

IMPROVING LABOR PRODUCTIVITY WITH ADVANCED WORK PACKAGING (AWP)

Olfa Hamdi
Concord Project Technologies Inc. / CEO
The AWP Institute / Founder

NIA | National Insulation
Association[®]

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WHY PRESENT AWP AT NIA?

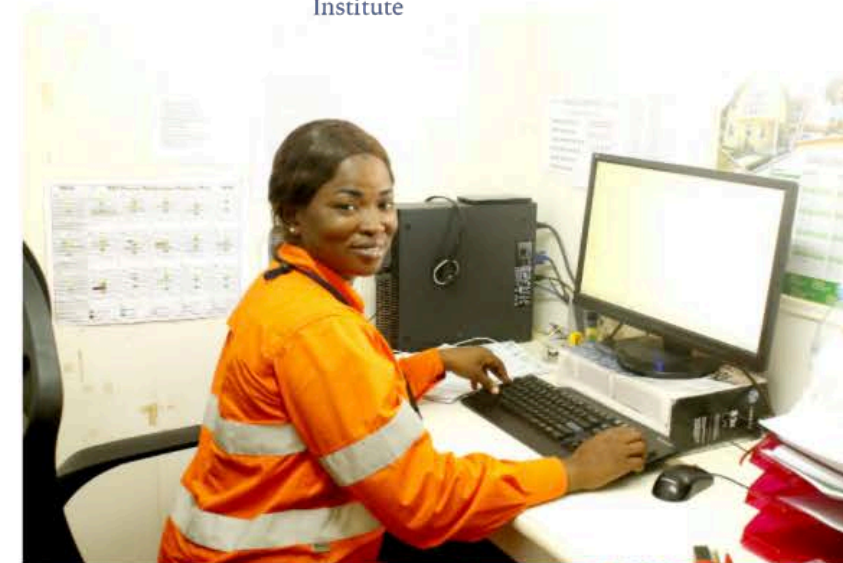
- The role of discipline contractors is underestimated, yet very important
- Performance improvement can be led by specialty industries
- Productivity is key to margin/profits
- A robust understanding of how to execute in an AWP environment gives discipline contractors a competitive advantage



Safety Moment

Distractions & “Deep Work”

- Working remotely or with social distancing leads to communication being primarily conducted via IT means.
- Constant distractions (notification driven) from calls, emails, Teams, chat solutions tend to challenge our ability to be productive which leads to a frustration about our own sense of achievement
- Distractions are addictive and put an extra burden on our minds to produce the same quality of work or learn new things
- This could lead to extra burden and mental stress that gets magnified in a pandemic era where ways of entertainment are limited.
- Suggestions:
 - turn off notifications on some devices
 - Block deep work time in your calendar
 - Do not carry the lack of productivity of yesterday to today



OLFA HAMDI



Olfa Hamdi is a global expert in the strategic, construction-driven planning and execution of capital projects. She is an American-trained engineer, inventor, and Silicon Valley entrepreneur who founded the [Advanced Work Packaging Institute](#) before co-founding Concord Project Technologies in 2016. Olfa is a recognized international researcher in the field of project management and a credited co-author of the three-volume industry bible on Advanced Work Packaging implementation. She holds a Master of Science in Capital Project Management from The University of Texas at Austin, a Master of Science in Engineering from Ecole Centrale de Lille, and a graduate degree in Alternative Dispute Resolution for construction disputes from Texas School of Law. She is also a fellow of the State Bar of Texas Construction Law section.

> OUR STRATEGIC PRIORITIES IN SERVING OUR CLIENTS:

PREDICTABILITY. KNOWLEDGE. EMPOWERMENT.

Our Vision: 100% of our clients manage every capital project with an accurate predictable outcome.

Our Mission: To be the premier choice for all companies striving to achieve the ultimate on-time, and on-budget delivery of capital projects.

Point of Production: Palo Alto, California, Washington D.C.

Selected Project Operations: California, Texas, Louisiana, Canada, France, Egypt, Saudi Arabia.

Services: Project Predictability Package™, Enterprise Predictability Package™, AWP Transformation Strategic Planning and implementation support, Training, Coaching, Consulting, Technology Advisory Services





