



BIM LIFECYCLE FOR KING ABDULLAH FINANCIAL DISTRICT PROJECT

TXG

TECHNICAL XPERTS GROUP

EMPOWERING EXPERTISE

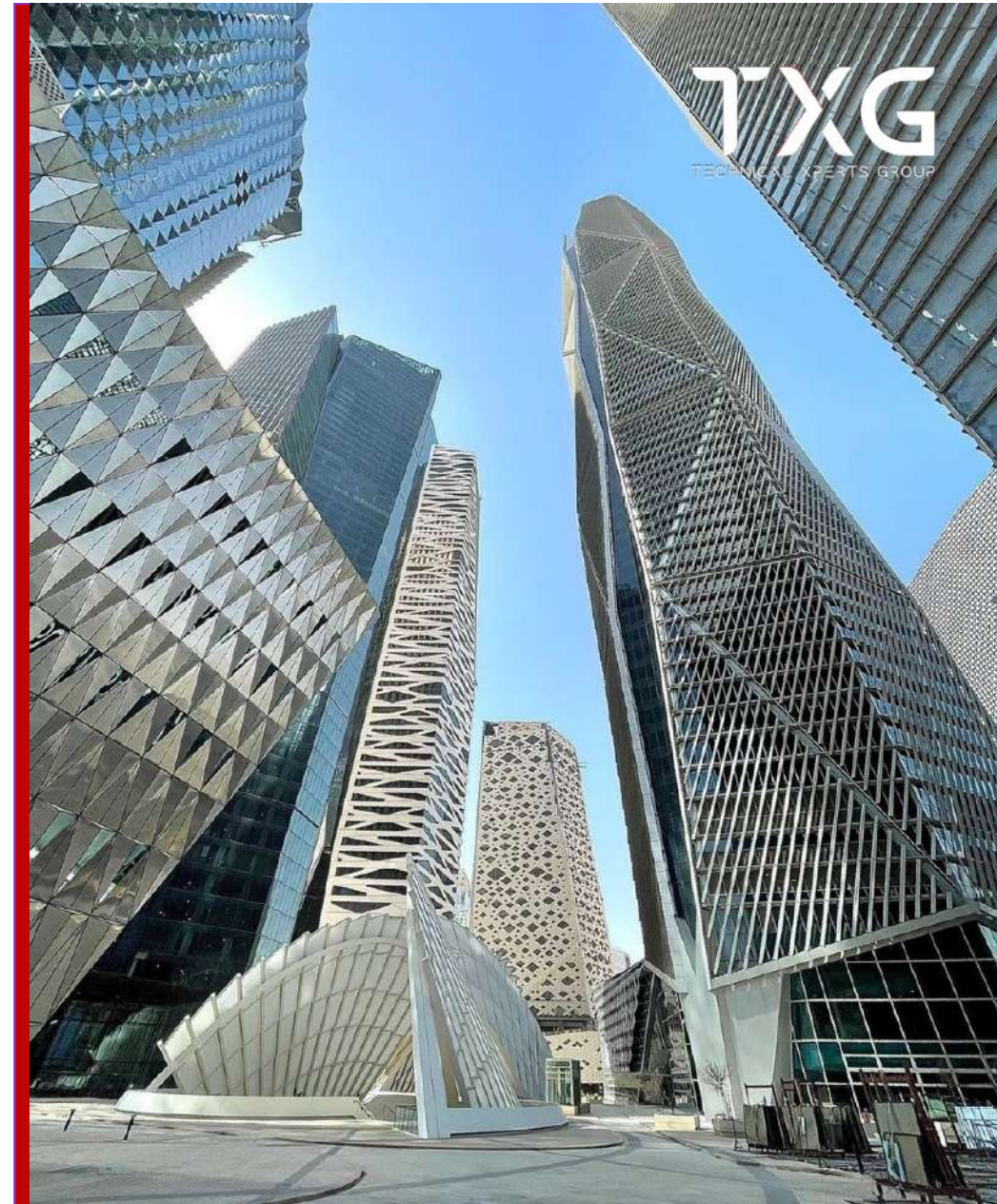
PREFACE

1. KAHD PHASE 3 PROJECT

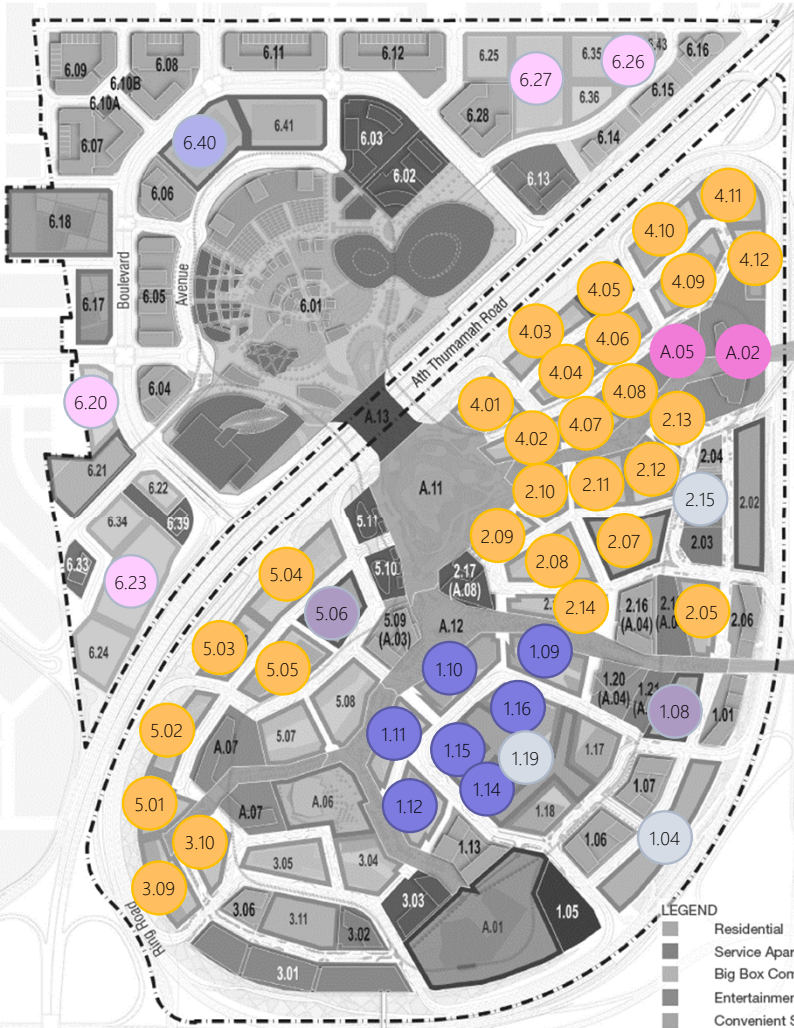
- PROJECT OVERVIEW
- EXECUTION METHODOLOGY
- DATA SAMPLES OF PARCEL EXECUTED

2. KAHD FUTURE PROJECT

- DIGITAL DELIVERY & BIM LIFECYCLE
- BIM REQUIREMENTS – ISO STANDARDS
- USE CASE OF BIM
- RECOMMENDATIONS



KAFD PHASE-3 PROJECT OVERVIEW



Entertainment 2 No	Mixed use 28 No	Parking 3 No	Utilities 4 No.	Offices 7 No.	Hotel 2 No.	Other uses (Data centre) 1 No
TOTAL - 47 Parcels						

LAND USE: Office			
No.	Parcels	Zone	Gross Floor Area
1	1.09	Area 1	1,05,538
2	1.1	Area 1	1,00,437
3	1.11	Area 1	57,376
4	1.12	Area 1	85,159
5	1.14	Area 1	1,30,686
6	1.15	Area 1	1,39,303
7	1.16	Area 1	2,01,260

LAND USE: Hotel			
No.	Parcels	Zone	Gross Floor Area
1	1.08	Area 1	54,246
2	5.06	Area 5	63,019

LAND USE: Utilities (District Cooling)			
No.	Parcels	Zone	Gross Floor Area
1	6.23	Area 6	4,095
