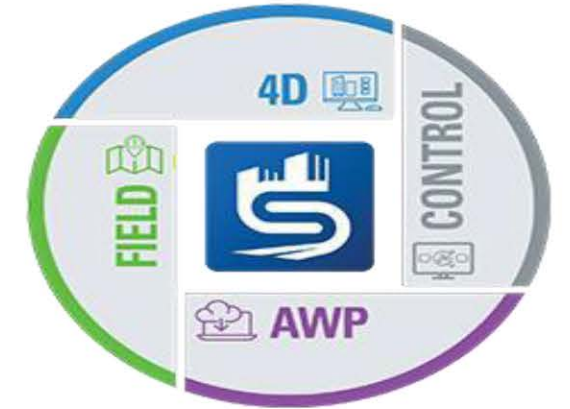
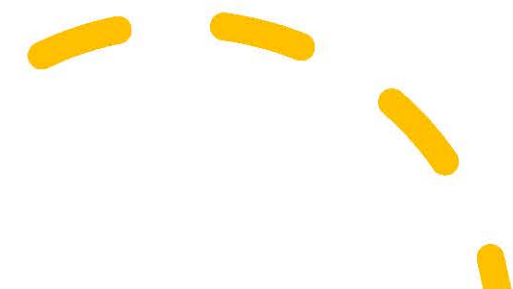




4D Construction Planning Using **SYNCHRO PRO**



Omar Habib
4D Planning Specialist



MEET YOUR INSTRUCTORS

Omar Habib



- Senior 4D Planning , Power BI Expert and Project Controls Specialist passionate about BIM and Project Controls with deep expertise in reports and dashboard development, creating reports and visual, interactive dashboards using Tableau and Power BI.
- Work collaboratively with business stakeholders to understand their analytical needs and provide insightful 4D and 5D reporting solutions.
- He has worked with large multinational construction and development companies to deliver a range of building and infrastructure projects across the Middle East UAE, KSA, Qatar, and Egypt worked on +25 BIM projects in the infrastructure, commercial building, residential, oil, and gas sectors.



AGENDA

1

Introduction to 4D/5D Construction Planning

2

SETTING EXPECTATIONS

3

Training Outcomes

4

Prerequisites

5

Training Schedule

4D Construction Planning



SYNCHRO 4D

4D Construction Planning

4D planning is an industry practice that combines two deliverables many project teams already have: the project schedule and a 3D model. The 4D model allows stakeholders to visualize their schedule in a 3D space, which empowers engagement, communication, and decision making throughout the project lifecycle.



4D Construction Planning

- 4D planning is a promising tool for the construction industry. It demonstrates clear benefits for project planning, which would not be possible with the more traditional methods commonly used in the industry.

The implementation of 4D allows planners to create more realistic programs and break down any miscommunication between what is planned and what is executed. High-quality BIM-based design and staff training is a worthwhile investment which will provide great benefits throughout the project lifecycle.

- BIM and 4D is not a trend, but a way of working that is here to stay. BIM and 4D planning is the future for project success.



Benefits of Construction Simulation

Benefits of Construction Simulation

1

Powerful Visualization of Construction Process (Problem Forecast before construction)

Visualization

2

Improved Construction Planning Management (Better Understanding of Project Milestones)

Improved Planning

3

Improve Construction Productivity (Reduced Cost & Error)

Construction Productivity

4

Efficient Logistics Management (Resolving Space Conflicts)

Logistics Management

5

Effective Project & Risk Management (Monitoring Plan & Tracking the Actual Progress)

Tracking the Actual Progress

SYNCHRO 4D PRO

SYNCHRO 4D PRO

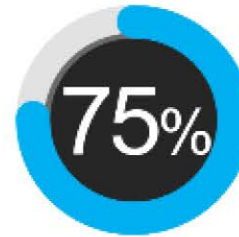
- SYNCHRO Pro is the leading 4D construction modeling application delivered in SYNCHRO 4D, enabling model-based scheduling and simulations. Improve safety, quality and cost throughout the project lifecycle
- Virtual construction isn't about project simulations, SYNCHRO Pro gives teams a medium to create, analyze, edit, report and manage projects through a single visual interface.
- SYNCHRO Pro enables teams to improve quality, safety, productivity, and efficiency of construction projects around the world.