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VELOCITY

INNOVATION AND LEADERSHIP FOR CAPITAL PROJECTS

VELOCITY INTERVIEWS
Your Project Predictability Breakthrough with Arno Jansen



THE CAPITAL PROJECT PREDICTABILITY ISSUE

PREDICTABLE PROJECTS

FRESH IDEAS FOR DELIVERING CAPITAL PROJECTS ON-TIME AND ON-BUDGET

EDITORIAL
Olfa Hamdi: Chaos in Capital Projects is Bad for Business

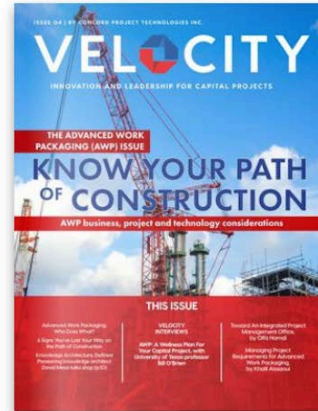


THIS ISSUE

HOW PREDICTABILITY THINKING™ REVEALS INVISIBLE THREATS
P. 08

EXECUTIVE PERSPECTIVE: The Key To Capital Project Performance
P. 10

DEEP WORK
The Productivity Solution for Capital Project Engineers
P. 14

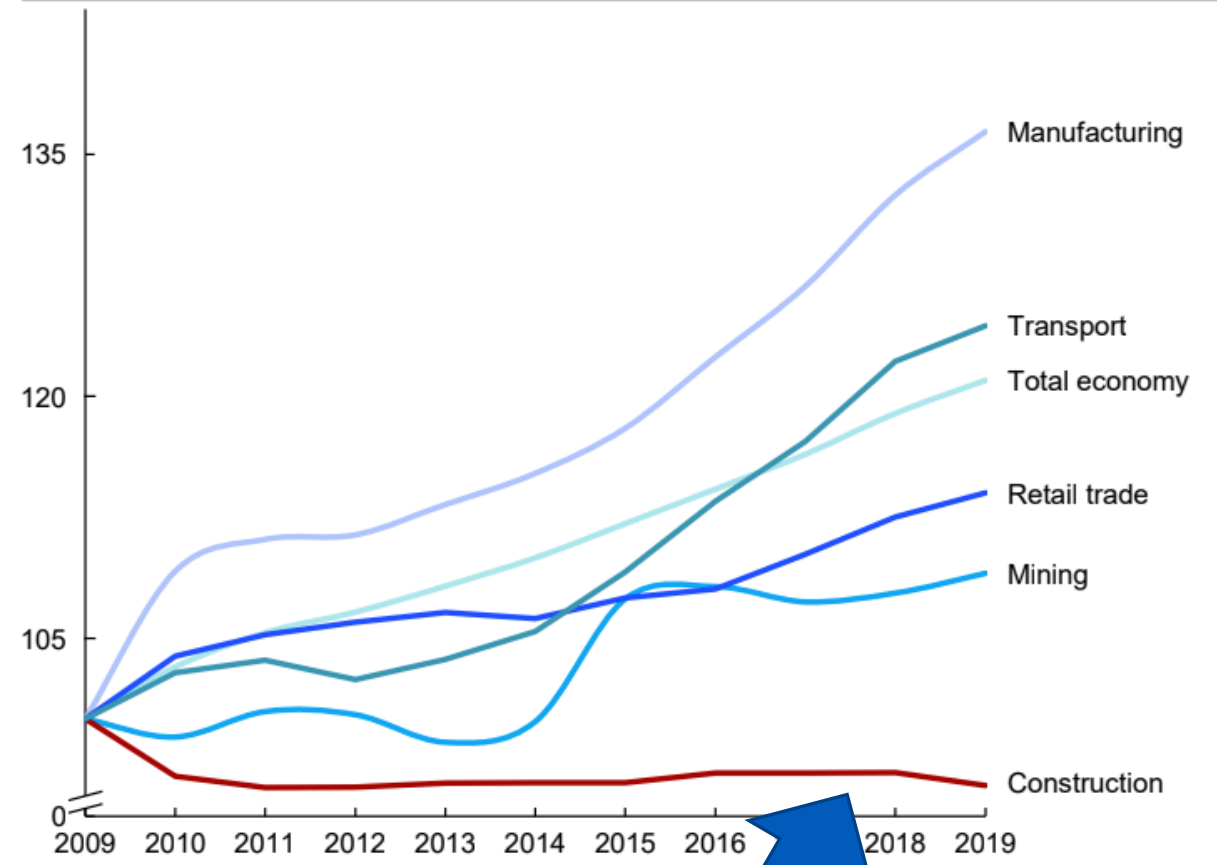




THE CHALLENGE: TRANSFORMING LABOR PRODUCTIVITY

LABOR PRODUCTIVITY IS AN INDUSTRY CHALLENGE

Global productivity¹ growth, Indexed at 100\$ per employee in 2009

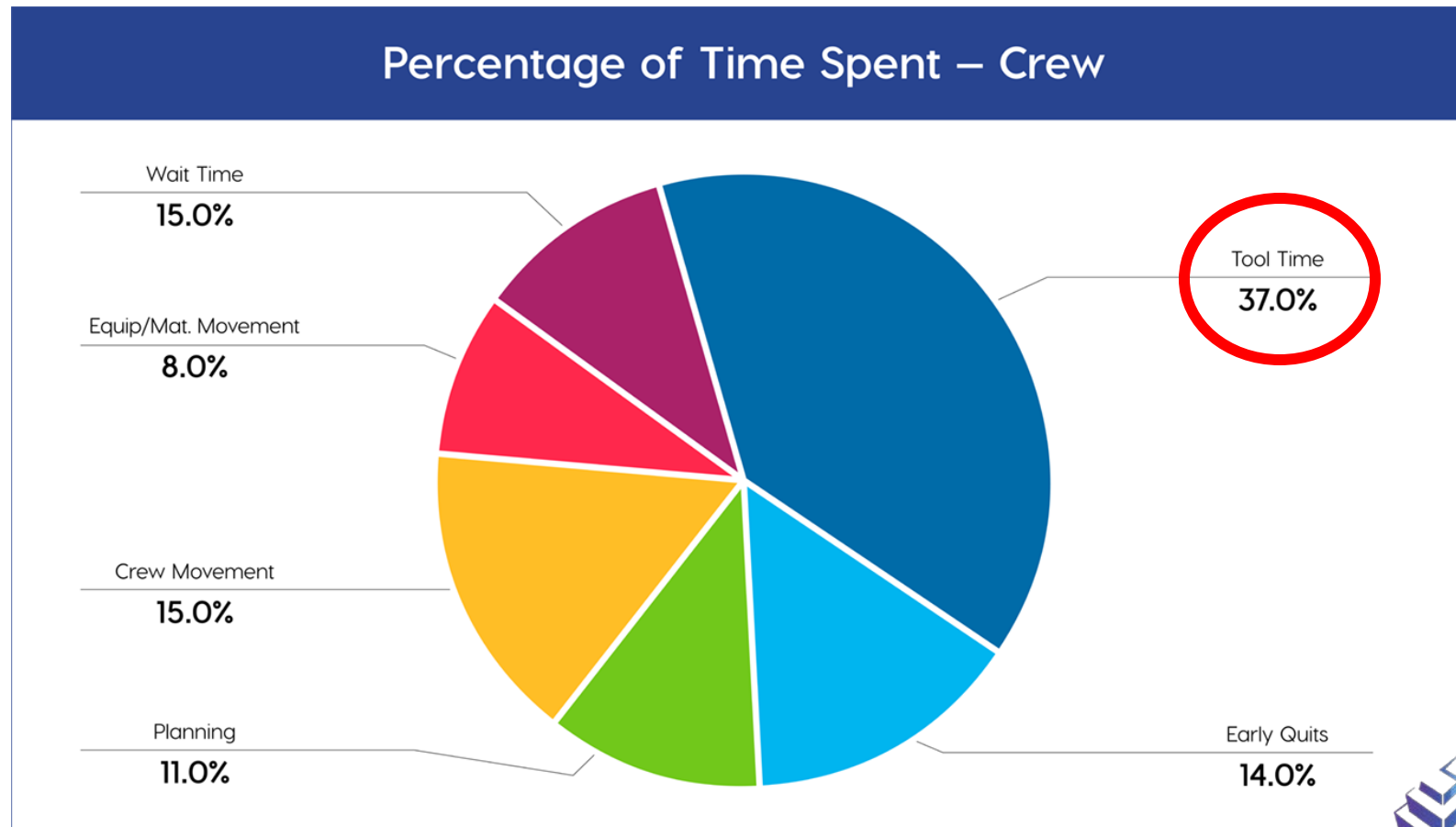


1. 2009 indexed to 100; calculated in 2009 USD per person

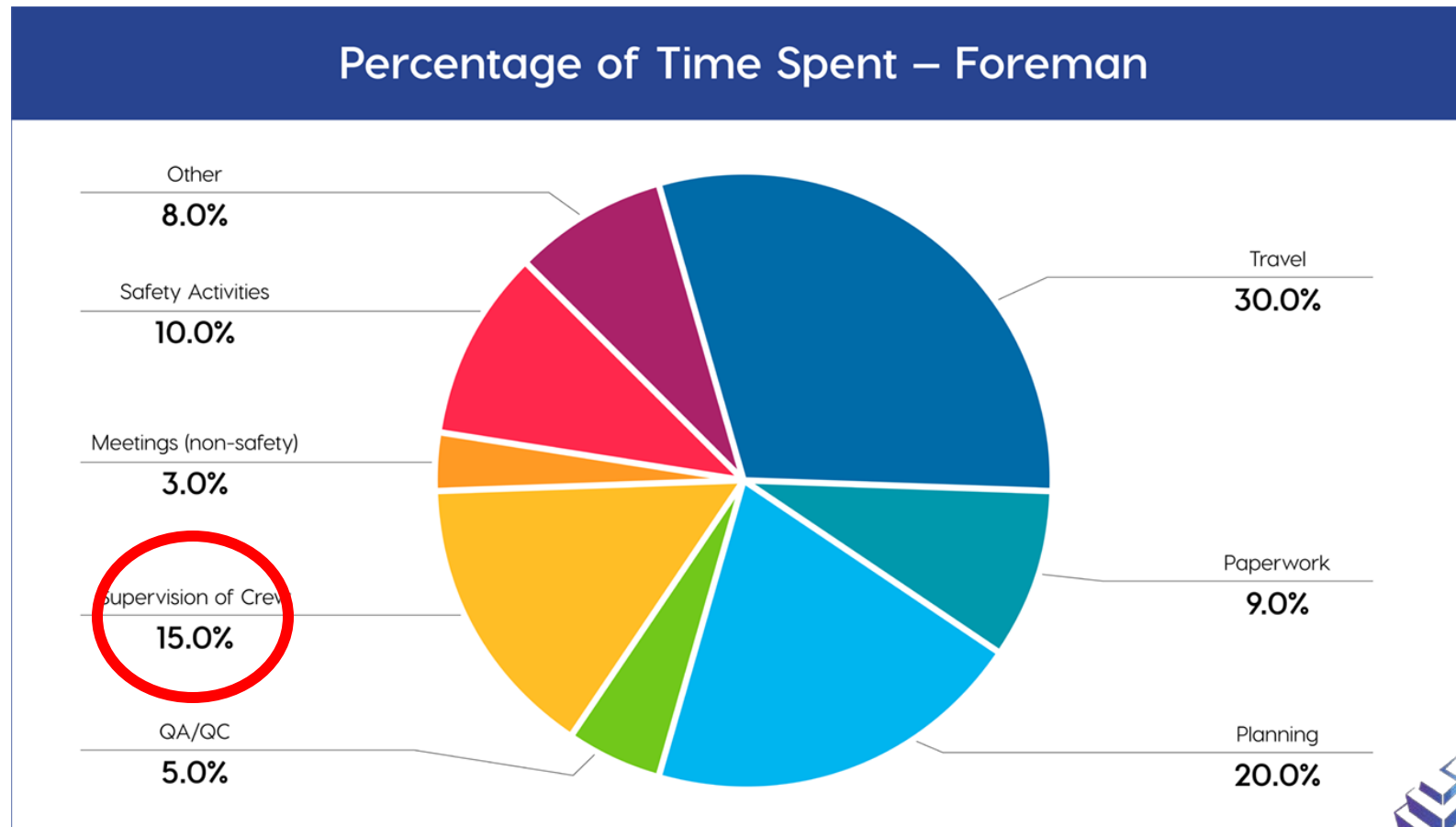
Source: ILO Estimates, IHS Markit, team analysis



