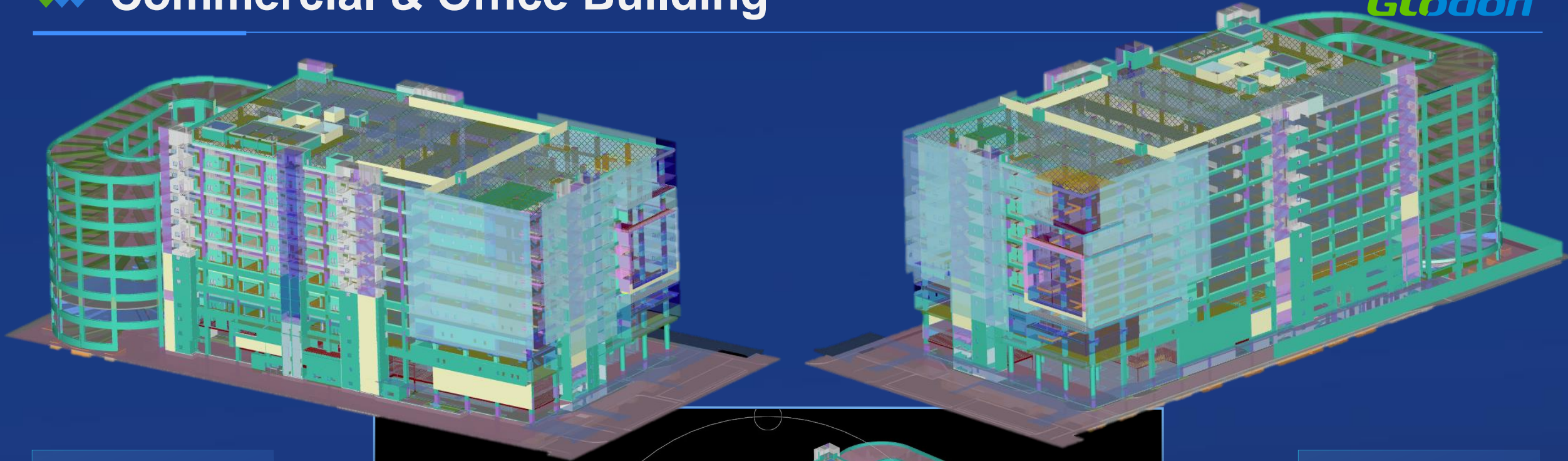
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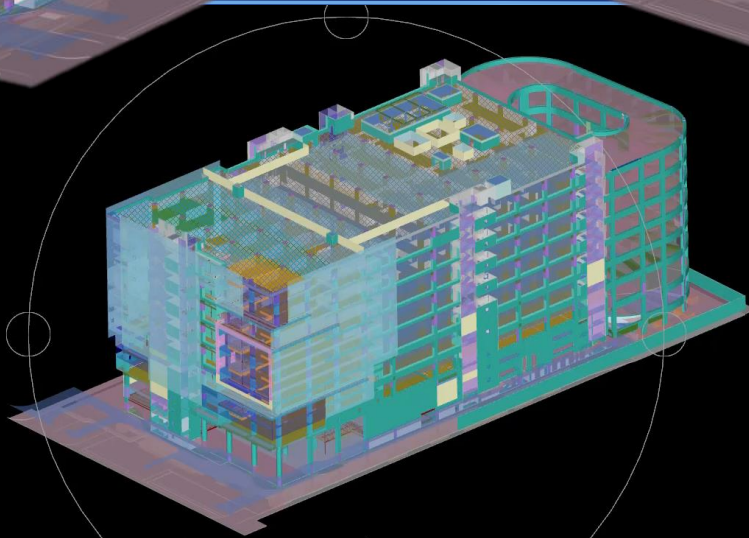
Commercial & Office Building