2	6.27	Area 6	4,095

LAND USE: Entertainment			
No.	Parcels	Zone	Gross Floor Area
1	A.02	Area 1	75,858
2	A.05	Area 1	19,411

LAND USE: Parking			
No.	Parcels	Zone	Gross Floor Area
1	1.04	Area 1	98,986
2	1.19	Area 1	79,364
3	2.15	Area 2	33,971

LAND USE: Mixed Use			
No.	Parcels	Zone	Gross Floor Area
1	2.05	Area 2	48,138
2	2.07	Area 2	81,993
3	2.08	Area 2	61,546
4	2.09	Area 2	25,725
5	2.1	Area 2	35,332
6	2.11	Area 2	53,806
7	2.12	Area 2	72,910
8	2.13	Area 2	45,493
9	2.14	Area 2	69,553
10	3.09	Area 3	89,429
11	3.1	Area 3	57,504
12	4.01	Area 4	40,001
13	4.02	Area 4	35,943
14	4.03	Area 4	46,129
15	4.04	Area 4	56,348
16	4.05	Area 4	41,821
17	4.06	Area 4	63,798
18	4.07	Area 4	52,288
19	4.08	Area 4	53,137
20	4.09	Area 4	1,07,111
21	4.1	Area 4	61,665
22	4.11	Area 4	66,185
23	4.12	Area 4	50,196
24	5.01	Area 5	53,227
25	5.02	Area 5	43,572
26	5.03	Area 5	65,688
27	5.04	Area 5	86,975
28	5.05	Area 5	95,839

LAND USE: Other Uses (Data Centre)			
No.	Parcels	Zone	Gross Floor Area
1	6.4	Area 6	16,274

KAFD PHASE-3

(Ongoing)