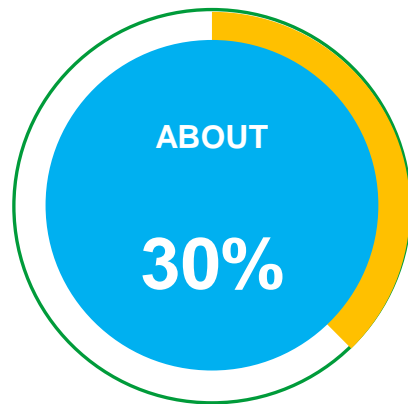
INCREASING ON-TOOL TIME IS THE OBJECTIVE OF AWP



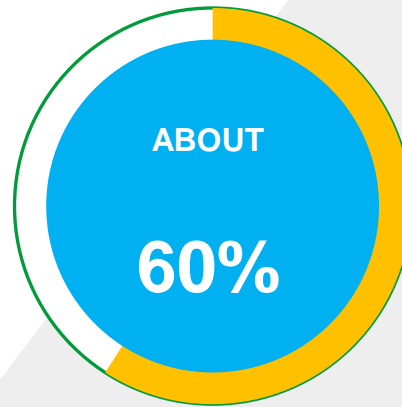
SUPERVISION TIME IS ALSO A PRODUCTIVITY INDICATOR



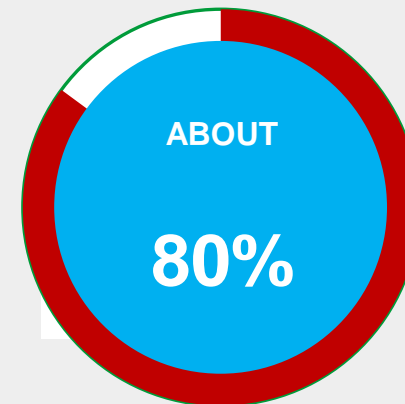
CONSTRUCTION REWORK INCREASES SAFETY RISKS



about **30%**
of construction cost
is **REWORK**



about **60%**
of construction projects
FAIL to meet cost and
schedule



about **80%**
of construction
productivity on site
is **WASTE**

Source: BIM CONSTRUCTION MANAGEMENT INTRODUCTION SESSION, SMARTIX

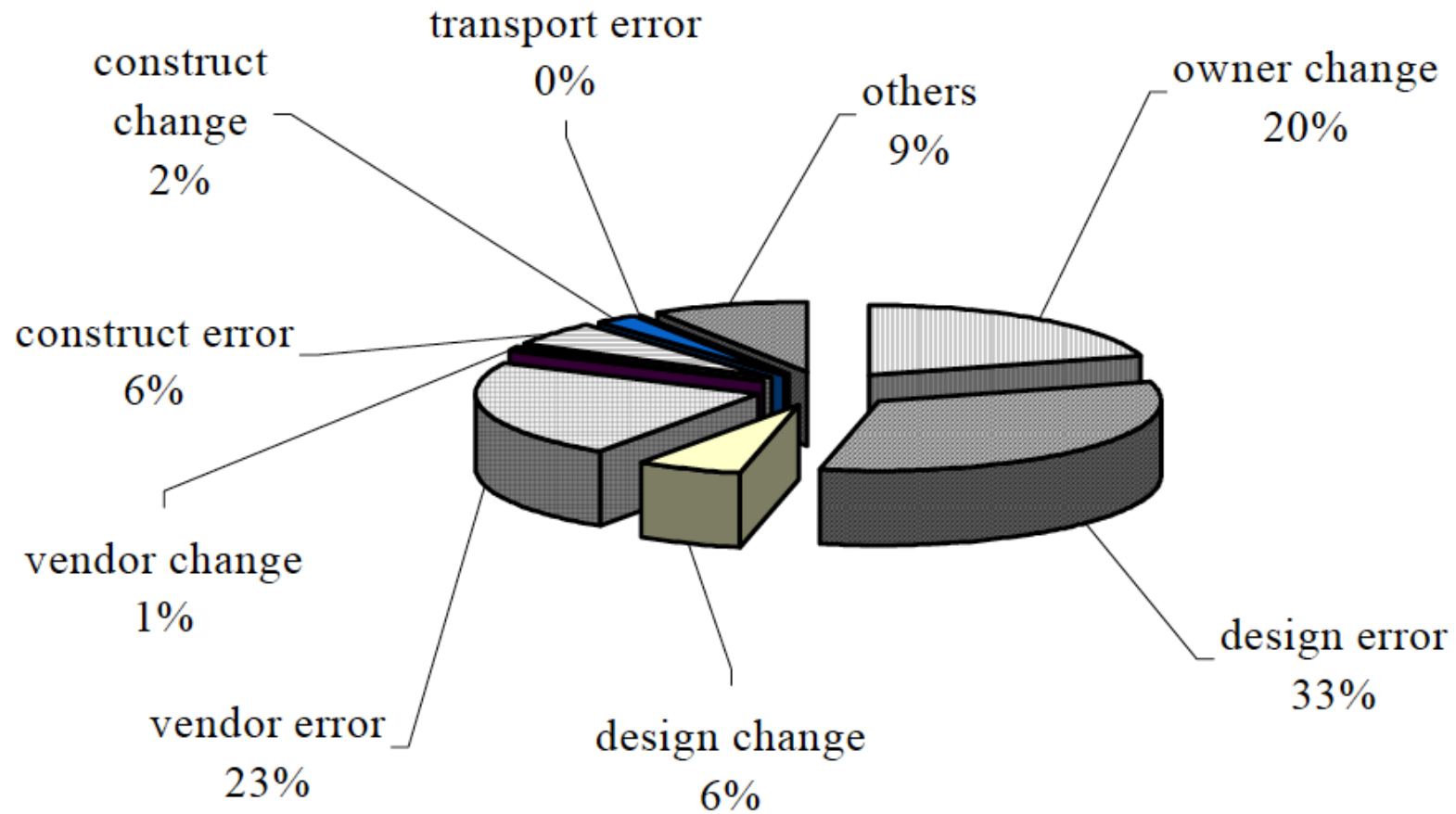


Figure 5.7. Sources of Field Rework

Your field performance is correlated with your office performance

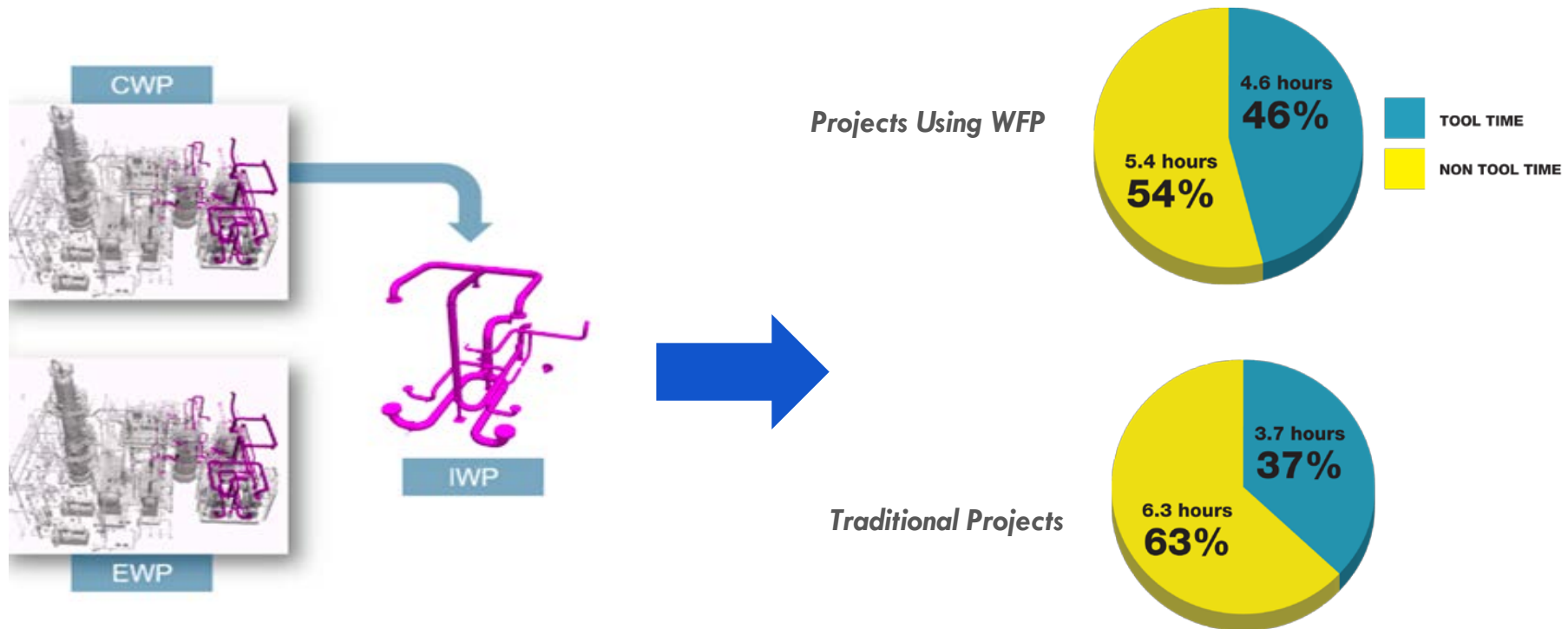


- Scope changes / execution changes
- Poor risk management
- Late engineering**
- Late procurement
- Poor sequencing**
- Missing Construction-driven planning**
- High Turnover
- Poor definition
- Inadequate staffing and lack of competencies

- ✗ Recordable incidents
- ✗ Poor labor productivity
- ✗ Low direct supervision time
- ✗ Unpredictable construction

Source: Hamdi, 2011-2013

A BREAKTHROUGH IN FIELD ON-TOOL TIME



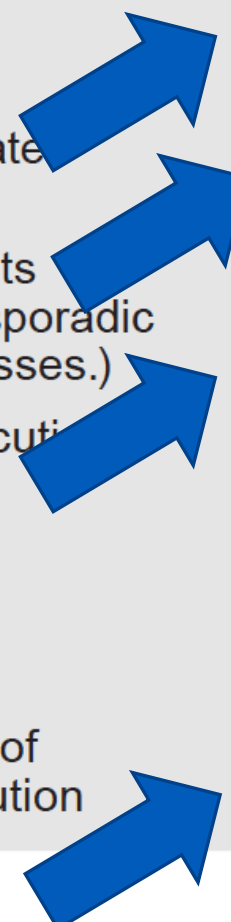
Case Studies (COAA data)