Glodon



73,000 m²

Finishes
Quantities are
Easy to
Quantify



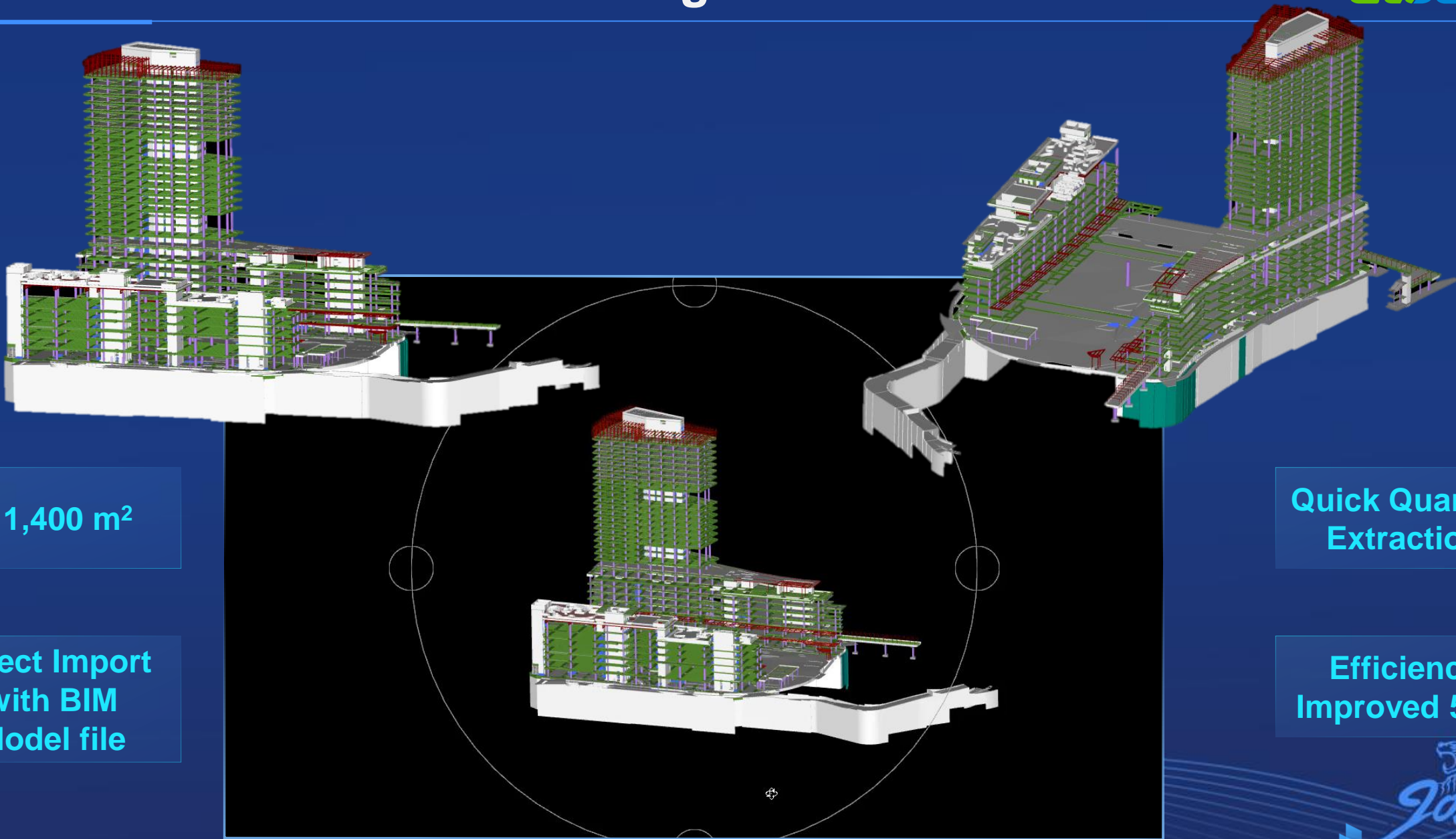
Completed
within 3 Days

Efficiency
Improved 60%

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Commercial & Office Building



