

## Advanced Work Packaging - White Paper



### It's just math!

#### 1. The Problem:



Most other industries have developed an understanding of their industry to the point where they know the math.

- If you build planes with wing tips, they use less fuel and you can operate at a lower cost, reduce your carbon footprint and make more profit.
- If you steer farm tractors with GPS you use less seeds, fertilizer and chemicals, and you get higher and more reliable yields.

- If you automate tasks in manufacturing, you eliminate mistakes, minimize cost and increase quality.

It's just math.

The argument against standardized processes in construction has always been that every project is unique, which means that you cannot standardize execution. Well yes, but also no.

The product may be unique but the processes we use to manage projects are common, and we know which ones work and which ones don't.

- If we use 3D models to design complex project we make less mistakes
- If we digitize our access to drawings, we can always get the latest revision.
- If we collect relevant data and create charts that show the actual current state, then we can make informed decisions.
- We know that if we send workers into the field without materials, that they don't get much done.
- We know that if we send workers into the field without the latest approved drawings, that the risk of re-work increases.
- We know that if you need a crane to lift a valve and you don't have a crane then you can't lift the valve.
- We know that if you put more people on a project and you still don't have the materials, drawings or the crane, that you still don't get stuff done.

These are all known best and worst practices, and there are lots more.

## 2. Why Change?



In a rapidly evolving world where urbanization is on the rise and infrastructure demands are reaching unprecedented levels, the urgency to enhance construction productivity has never been more critical. The 1.8 trillion dollar per year U.S. construction industry is struggling to keep up with the flourishing population and their need for services, which is creating a burgeoning backlog

of projects and an infrastructure deficit that threatens to impede our economic progress.

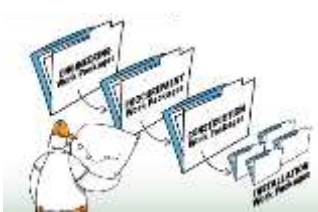
Exacerbating this problem, our inability to deliver projects within predictable budgets and schedules is thwarting decisions to green light important projects. The need for a paradigm shift in construction productivity is glaringly apparent.

We are in a race against time to create sustainable, resilient, and innovative project execution practices that can support the needs of our future generations.

The cost of inaction is not just measured in delayed projects; it extends to economic losses, environmental impact, and the overall well-being of communities. The construction industry stands at a crossroads, and we are being called to step up and embrace technologies and collaboration, that will seed the disruptive innovation that we need to keep us in business.

In the words of JFK: If not us then Who? If not now then When?

## 3. The Solution



Advanced Work Packaging is not a new project execution methodology, it is a collection of known best practices. It's the stuff that successful projects do, that target getting the right stuff in the right place, at the right time.

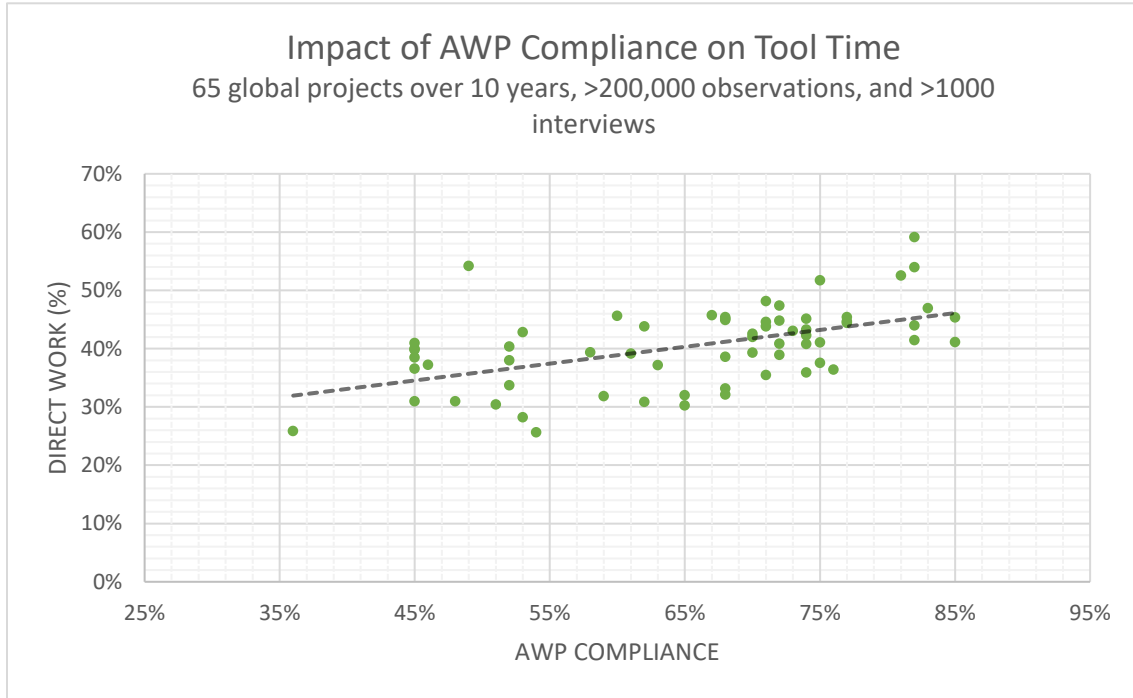
Common sense that is not commonly practiced.