2016

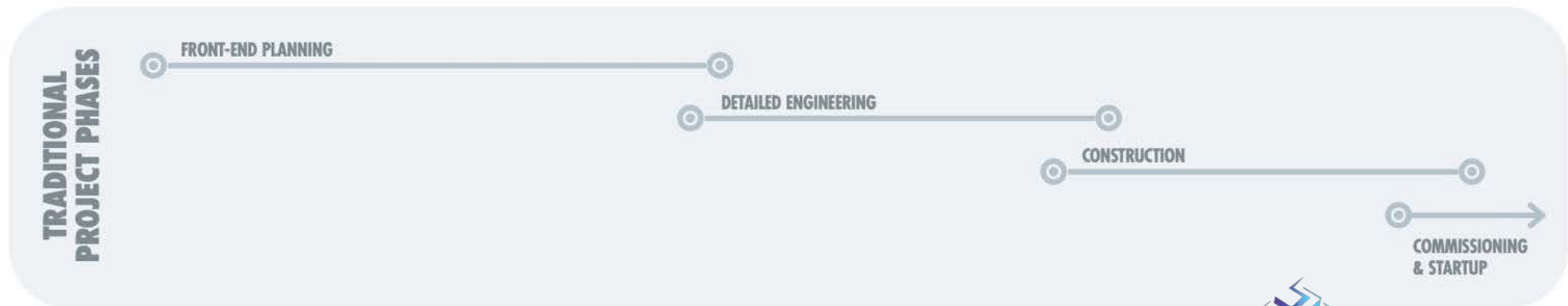
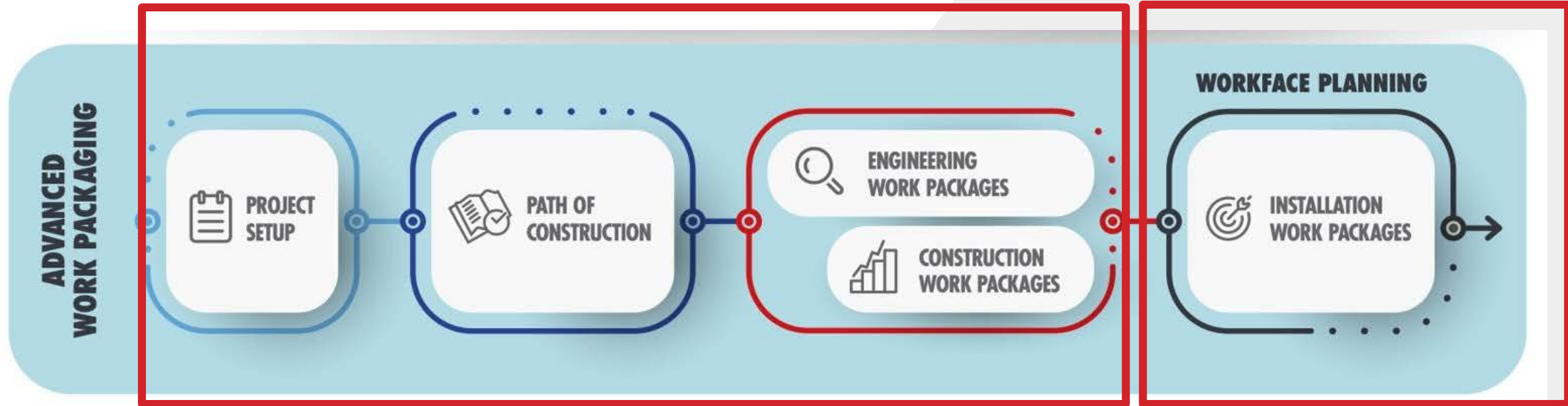
AWP IMPLEMENTATION EVIDENCE (CII)

Maturity Stage			
Performance Dimension	1-AWP Early Stage	2-AWP Effectiveness	3- AWP Business Transformation
Productivity	Around 10% increase	Around 25% increase	Around 25% increase
Cost	Project on budget	TIC 10% below estimate	TIC 10% below estimates
Safety	Zero lost-time accident (TRIR below company average)	Zero lost time accidents (TRIR improves with sporadic first-aids and near misses.)	Zero lost time accidents (TRIR improves with sporadic first-aids and near misses.)
Predictability	Significant deviation from baseline estimates	Minor changes to execution schedule	Execution schedule to plan
Quality	Rework in line with previous quality performance	Rework slightly below company's average	Rework substantially below company's average; substantial reduction of RFIs
Schedule	Project on schedule or experienced minor delay	Project slightly ahead of schedule during execution	Project slightly ahead of schedule during execution



PART 2

PART 1



ADVANCED WORK PACKAGING (AWP)



Designing a construction plan without accounting for constraints is like planning to climb Everest without accounting for the cold - failure is inevitable

Advanced

Olfa Hamdi

 Tweet

*“Advanced Work Packaging (AWP) is a work **process framework** fundamentally based on the idea of **thinking with the end in mind**. It is designed to allow engineering planning to be driven by construction sequencing...”*

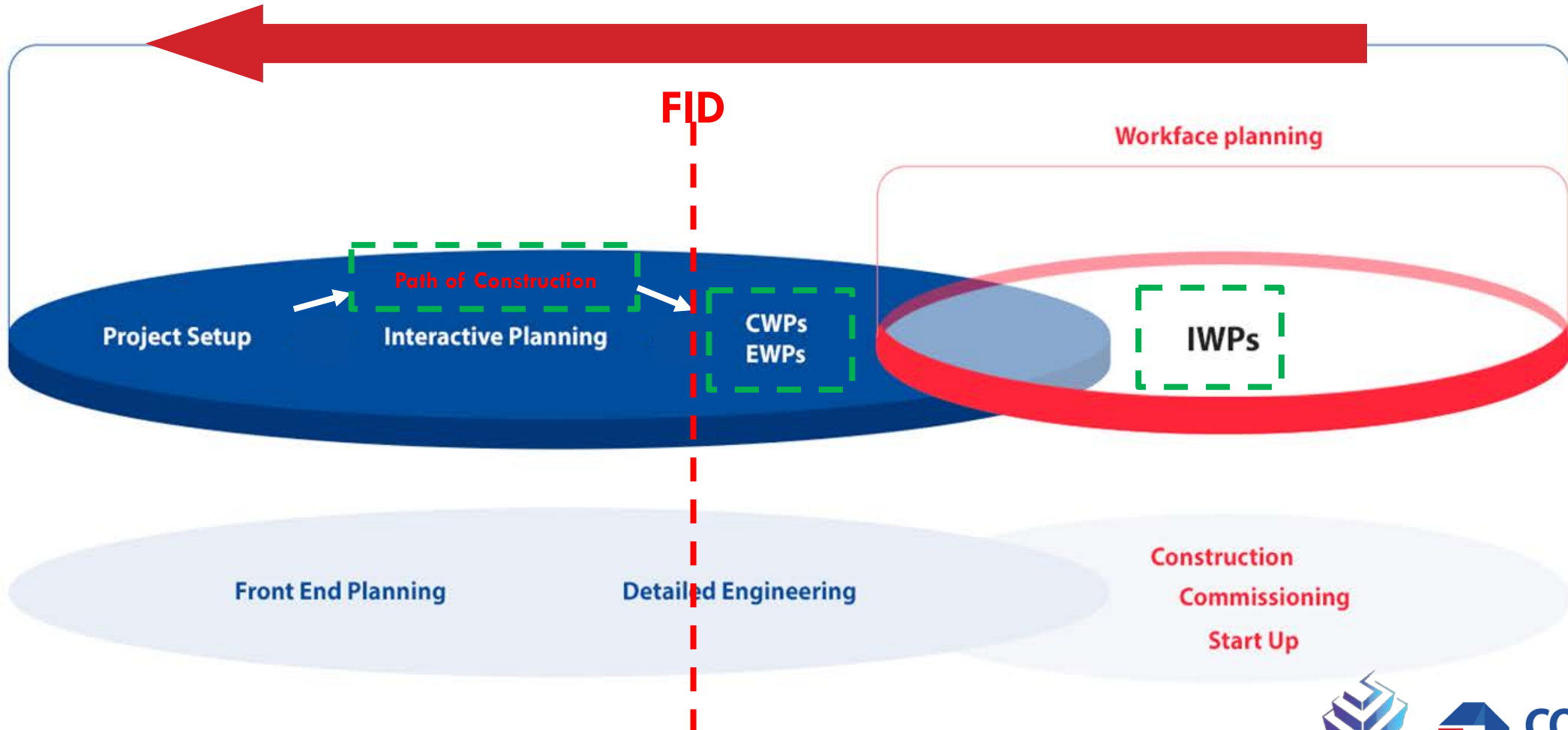
Advanced Work Packaging: Thinking with the End in Mind