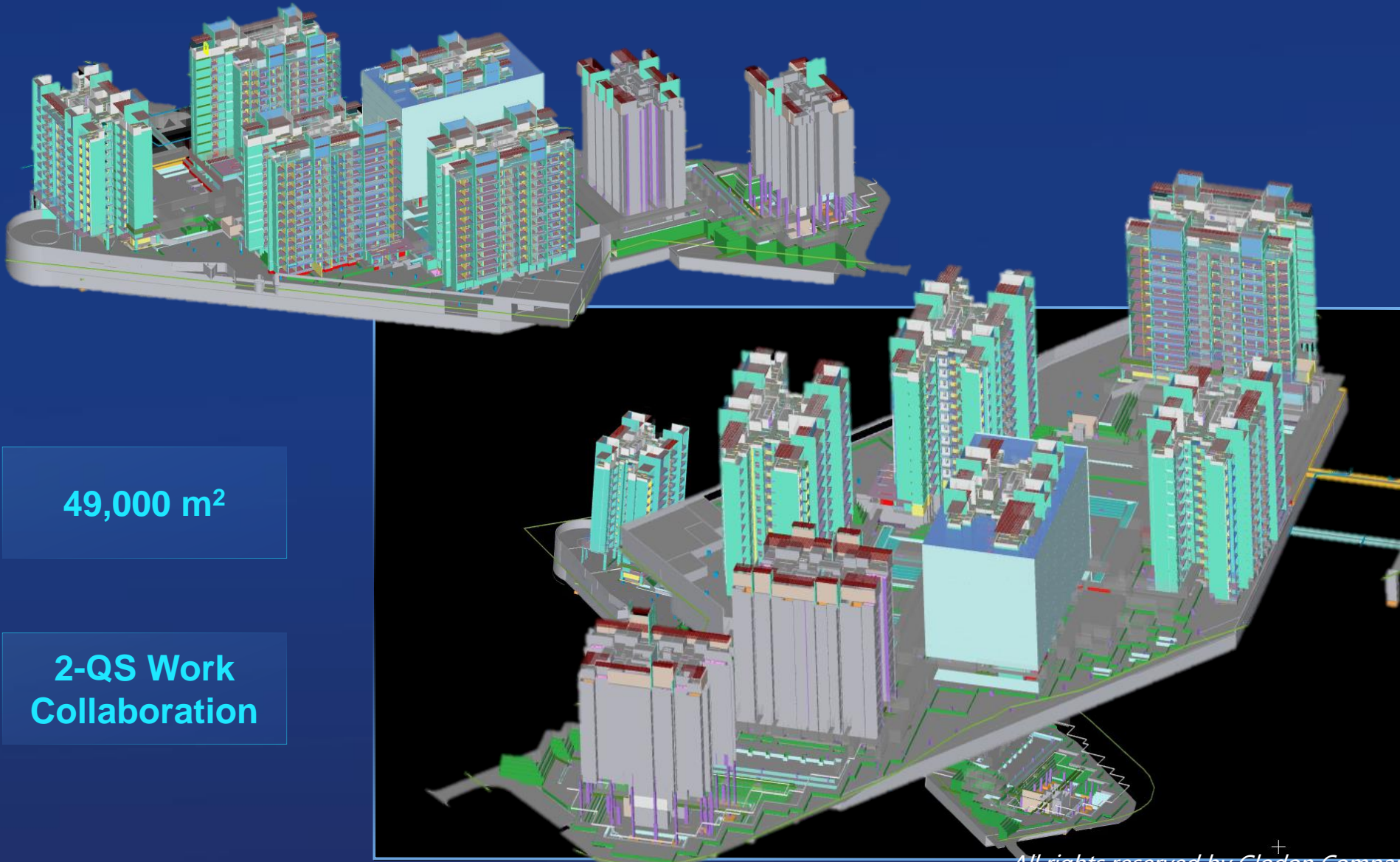
111,400 m²

Direct Import
with BIM
Model file

Quick Quantity
Extraction

Efficiency
Improved 50%

◆◆ Residential Condominium Development



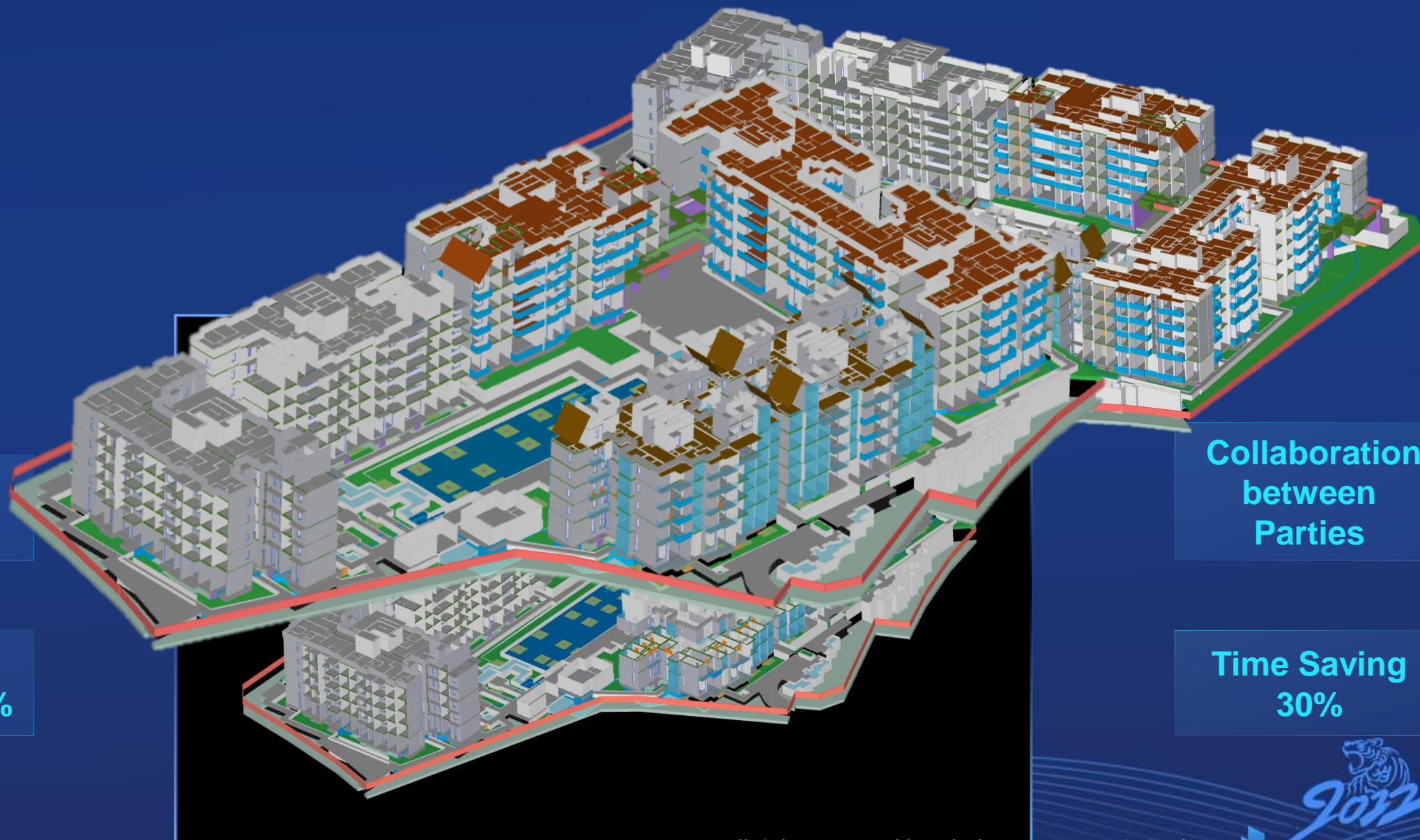
49,000 m²

2-QS Work
Collaboration

Element
Identification
Enhances QTO
process

Efficiency
Improved 30%