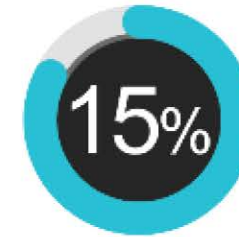
Improve safety



Reduce labor
cost

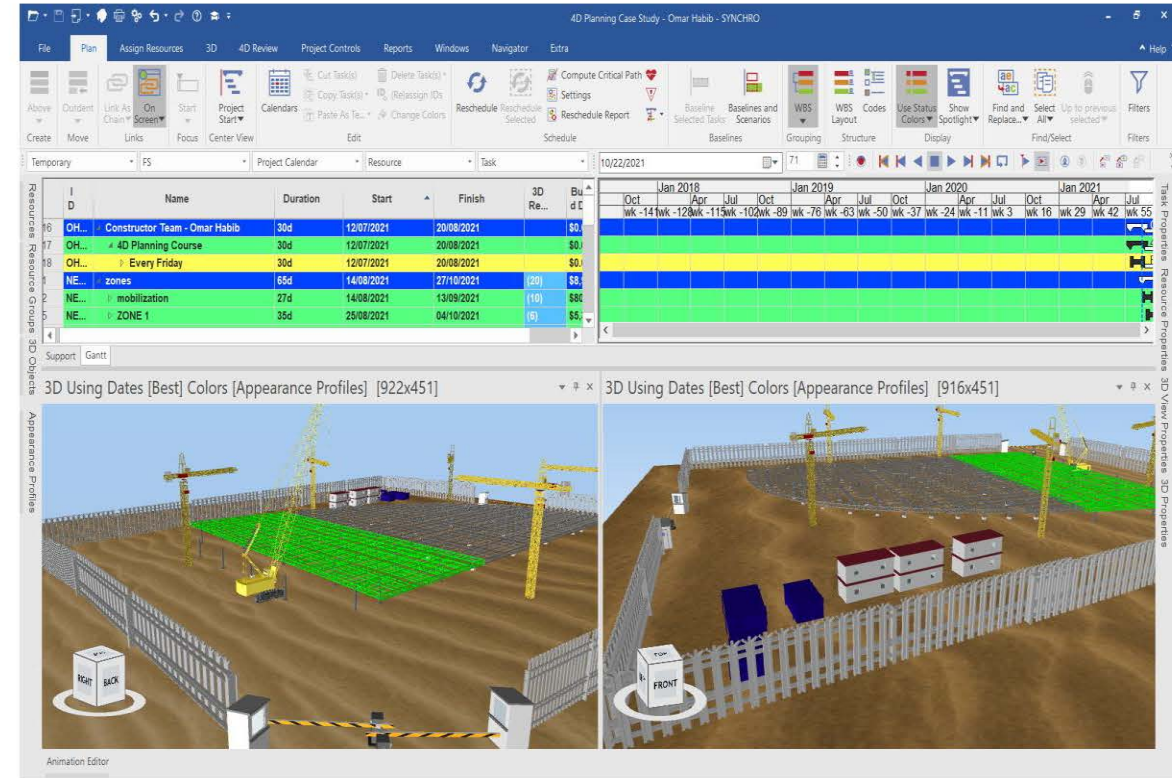


Increase field
labor
productivity



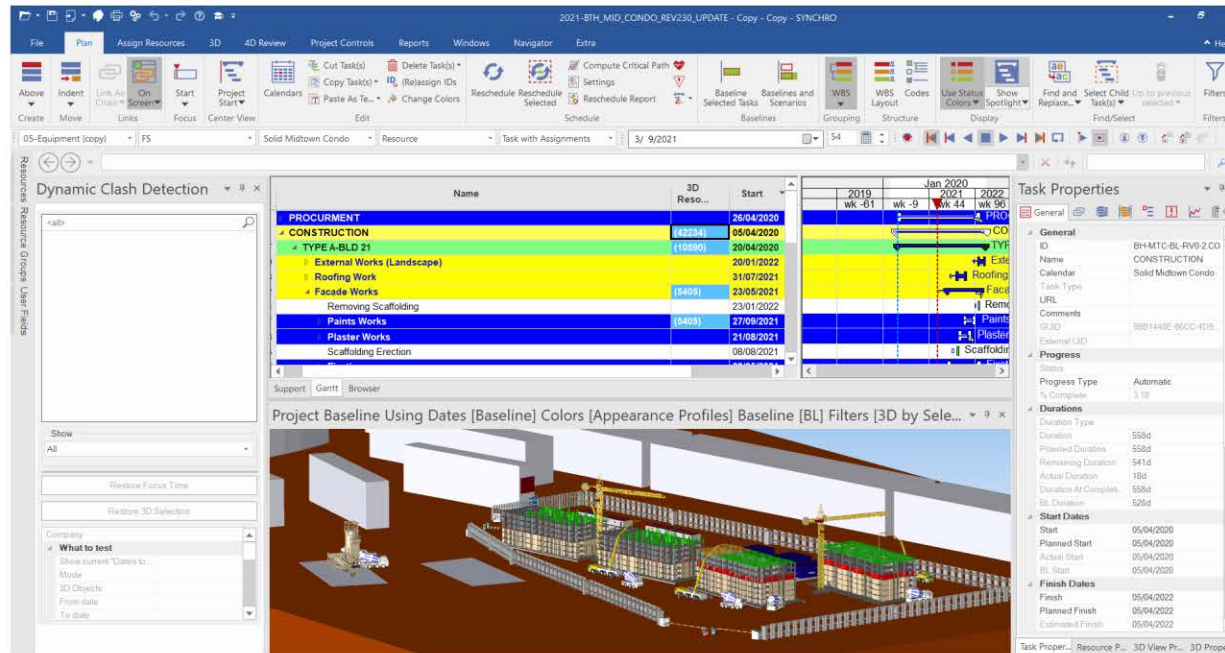
Reduce
schedule time

- SYNCHRO 4D is a real-time cloud solution that enables digitally enhanced construction planning and operations.
- The only platform that interoperates with all major 3D modeling and scheduling tools in the market, you can count on SYNCHRO 4D to handle your most complex construction projects. Take advantage of virtual construction, planning, and model-based workflows.



SYNCHRO 4D PRO

Put a Synchro PRO 4D schedule in your next schedule review meeting and see how the dynamics change. Regardless of the level of experience, everyone sees the same project including logistics and temporary works, they discover concurrent and unsafe work, they can analyze a variety of approaches and identify the impact, they want to as because communication is clear and easy and their voice matters.



SYNCHRO Construction Solution's Products

LANGUAGES AVAILABLE

- ✓ English
- ✓ Chinese
- ✓ Russian
- ✓ Arabic
- ✓ Polish
- ✓ Portuguese
- ✓ French
- ✓ Korean
- ✓ Spanish
- ✓ Turkish

WHO USES SYNCHRO PRO?

- ❖ Owners
- ❖ contractors
- ❖ Subcontractors
- ❖ Specialty suppliers
- ❖ Consultants
- ❖ CAD/BIM Service Providers

PROJECT TYPES

- ❖ Buildings
- ❖ Infrastructure
- ❖ Roads and Bridges
- ❖ Healthcare Facilities
- ❖ Industrial Processes
- ❖ Oil & Gas
- ❖ Power & Energy
- ❖ Marine & Mining

SYNCHRO Pro Benefits

SYNCHRO Pro Benefits

Enabling digital transformation to empower people to find the best solutions for every construction challenges.