Olfa Hamdi

www.workpackaging.org

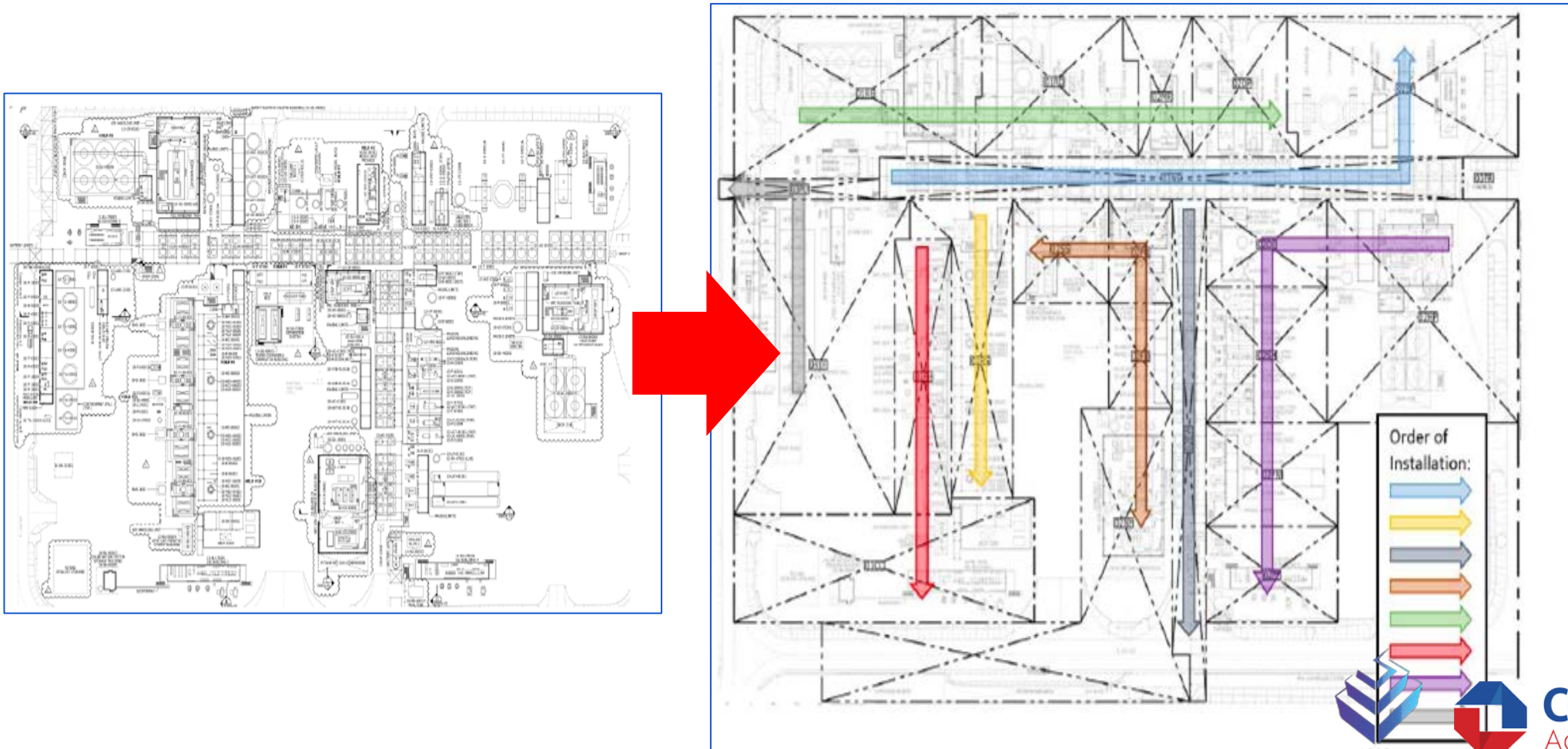


AWP: Thinking with the End in Mind

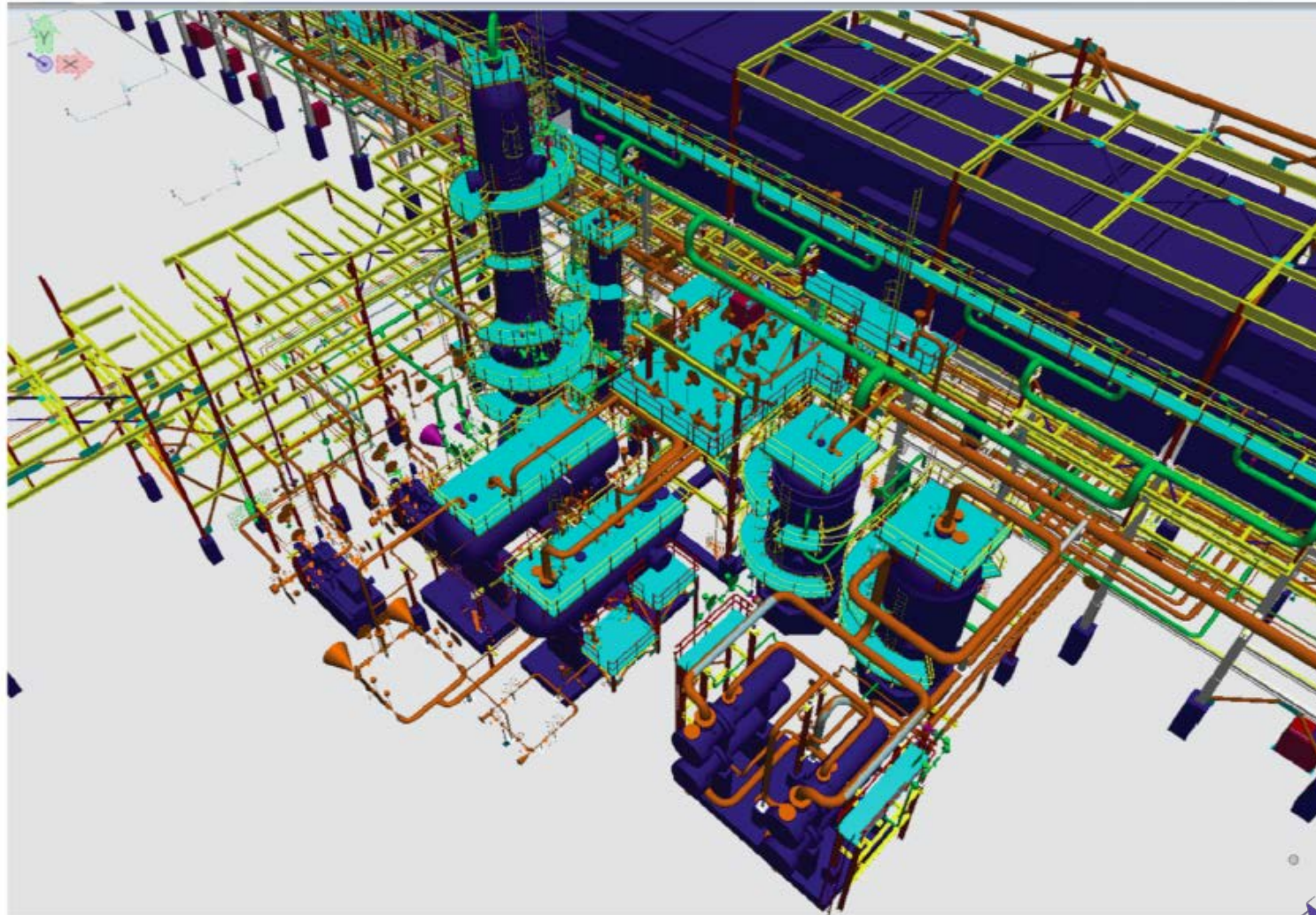


The Path of Construction: A Critical Deliverable

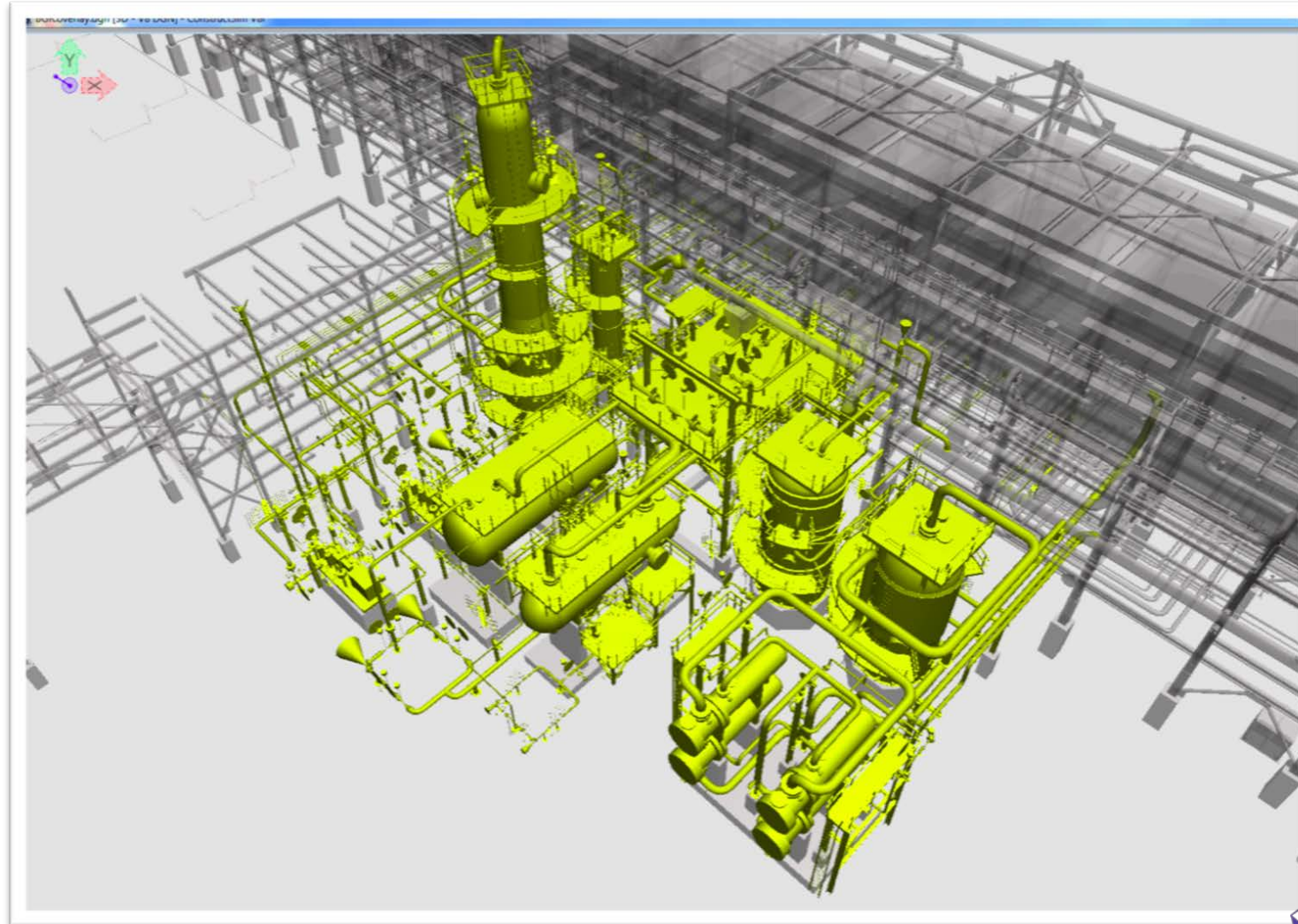
A Path of Construction is a visual representation of the project scope areas (silos) and sequencing within the plot plan.