◆◆ Residential Condominium Development



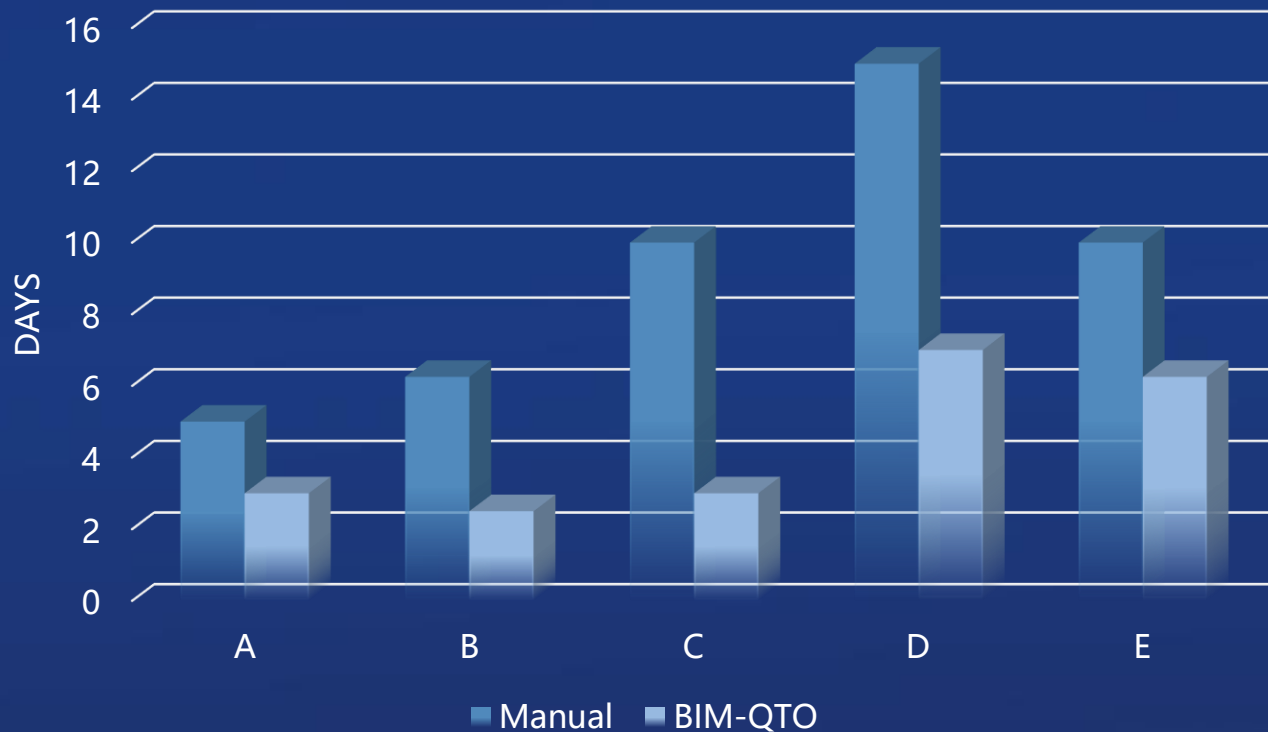
15,000 m²

Man-power
Saving of 50%

Collaboration
between
Parties

Time Saving
30%

MANUAL VS BIM-QTO

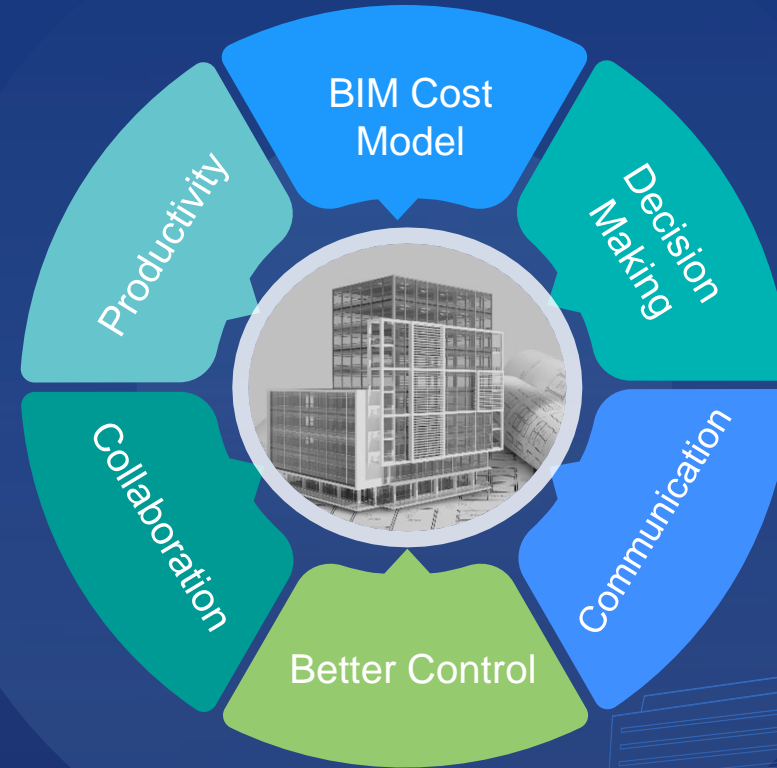


Empowerment of BIM-QTO

- Overall Efficiency Improvement in QTO process
- Enhancement of Quantity Accuracy
- Better Team Work Collaboration
- Better Decision Making



What 5D BIM-QTO Benefits Us?



Making Every Project A Success

Helping Every Practitioner Have Achievements

www.glodon.com/en/

THANK YOU



Get in Touch



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Glodon
Making Every Project A Success