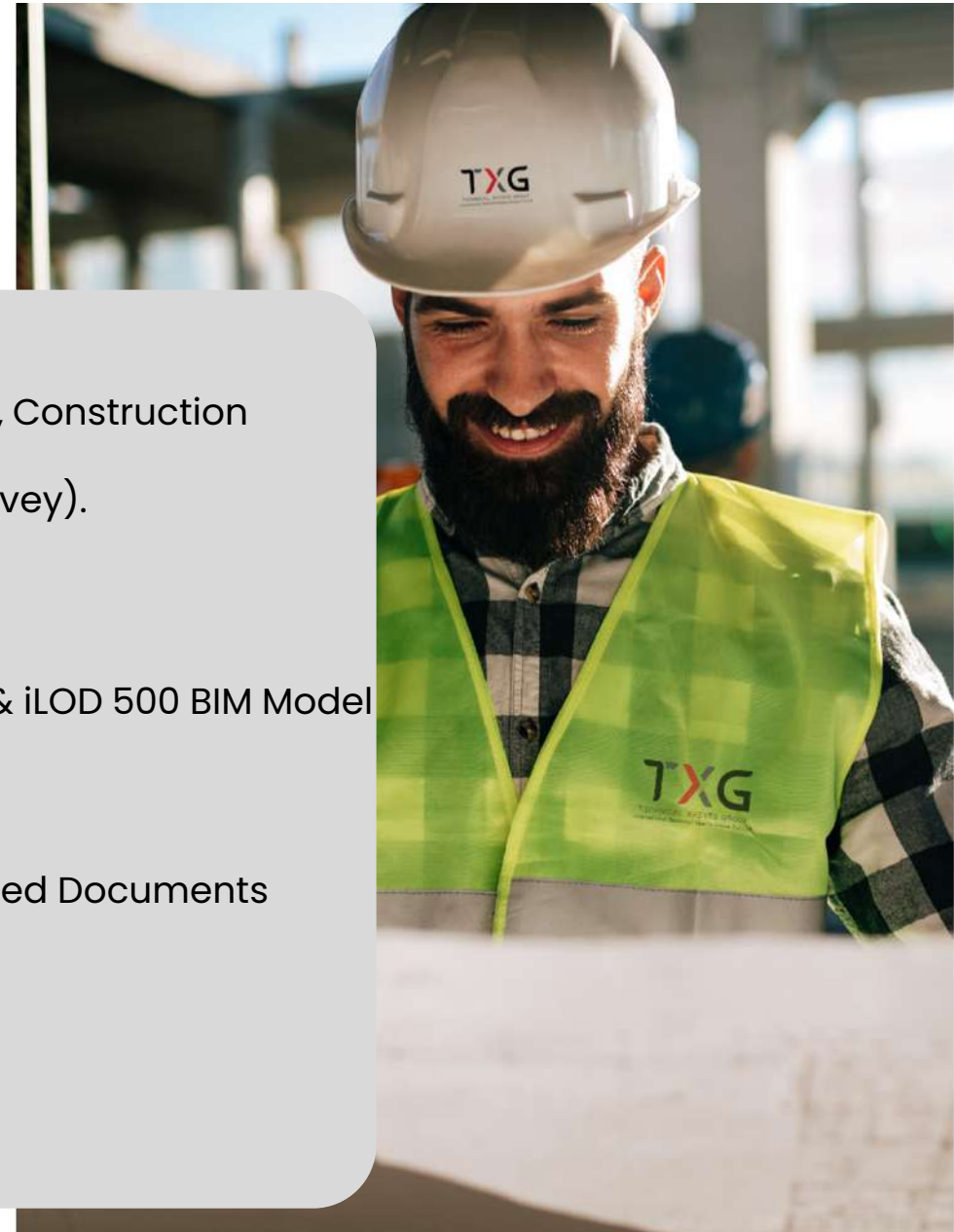
EXECUTION METHODOLOGY



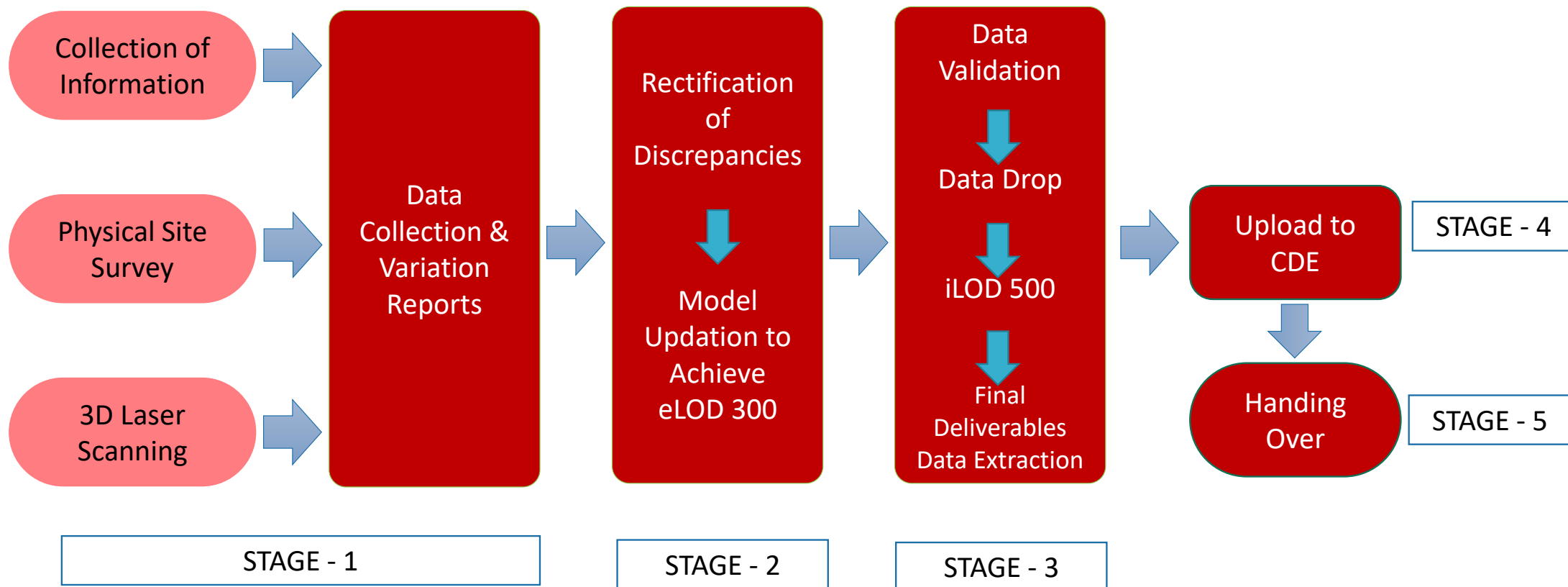
EXECUTION METHODOLOGY

STAGES OF ACTIVITIES

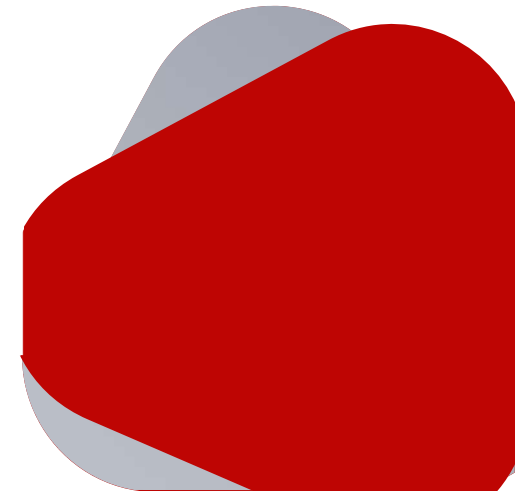
- **STAGE 1** – Data Collection and Reporting (Baseline BIM Model, Construction Handover Documentation, LiDAR scanning & Physical Site survey).
- **STAGE 2** – eLOD 300 Model Updates.
- **STAGE 3** – Data Validation, Asset Data Collection, Data Drop & iLOD 500 BIM Model Updates.
- **STAGE 4** – Preparation of Final Deliverables, Model & Associated Documents Upload to CDE.
- **STAGE 5** – Handing Over & Approval