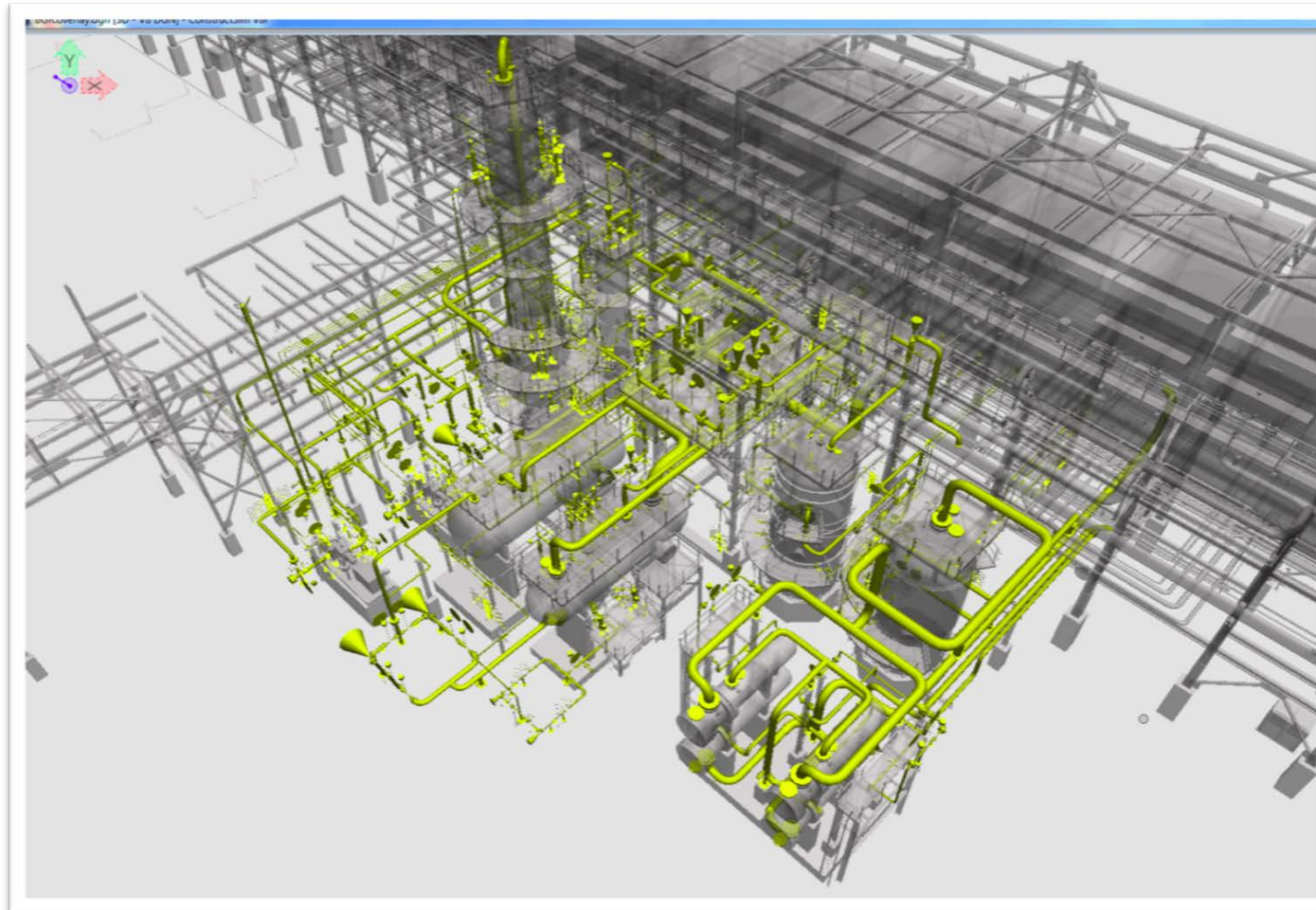
LET'S BREAK THIS AREA DOWN INTO CONSTRUCTION WORK PACKAGES...



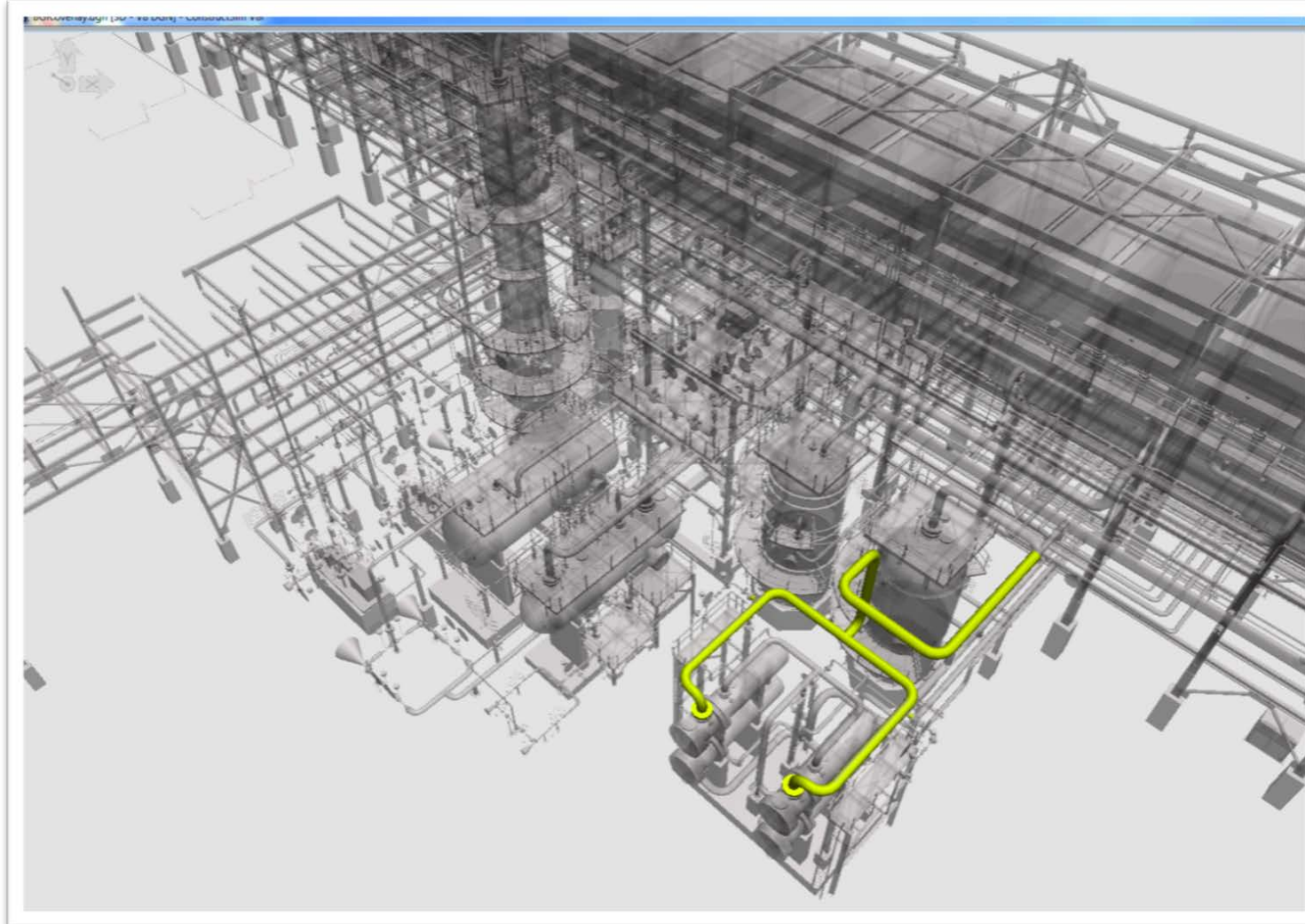
HERE IS AN EXAMPLE OF A CONSTRUCTION WORK AREA (CWA)...