- Leverage SYNCHRO 4D's unique ability to auto-match your BIM model to your schedule, updating your construction plan in 4D in a matter of minutes
- Reduce cost variance by using comprehensive resource management and see planned versus installed quantity tracking, project and contractor earned value, or critical paths.
- Lead progress review meetings using the 4D model as the central hub of information for clear, collaborative, and productive planning and decision-making with all stakeholders.
- Deliver a safe project by reviewing the virtual jobsite as it changes over time, identifying risks, and resolving them.



SYNCHRO Pro Benefits

Enabling digital transformation to empower people to find the best solutions for every construction challenges.

- Reduce your schedule variance with visual look-ahead reports that identify activities, work areas, and equipment, allowing you to view your task list by contractor or work package.
- Plan for safety hazards and risks before you start work at the jobsite using dynamic spatial coordination analysis that identifies work area overlap, overhead crane risks, and potential for obstruction delays.
- Improve schedules and deliver a well-managed project by creating schedules that everyone can understand. The visual medium of computer animated graphics drives visibility and transparency
- Create real-time digital feedback loops between the field and the office for improved productivity tracking, helping you understand where everyone is at any given time.



SETTING EXPECTATIONS



SYNCHRO 4D

SETTING EXPECTATIONS

- SYNCHRO Fundamentals provides a four-s full experience covering the basic topics of SYNCHRO PRO, from beginner to intermediate level.
- It is focused on teaching the essential skills in using the SYNCHRO PRO productively at an introductory level for project implementation.
- The Fundamental course will use a building model to demonstrate and practice SYNCHRO PRO features.
- The course is designed for new users or experienced users who need a refresher to warm up the SYNCHRO knowledge.
- The training materials designed to explain SYNCHRO PRO tools on a construction project. However, you can apply the same steps to any other type of project without any issues

MAIN TOPICS

MAIN TOPICS

1. **SESSION 01**
Understanding the
Synchro interface
and navigation

2. **SESSION 2**
Controlling the
time schedule

3. **SESSION 03**
Controlling the 3D
model

4. **SESSION 04**
4D Linking Process

5. **SESSION 05**
Filtering, Auto-
Matching and
Animating Equipment

6. **SESSION 06**
Exporting 4D
Reports

6 Sessions

3.5 hours each

2 Times pre week

Total hour 20 Hours

WHO SHOULD ATTEND



SYNCHRO 4D

WHO SHOULD ATTEND

This is a practical course, designed for all engineers looking for a practical, hands-on, and highly engaging approach to learning 4D construction Planning using 4D SYNCHRO PRO.



Project Controls Managers



Project Managers



BIM Managers



Planning Engineers



Cost Control Engineers



Project Engineers



BIM Engineers



**Construction Management
Students**

Training Outcomes



SYNCHRO 4D

Training Outcomes

- By the end of the training, the participants will understand the basic functions of SYNCHRO and will be able to create their 4D models and export the sequenced images or animations for project team review and presentation.
- Enable teams to be operational in BIM projects.
- Develop capabilities and create full understanding of the relevant software.
- Learn how to create 4D construction sequence models by linking objects to schedule activities in planning tools (P6).
- Learn major features of Synchro for project management, animation, and presentation.
- Learn how to import scheduling and model data, schedule tasks and visualize them with Gantt charts, track progress, and create animations based on tasks
- Learn how to interpret a model breakdown structure (MBS) and work breakdown structure (WBS).

Training Outcomes

- Enable review of 4D construction sequence models developed by design consultants and contractors.
- Learn to spot items that are delayed or out of sequence in a 4D model.
- Link schedule data to actual project progress and track delayed items.
- Create, assign and track project tasks across all stakeholders and project team members.
- Ability to create and adjust appearance profiles.
- Learn to change colors on modelled items to reflect their status.
- Ability to share scheduling reports.
- Learn to export to paper, PDF, and image and video files.
- Training materials.