EXECUTION METHODOLOGY – OVERVIEW



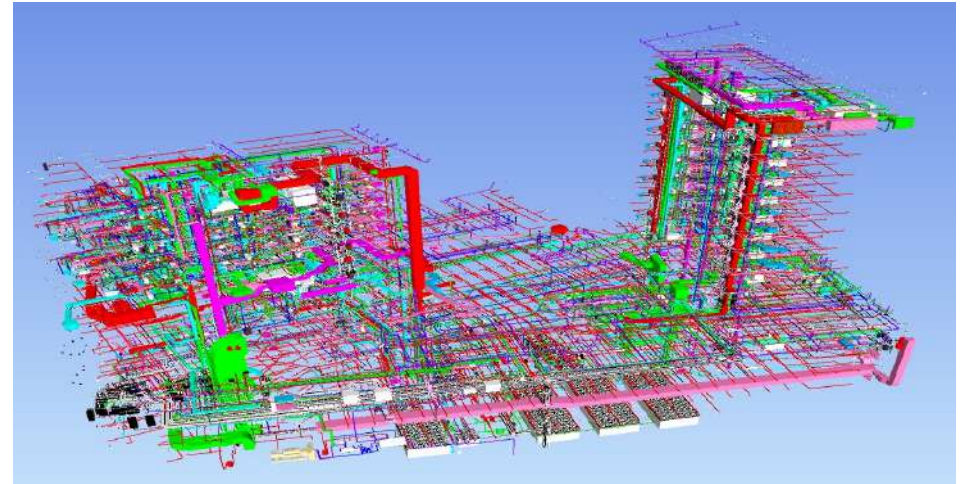
EXECUTION METHODOLOGY- VIDEO



KAFD SAMPLE PARCEL EXECUTED– 2.05



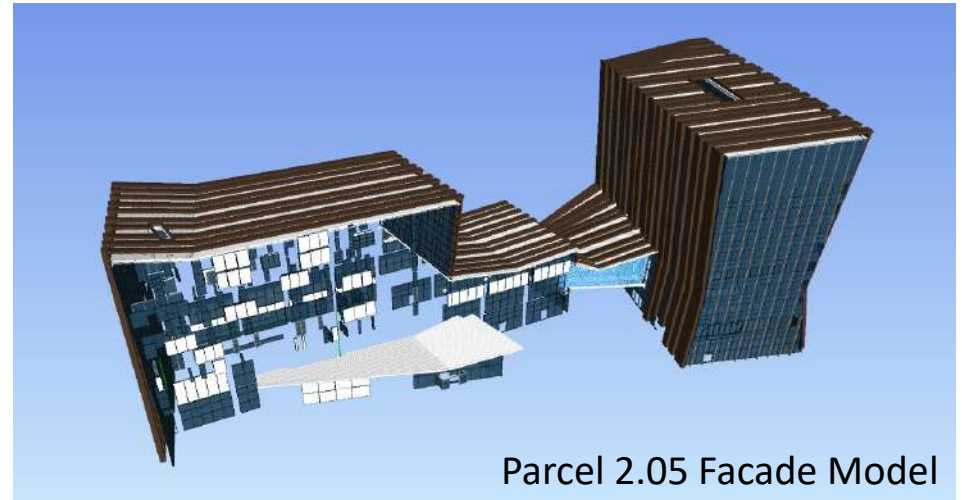
3D Rendered image of 205 from BIM Model



Parcel 205 MEP BIM Model



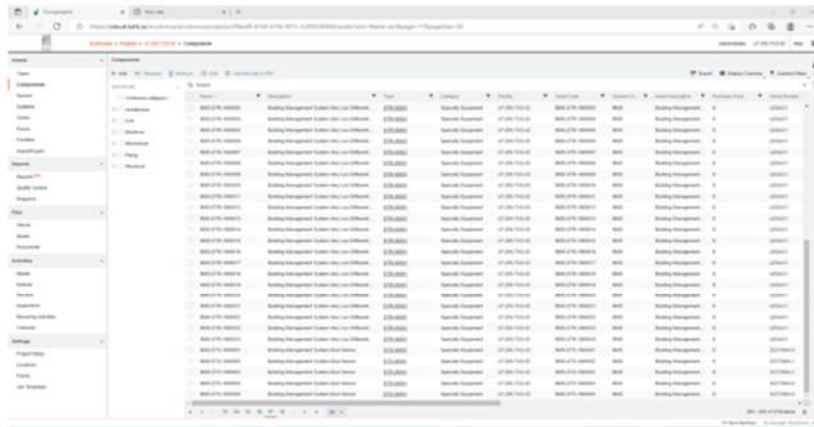
Parcel 2.05 ASI Model



Parcel 2.05 Facade Model

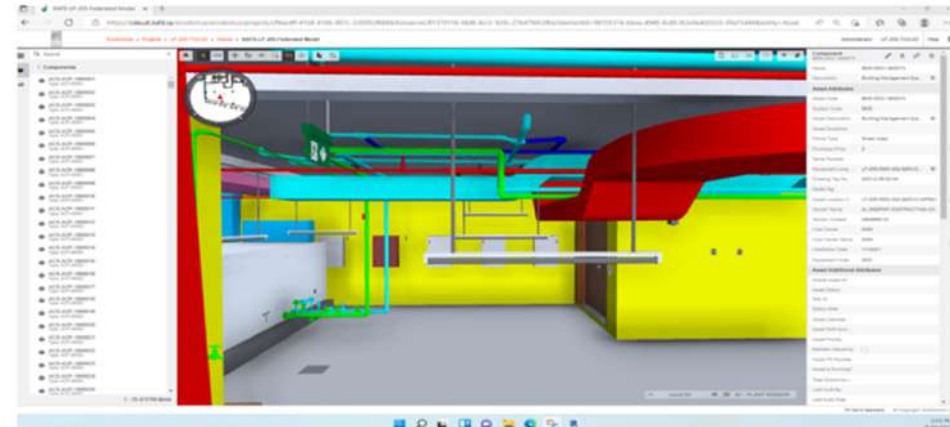
KAFD SAMPLE PARCEL EXECUTED- 2.05

Ecodomus Final deliverables Upload – Parcel 2.05



This screenshot displays the 'Overall View' of the KAFD software interface. It features a hierarchical tree on the left side, listing various project components. The main area is a table with columns for 'Name', 'Status', 'Type', 'Category', 'Sub-category', 'Parent', 'Child', 'Status', 'Type', 'Category', 'Sub-category', 'Parent', and 'Child'. The table contains multiple rows of data, likely representing different project tasks or components.