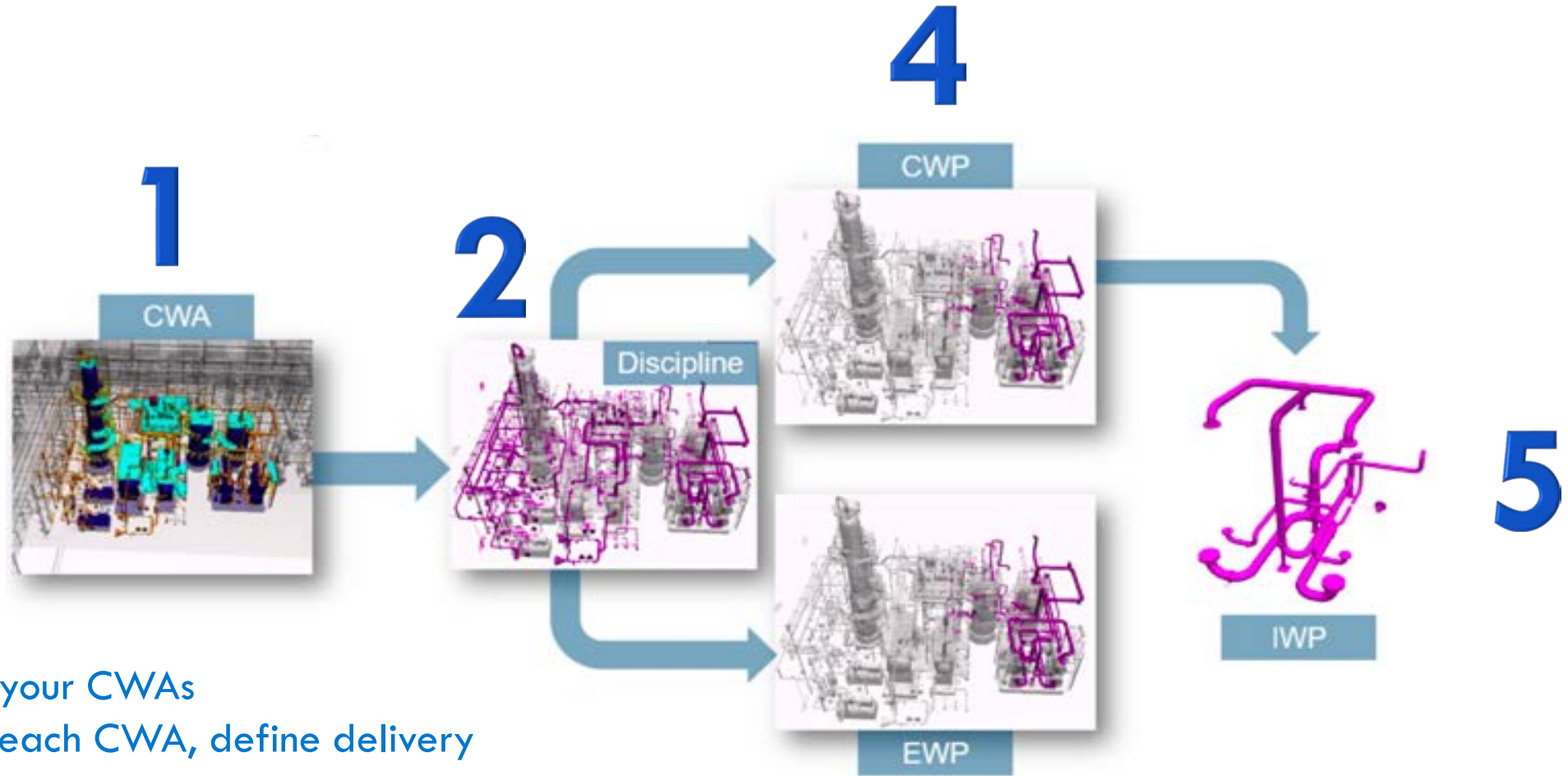
PIPING CONSTRUCTION WORK PACKAGING (CWP) ASSOCIATED WITH A PIPING ENGINEERING WORK PACKAGING (EWP)...



A SMALLER DISCIPLINE SCOPE IS AN INSTALLATION WORK PACKAGE (IWP)...



AWP Structure



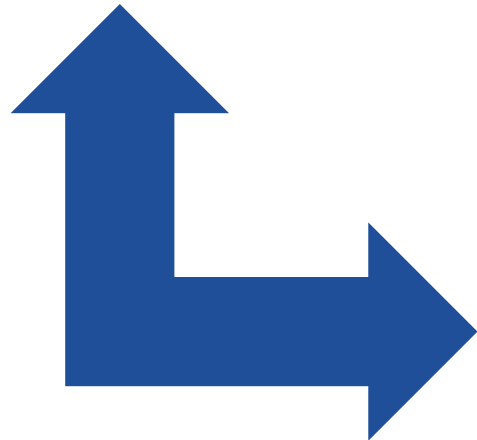
1. Define your CWAs
2. Within each CWA, define delivery dates for your CWPs and EWPs
3. Build your EWPs
4. Build your CWPs
5. Build your IWPs

<https://www.tconglobal.com/single-post/Advanced-Work-Packaging-Definitions>



4 MAJOR DELIVERABLES, NEW PROCESSES

- Path of Construction (POC)
- Engineering Work Packages (EWPs)
- Construction Work Packages (CWPs)
- Installation Work Packages (IWPs)



- Interactive Integrated Planning
- Construction-Driven Engineering
- Construction-Driven Procurement
- Workface Planning

WORKFACE PLANNING (WFP)

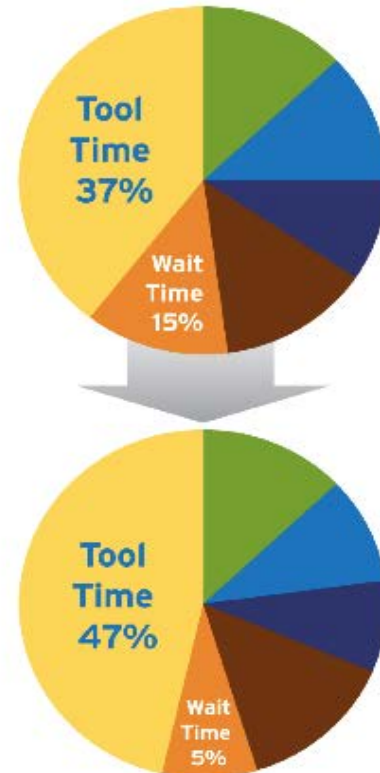
It is the definition, creation, execution, and tracking of Installation Work Packages (IWPs). These packages break down the larger scope of work into executable tasks, which are issued to a field crew.



WORKFACE PLANNING IS:

1. Breaking down work into Installation Work Packages
2. Investing in field planners (workface planners)
3. Standardizing the approach to constraint management

Construction Management & Workface Planning— Driving Craft Productivity in Nigeria



A 10% increase in tool time results in a 25% improvement in productivity

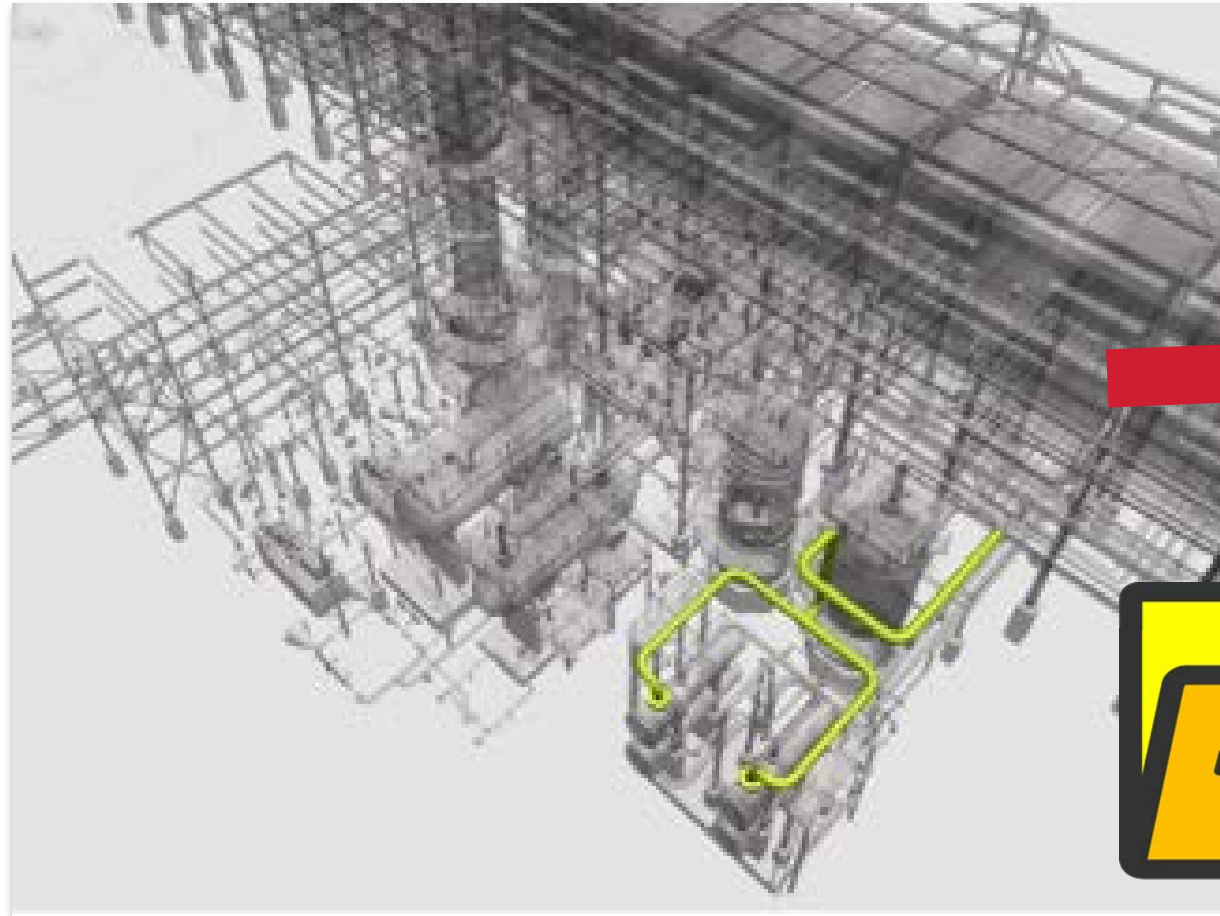


WHAT IS AN INSTALLATION WORK PACKAGE OR IWP?

IWP = The scope of work for a single crew for a single shift.

Typically 500-1000 hours, depending on crew size.

It contains all the information needed by the crew to execute the work, including scope, drawings, materials, equipment, safety, quality and model shots.