Prerequisites



SYNCHRO 4D

- No prior training is required
- Basic understanding of planning software (P6)
- Access to planning software and data
- Hardware suitable for running BIM application
- Software installed

Prerequisites

- Hardware suitable for running BIM application

| MINIMUM SYSTEM REQUIREMENTS | |
|-----------------------------------|--|
| Operating System: | Windows 7 (X64), 8 (X64) Or 10 (X64) |
| Processor: | Intel ® Core ™ i7-3840QM CPU @ 2.80GHz 2.80 GHz |
| Installed memory (RAM): | 16GB (x64) |
| System type: | 64-Bit Operating System |
| Pen and touch: | No Pen or Touch Input is required |
| Display adapters: | 1 GB graphics card (DirectX compatible) |
| Display adapters driver: | Supported graphics card and drivers for HOOPs 20.x are at: http://developer.techsoft3d.com/hoops/hoops-visualize/graphics-cards/ |
| Disk drive (program file): | 1.3 GB hard disk space for installation files |
| Disk drive (project file): | 1 GB for each typical project files |
| Display: | 1 Colour display |
| Screen Resolution: | 1280 x 1024 screen resolution |

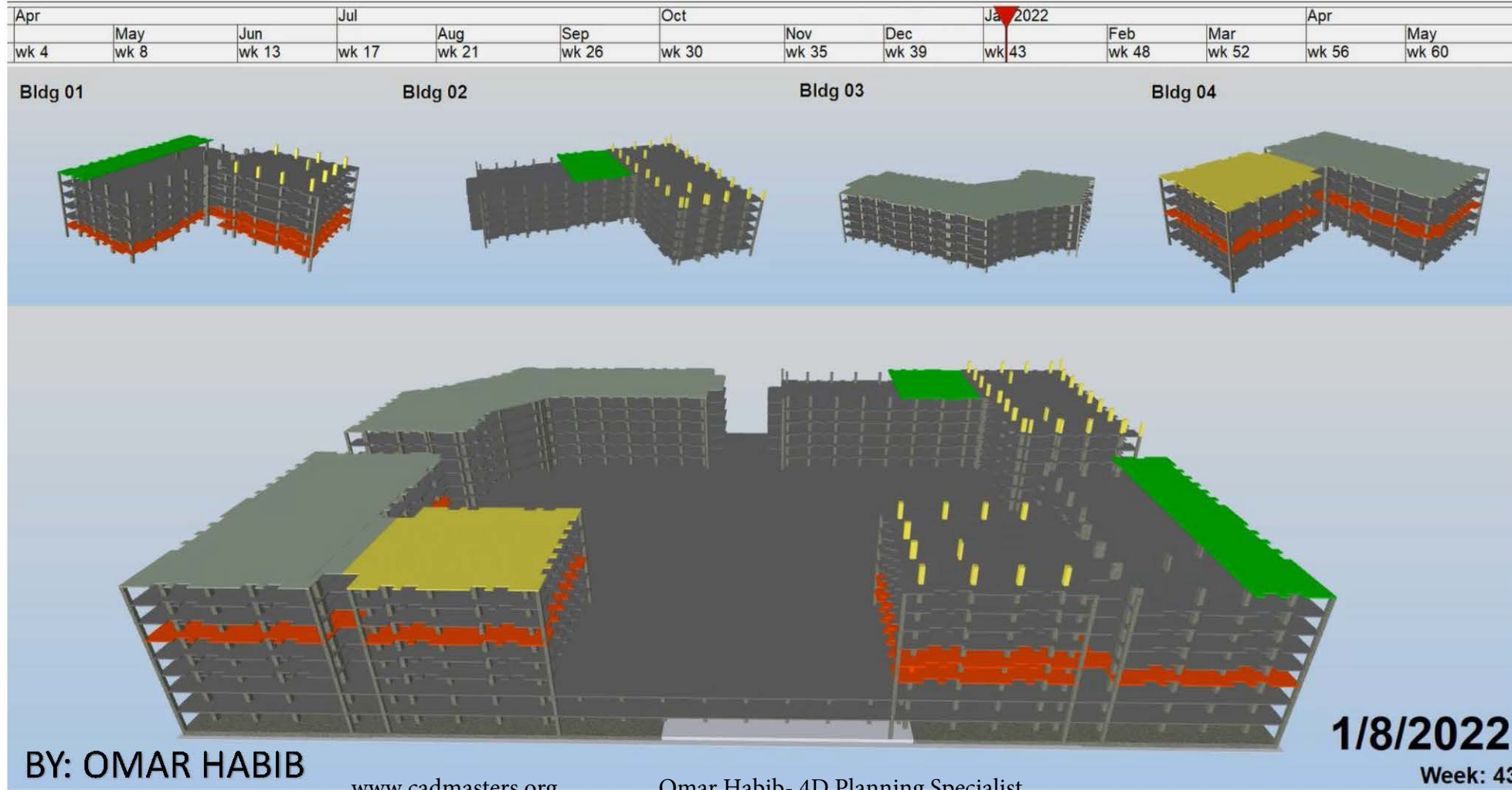
Reports Sample



SYNCHRO 4D

4D/5D Reports Sample

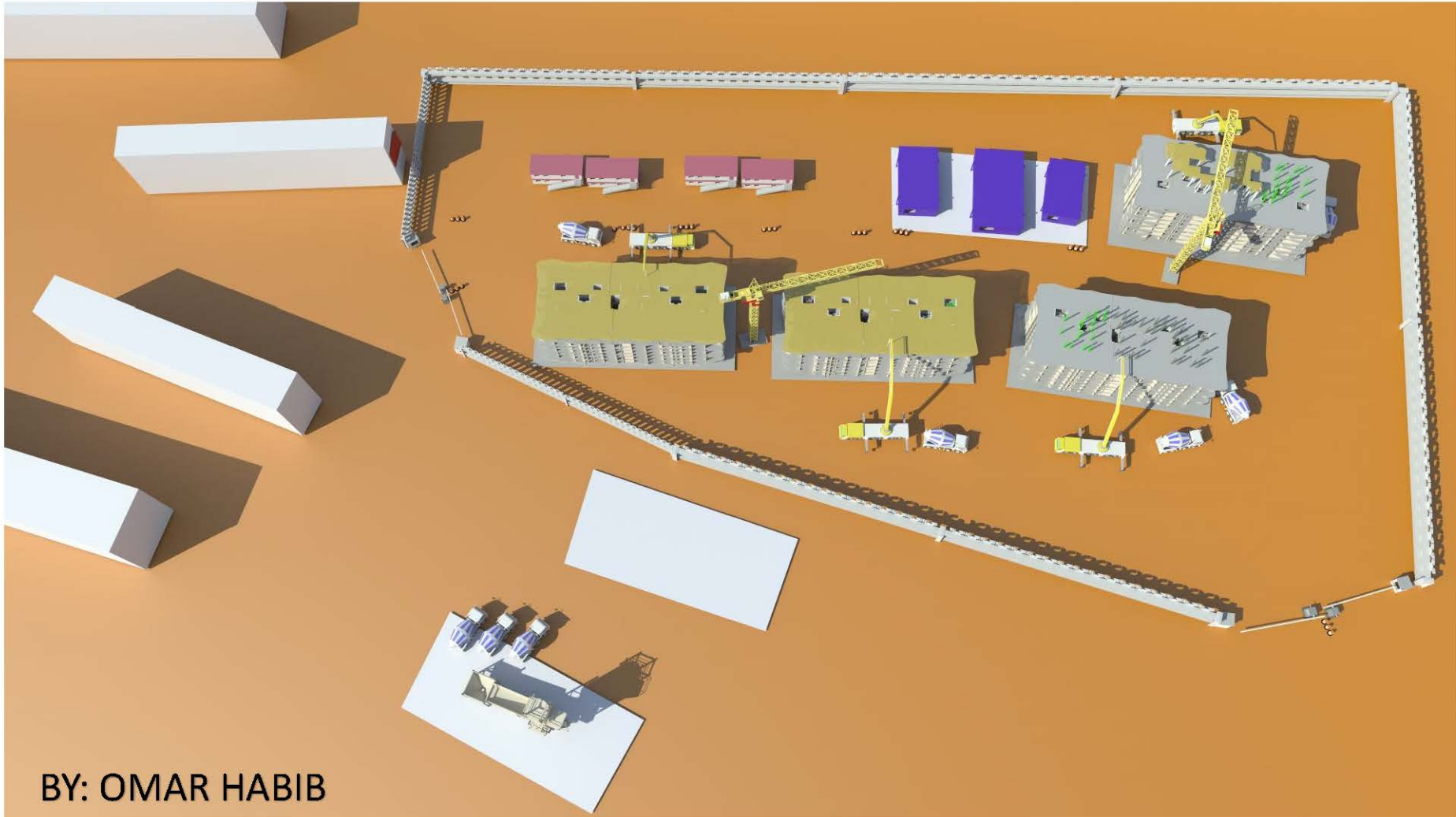
4D Construction Simulation



4D/5D Reports Sample



4D/5D Reports Sample



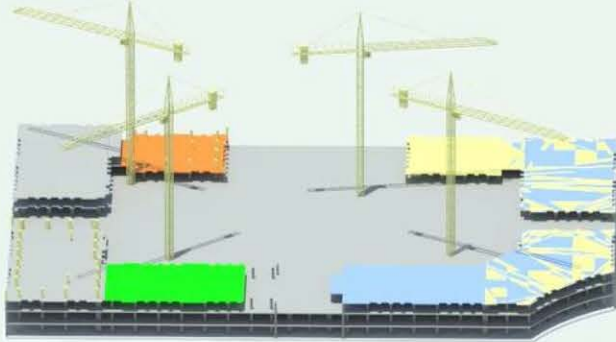
BY: OMAR HABIB

4D/5D Reports Sample


| | | | | | | | | | | | | | |