Overall View

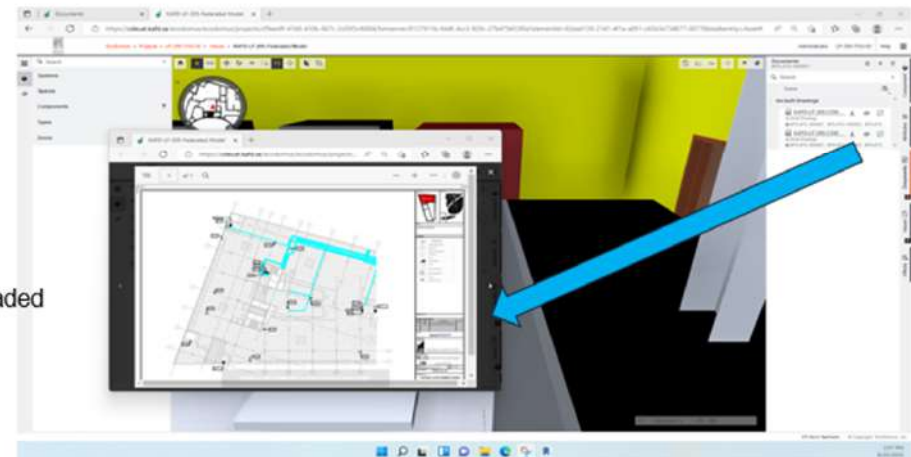


3D view



Equipment View

List Of Documents Uploaded



Document Opened View

BIM IMPLEMENTATION FOR KAJD FUTURE DEVELOPMENTS

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DIGITAL DELIVERY

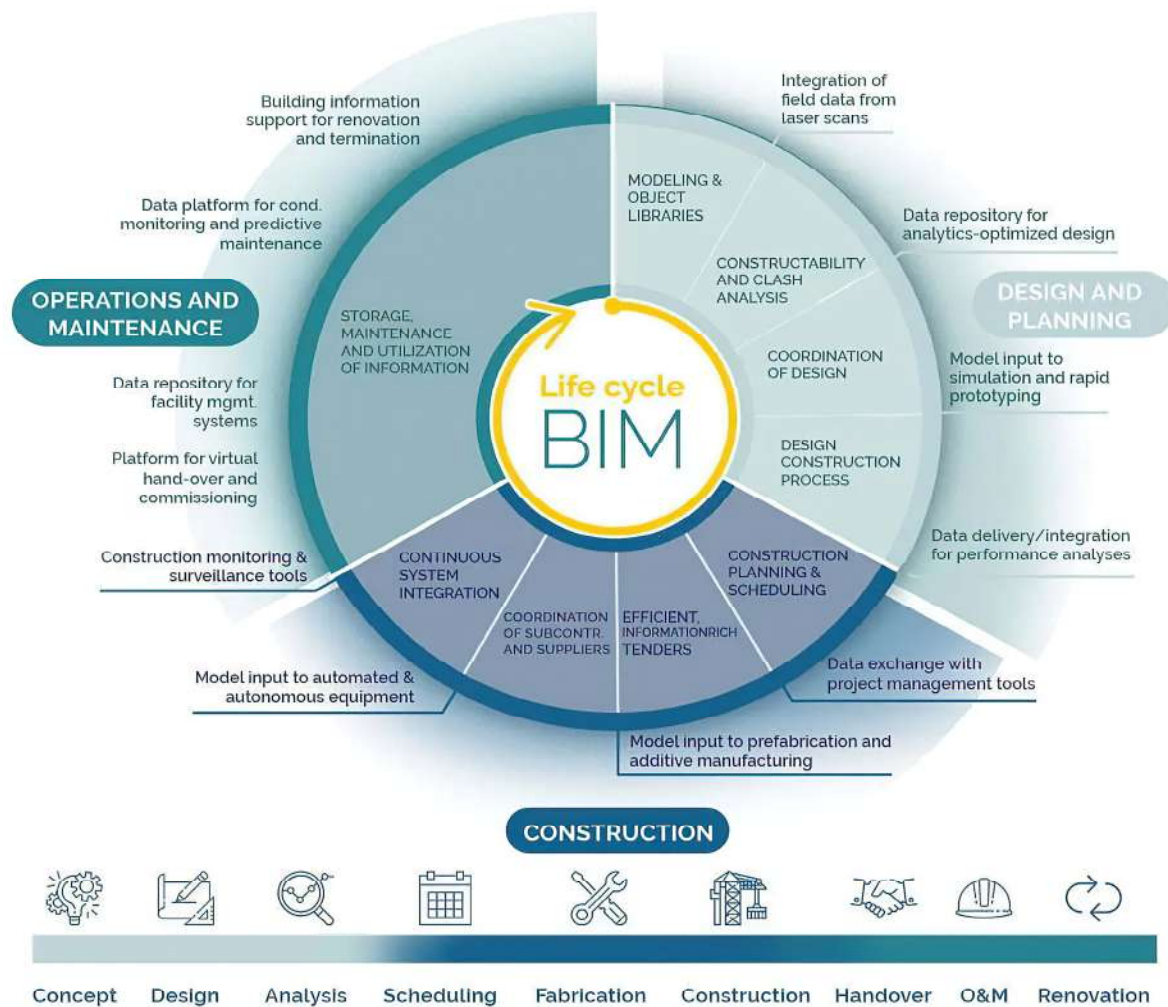


Digital Delivery is the application of data technology in the delivery process in all aspects of a project from design to Operation



Building Information Modelling (BIM) is one of the most powerful digital tools that benefits every phase of the project lifecycle, including Design, Construction Management, Handover and Operations.