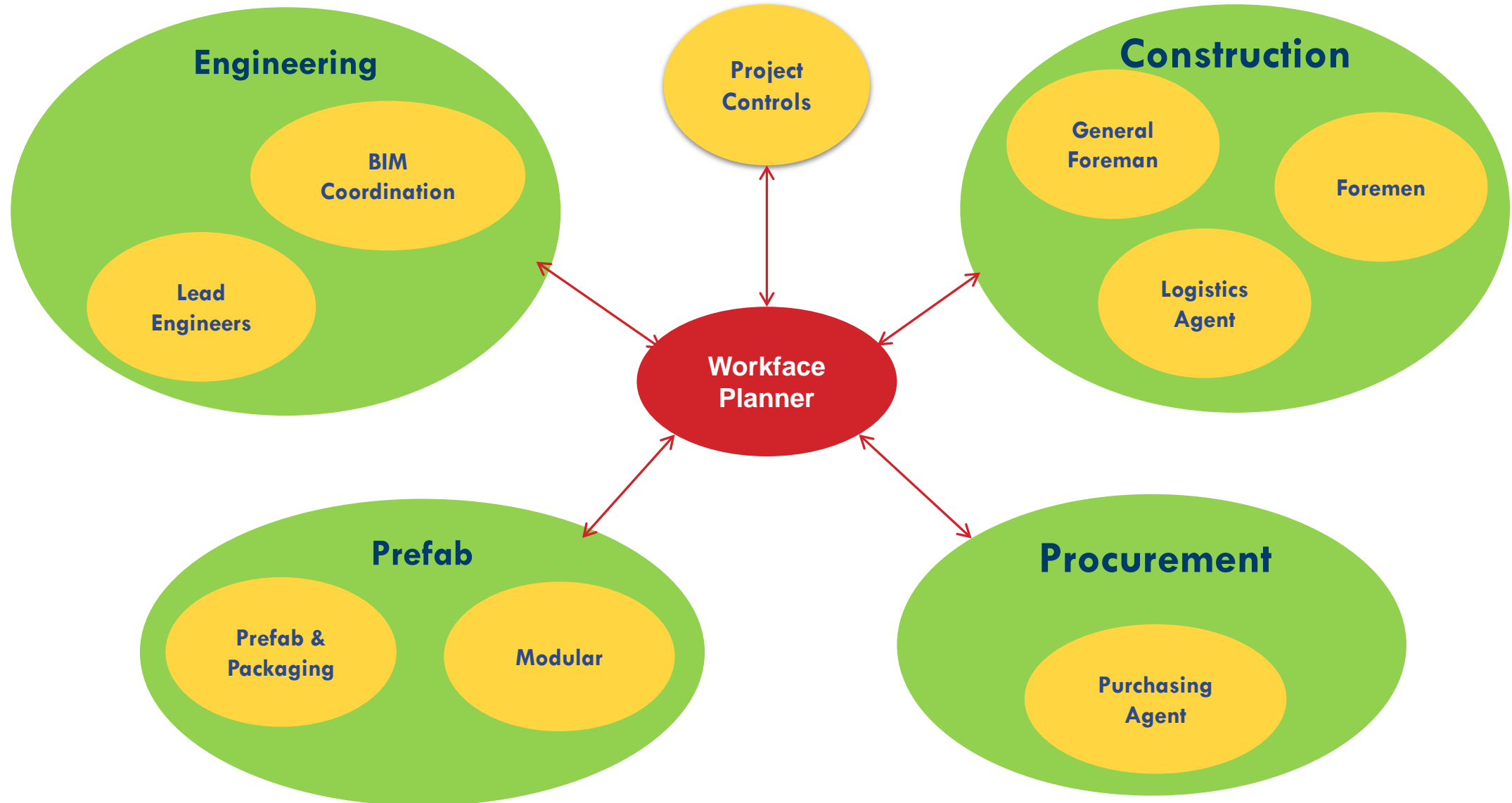


MANAGE A CONSTRAINT-FREE BACKLOG

CWP PE3-57	IWP	Description	Planned Value	90 Day Planning			IWP Assembly				3 Week Look Ahead										
				Weeks prior to execution			4	4	4	4	3	3	3	3	3	2	2	2	1	1	-1
				12	12	12	Documents IFC	Materials Available	Technical Review (RFIs)	Enter Backlog	Enter 3 Week Look Ahead	Bag and Tag Material	Request Scaffold	Request Cranes & Equipment	IWP Hard Copy	Safety	Quality	Resources Confirmed	Preceding Work Confirmed	Issued to the Field	Work Complete
Civil																					
PE3-57-EW																					
Grade																					
	PE3-57-EW-01	Survey for Grade	840	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	PE3-57-EW-02	Strip Top Soil	1340	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	PE3-57-EW-03	Grade to Elevation 1	890	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	PE3-57-EW-04	Grade to Elevation 2	730	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Piling																					
	PE3-57-EW-05	Survey for Piling Placement	620	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	PE3-57-EW-06	Mobilize Piling rig and materials	450	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	PE3-57-EW-07	Install Piles North Side	980	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	PE3-57-EW-08	Install Piles South Side	730	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	PE3-57-EW-09	Cut and Cap Piles North	860	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	PE3-57-EW-10	Cut and Cap Piles South	1250	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
PE3-57-CO																					
Formwork																					
	PE3-57-CO-01	Survey for form work	820	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	PE3-57-CO-02	Excavate for form work	1420	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	PE3-57-CO-03	Install form for EB-43	850	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	PE3-57-CO-04	Build Rebar cage EB-43	640	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	PE3-57-CO-05	Construct Forms for CG3-9	790	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		



INVEST EARLY IN THE WORKFACE PLANNING CAPACITY WITHIN THE TEAM



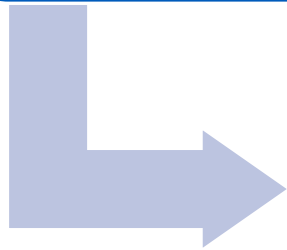
GETTING STARTED



AWP IS A TRANSFORMATION

Step 1

- Education/ Training



Step 2

- Company / Configuration



Step 3

- Piloting



CONCORD Academy



CERTIFICATIONS & KEY COMPETENCIES

KEY CERTIFICATIONS



WORKFACE PLANNING CERTIFICATION

- Master Workface Planning fundamentals and gain access to our world-class methodology and materials
- Covers pre-construction and construction phases
- Recognized as a foundation to project and companywide implementation of Workface Planning
 - Training + Exam
- Taken by anyone involved with Workface Planning (not just Workface Planners)



<input type="radio"/>	How To Prepare For Workface Planning?	1 / 4	^
<input checked="" type="checkbox"/>	Understanding the Path of Construction SLIDES · 4 MIN · PREREQUISITE		
<input type="checkbox"/>	Test your learning QUIZ · 5 QUESTIONS · PREREQUISITE		
<input type="checkbox"/>	Understanding Construction Work Packages SLIDES · 7 MIN · PREREQUISITE		
<input type="checkbox"/>	Test your learning QUIZ · 5 QUESTIONS		
<input type="radio"/>	How To Create Installation Work Packages?	1 / 2	v
<input type="radio"/>	How To Manage Constraints?	1 / 2	v

WORKFACE PLANNING CURRICULUM (4 HOURS)

- 1) Welcome To The Course!
- 2) Why Does Your Project Need Workface Planning?
- 3) What Is Workface Planning?
- 4) How To Prepare For Workface Planning?
- 5) How To Create Installation Work Packages?
- 6) How To Manage Constraints?
- 7) How To Manage Your Backlog?
- 8) How To Effectively Collaborate With Your Team?
- 9) Lessons Learned For A Workface Planner



All Lessons Include a Quiz Titled "Test Your Learning"

ADVANCED WORK PACKAGING CERTIFICATION

- Master Advanced Work Packaging fundamentals and master the skills, methods, and tools required to make AWP work in any organization
- From definition to engineering and construction, Concord's program provides you with a comprehensive understanding of Advanced Work Packaging project lifecycle
- Ideal for Project Managers, AWP champions, and anyone looking to dive deep into the details of AWP per phase



What is Engineering Work Packaging? 8/8 ^

Defining Construction Driven Engineering

SLIDES · 7 MIN · PREREQUISITE

Test your learning

QUIZ · 5 QUESTIONS · PREREQUISITE

What is an EWP?

SLIDES · 6 MIN · PREREQUISITE

Test Your Learning

QUIZ · 5 QUESTIONS · PREREQUISITE

Understanding EWP Workflows

SLIDES · 5 MIN · PREREQUISITE

Test Your Learning

QUIZ · 5 QUESTIONS · PREREQUISITE



AWP FUNDAMENTALS CURRICULUM (13 HOURS)

- 1) Why Advanced Work Packaging?
- 2) What Are the Key Components of Advanced Work Packaging?
- 3) What Is the Path of Construction?
- 4) What Is Engineering Work Packaging?
- 5) What Is Construction Work Packaging?
- 6) Procurement and Advanced Work Packaging
- 7) What Is Workface Planning?
- 8) What Are the Advanced Work Packaging Roles and Responsibilities?
- 9) Project Controls for Advanced Work Packaging
- 10) Lessons Learned



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4.6/5.0



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Webinars

Advanced Work Packaging Fundamentals
Webinar

3 Lessons

Free



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SPEAKER: OLFA HAMDI | CEO,
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Webinars

Advanced Work Packaging
Implementation Scenarios Webinar

5 Lessons

Free



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MODERATOR: AARON
BARREIRO | CONCORD
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AWP IMPLEMENTATION SCENARIOS | 1

Webinars

Workforce Planning and AWP for Middle
East EPC Projects Webinar

5 Lessons

Free



Workforce Planning and AWP
for Middle East EPC Projects

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WFP FUNDAMENTALS WEBINAR | 1