|------|------|-------|-------|-------|-------|-------|-------|-------|----------|-------|-------|-------|-------|
| Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan 2022 | Feb | Mar | Apr | May |
| wk 4 | wk 8 | wk 13 | wk 17 | wk 21 | wk 26 | wk 30 | wk 35 | wk 39 | wk 43 | wk 48 | wk 52 | wk 56 | wk 60 |

4D Construction Simulation


BY: OMAR HABIB



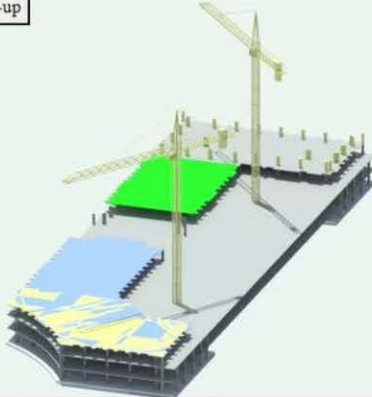
Critical Activities




2 Weeks Lookahead



Zone 2 Follow-up





29/07/2021

Week: 20

| Revision | | |
|----------|-------------|------|
| No. | Description | Date |
| | | |
| | | |
| | | |
| | | |

| 4D/5D PLANNING REPORT | |
|-----------------------|--|
| PROJECT NO. | |
| REPORT TYPE | |
| REPORT DATE | |
| SUBMITTED BY | |
| REVIEWED BY | |
| APPROVED BY | |

Any Questions