BIM LIFECYCLE



EXECUTION METHODOLOGY





BIM INFORMATION REQUIREMENTS AS PER ISO STANDARDS

ISO STANDARDS



BIM FRAMEWORK

[BS EN ISO 19650-1](#): *Organization and digitization of information about buildings and civil engineering works, including building information modelling -- Information management using building information modelling: Concepts and principles.*

[BS EN ISO 19650-2](#): *Organization and digitization of information about buildings and civil engineering works, including building information modelling -- Information management using building information modelling: Delivery phase of the assets.*

[BS EN ISO 19650-3:2020](#) *Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM). Information management using building information modelling. Operational phase of the assets.*

[BS EN ISO 19650-4:2022](#) *Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM). Information management using building information modelling - Information exchange*

[BS EN ISO 19650-5:2020](#): *Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM). Information management using building information modelling. Security-minded approach to information management.*



ISO STANDARDS – INFORMATION REQUIREMENTS

Requirements Framework During Strategic & Concept Phase.

OIR (Organizational Information Requirements) are high-level requirement defined by a company concerning their assets, business operation and departments.

AIR (Asset Information Requirements) is the precise description of the information required to operate and maintain a specific built asset through its life cycle. The information required in AIR focuses on the as-built state

ISO STANDARDS – INFORMATION REQUIREMENTS

Requirements Framework During Design & Construction Project Delivery Phase.

PIR (Project Information Requirements) At the start of any project the requirements need to be established by the Client. The following are the information covered mainly.

- Information delivery milestones.
- Project's information standards.
- Project's information production methods and procedures.
- Project's reference information and shared resources.
- Project's common data environment.
- Project's information protocol.
- Information assessment and Validation.

EIR (Exchange Information Requirements) EIRs focus on what information is expected to be delivered, the timing or frequency of delivery and the acceptance criteria that the client or asset owner/operator will use to judge if the information is acceptable.

The Pre-contract BIM Execution Plan is designed to address the Employer's information requirement (EIR). The pre-contract BIM Execution Plan should address everything requested in the EIR and set out the Project Implementation Plan (PIP), project goals for collaboration and information modelling and key project milestones and where they fit with the broader project program. It should also set out how the project 's information model will be assembled and delivered.

WORKFLOW BASED on ISO STANDARD

ASSESSMENT AND NEED

INVITATION TO TENDER

TENDER RESPONSE

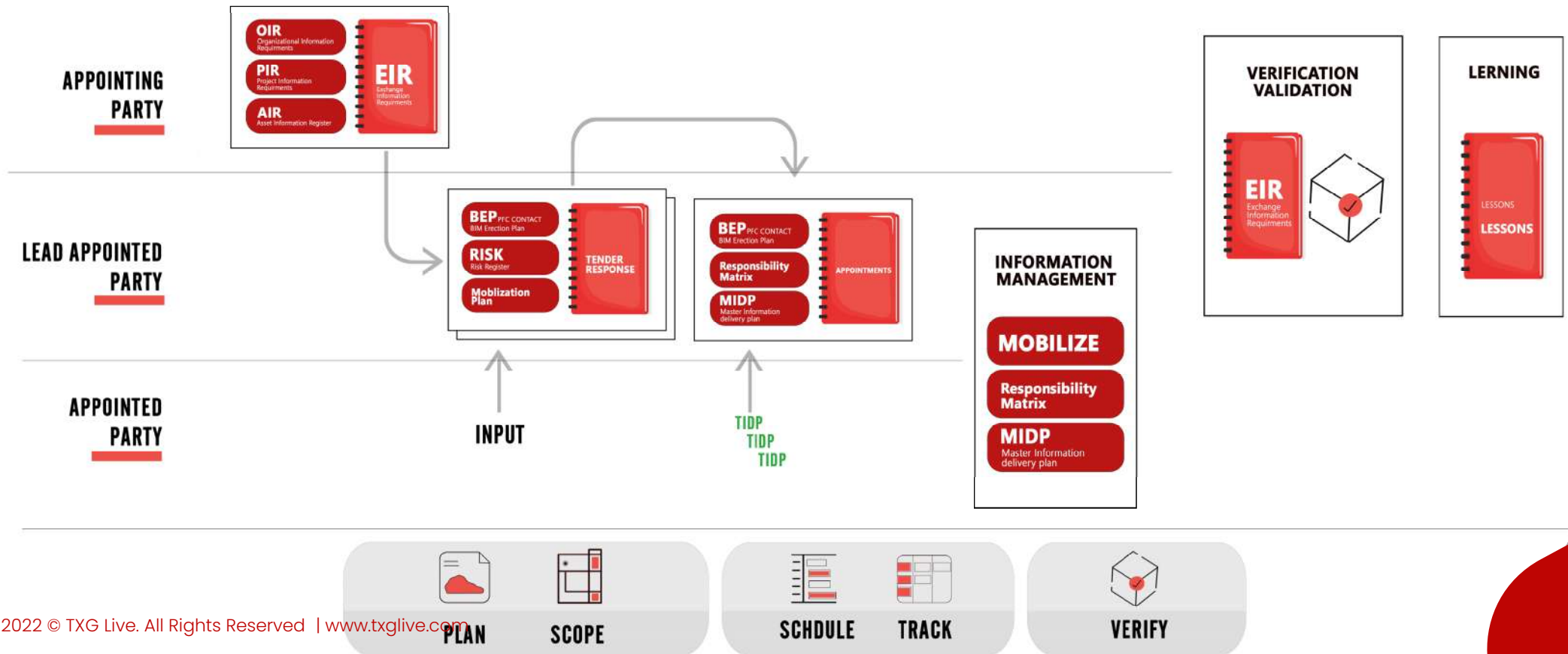
APPOINTMENT

MOBILIZATION

COLLABORATIVE
INFORMATION PRODUCTION

INFORMATION
DELIVERY MODEL

PROJECT CLOSE-OUT



USE CASE OF BIM

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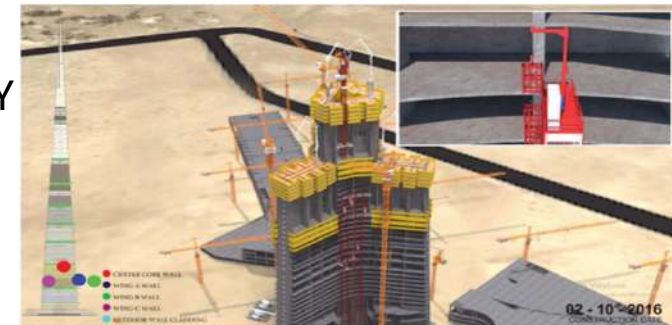
BIM FOR DESIGN

- 3D VISUALIZATION ,ANIMATIONS, RENDERINGS AND VIRTUAL WALKTHROUGH
- INTERDISCIPLINARY CLASH DETECTION AND RESOLUTION
- IMMERSIVE EXPERIENCE (AR, VR & XR)
- Engineering analysis (Lighting, Energy & Performance)



BIM FOR CONSTRUCTION

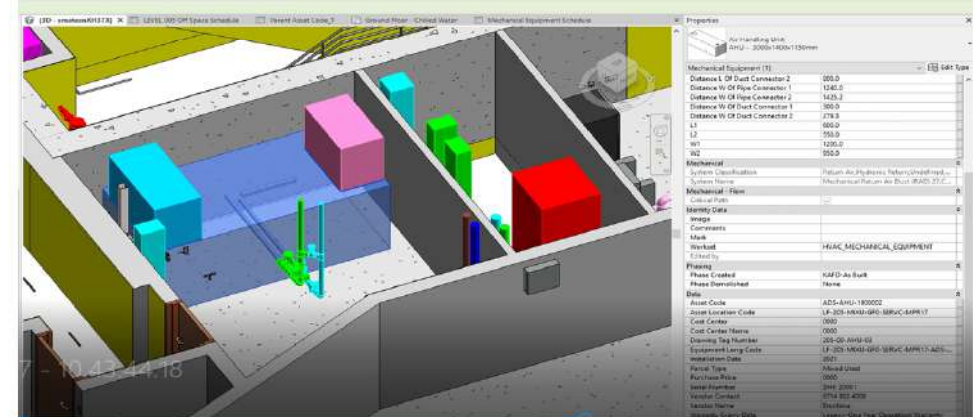
- CONSTRUCTION SIMULATION & PLANNING – 4D
- COST MODEL ANALYSIS – 5D
- BIM TO FIELD (ROBOTIC STATIONS, AUGMENTED REALITY, EXTENDED REALITY AND VIRTUAL REALITY)
- LIDAR SCANNING FOR QUALITY INSPECTIONS, AS-BUILT UPDATE AND PROGRESS MONITORING (SCAN TO BIM)
- DIGITAL HANDOVER OF PROJECTS



BIM FOR FACILITY MAINTENANCE /OPERATIONS



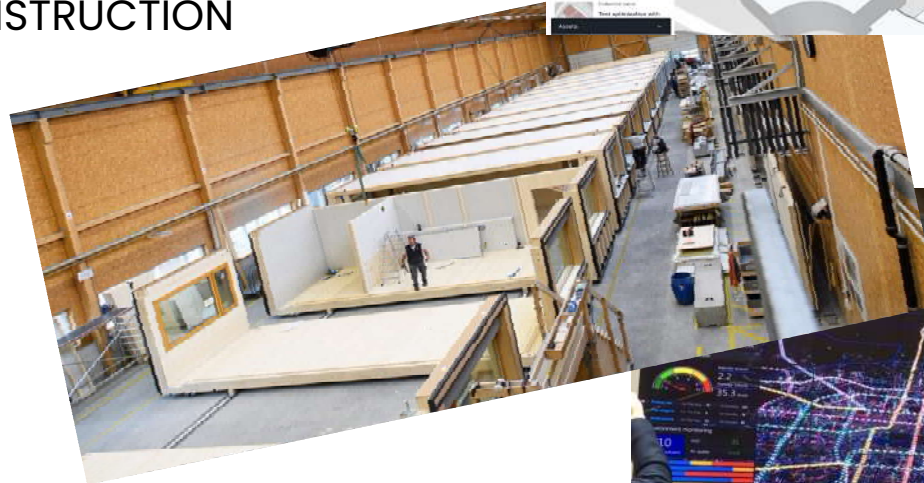
- CAFM IMPLEMENTATION (COBie)
- ASSET MANAGEMENT & DIGITAL ASSET REGISTRY.
- DIGITAL TWIN INTEGRATION FOR EFFICIENT OPERATIONS
- IOT/BMS INTEGRATION FOR REAL TIME MONITORING.

A screenshot of a data table showing asset information. The table has columns for 'Asset ID', 'Asset Name', 'Asset Type', 'Asset Location', 'Asset Status', and 'Asset Date'. The data is organized into rows, with some rows highlighted in red and others in green. The table is part of a larger software interface, with the TXG logo visible in the top right corner.

Asset ID	Asset Name	Asset Type	Asset Location	Asset Status	Asset Date
1000000001	Building Management System-Hwy Lane Diffusers	Specialty Equipment	LP 200-1000-00	1000-000001	1000-000001
1000000002	Building Management System-Hwy Lane Diffusers	Specialty Equipment	LP 200-1000-00	1000-000002	1000-000002
1000000003	Building Management System-Hwy Lane Diffusers	Specialty Equipment	LP 200-1000-00	1000-000003	1000-000003
1000000004	Building Management System-Hwy Lane Diffusers	Specialty Equipment	LP 200-1000-00	1000-000004	1000-000004
1000000005	Building Management System-Hwy Lane Diffusers	Specialty Equipment	LP 200-1000-00	1000-000005	1000-000005
1000000006	Building Management System-Hwy Lane Diffusers	Specialty Equipment	LP 200-1000-00	1000-000006	1000-000006
1000000007	Building Management System-Hwy Lane Diffusers	Specialty Equipment	LP 200-1000-00	1000-000007	1000-000007
1000000008	Building Management System-Hwy Lane Diffusers	Specialty Equipment	LP 200-1000-00	1000-000008	1000-000008
1000000009	Building Management System-Hwy Lane Diffusers	Specialty Equipment	LP 200-1000-00	1000-000009	1000-000009
1000000010	Building Management System-Hwy Lane Diffusers	Specialty Equipment	LP 200-1000-00	1000-000010	1000-000010
1000000011	Building Management System-Hwy Lane Diffusers	Specialty Equipment	LP 200-1000-00	1000-000011	1000-000011
1000000012	Building Management System-Hwy Lane Diffusers	Specialty Equipment	LP 200-1000-00	1000-000012	1000-000012
1000000013	Building Management System-Hwy Lane Diffusers	Specialty Equipment	LP 200-1000-00	1000-000013	1000-000013
1000000014	Building Management System-Hwy Lane Diffusers	Specialty Equipment	LP 200-1000-00	1000-000014	1000-000014
1000000015	Building Management System-Hwy Lane Diffusers	Specialty Equipment	LP 200-1000-00	1000-000015	1000-000015
1000000016	Building Management System-Hwy Lane Diffusers	Specialty Equipment	LP 200-1000-00	1000-000016	1000-000016
1000000017	Building Management System-Hwy Lane Diffusers	Specialty Equipment	LP 200-1000-00	1000-000017	1000-000017
1000000018	Building Management System-Hwy Lane Diffusers	Specialty Equipment	LP 200-1000-00	1000-000018	1000-000018
1000000019	Building Management System-Hwy Lane Diffusers	Specialty Equipment	LP 200-1000-00	1000-000019	1000-000019
1000000020	Building Management System-Hwy Lane Diffusers	Specialty Equipment	LP 200-1000-00	1000-000020	1000-000020

ADVANCEMENT IN BIM INDUSTRY

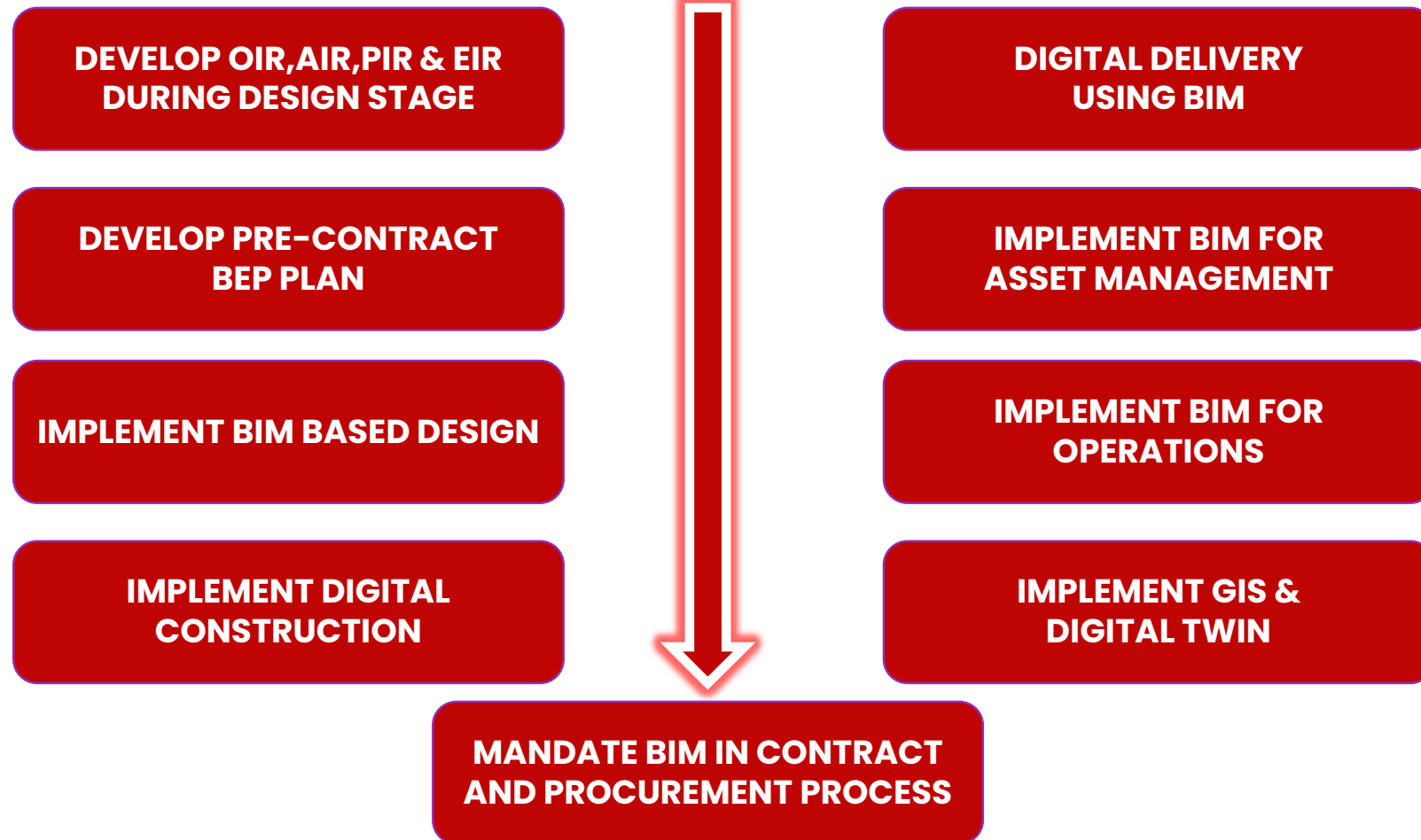
- GIS INTEGRATION
- PRE-FABRICATION & MODULAR CONSTRUCTION
- SMART CITY INTEGRATION



RECOMMENDATIONS



RECOMMENDATIONS



Q & A





TECHNICAL XPERTS GROUP

Thank You

Technical Xperts Group

VDC/BIM Team