So how do we figure out what to do and when to do it?

20 years of research, testing and practical application across the global industry have refined what AWP is and defined how to apply it. The Construction Industry Institute (CII) based in the University of Texas have defined the elements of AWP and will share it with anybody who wants to know. CII and COAA will also tell you that the average level of productivity improvement for the construction workforce is 25%. This is true for weekend barn raising projects and multi-billion dollar giga projects.

#### 4. The Results

One of the tools that CII have developed with the help of the industry is the AWP scorecard: It is a list of 60 AWP best practices that infuse with each other to create the model for “construction in heaven”. The industry has now amassed 65 projects of data, executed globally over the last 10 years, where over 200,000 tool time field observations were collected, and more than 1000 interviews conducted with key project staff. The result is a simple graph that shows the level of AWP compliance from the scorecard on the X axis against the level of productive tool time on the Y axis.



There is an obvious trend that shows compliance with AWP best practices results in higher productivity. The extended benefit of the data is that the delta is now measurable. We now know that the difference in productivity between a project that is 45% compliant with AWP (normal project executing business as usual) against a project that is just 75% compliant is 27% more time on tools. A 27% increase in construction productivity will reduce the overall cost and schedule of a project by at least 10%. That is \$100 Million for every Billion and 5 weeks of schedule for every year. As an industry we should be shocked and embarrassed that there is this much on the table. Furthermore, the other obvious conclusion is that knowing that higher productivity is possible we are being intentionally ignorant when we do business as usual.

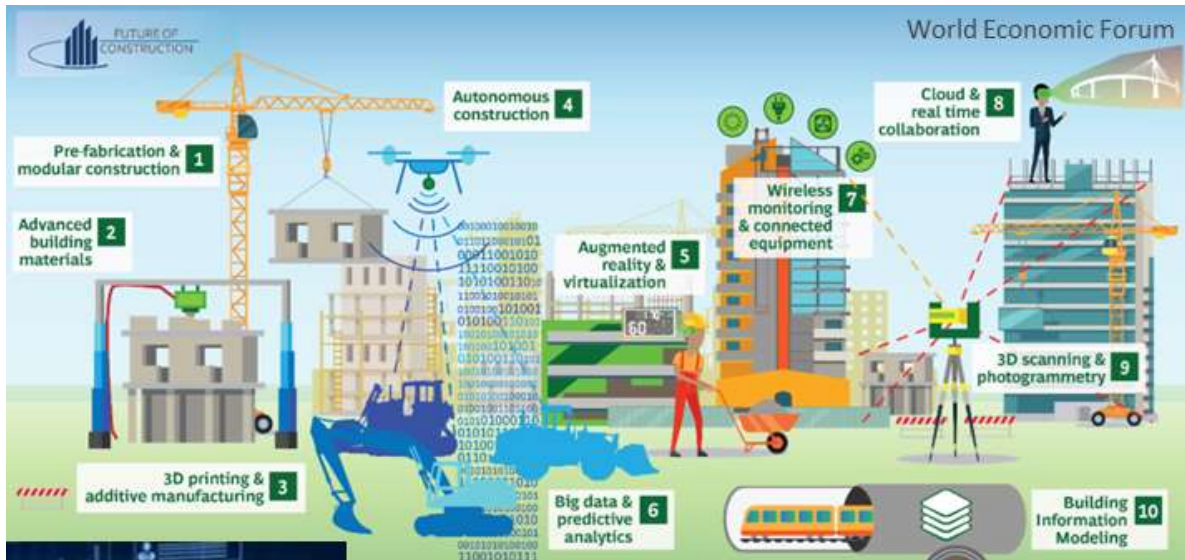
#### 5. The Product



The key deliverables from a functioning AWP system, are constraint free Installation Work Packages. Every foreman receives an Installation Work Package every week that has been vetted to make sure that the work is doable. We have proven that the materials are on hand, the documents are correct, that they have access to the workface and that they have the right tools and equipment. Just imagine that for a moment, we are making sure that the workers have everything that they need, before they go to work. And guess what, they get lots done. And the project finishes ahead of schedule with world class quality and safety.

No Magic, just common-sense best practices applied consistently and monitored.

## 6. The Future State of Construction



Imagine what happens to our industry when Construction Owners realize that they can get 10% more done every year for the same budget and schedule. How many more hospitals, schools, freeways, ships and wind farms are we going to build and how many people will be positively impacted? Improving construction productivity is a fundamental requirement of our continuous improvement as a nation, that will help us maintain our status as the benchmark for world class.

## 7. Long Term Vision

We know that our worlds are going to be positively impacted by Artificial Intelligence and that stable data presented in a consumable format will help us get more done with less. AWP provides a structured wireframe that produces reliable, meaningful data, that allows us to warehouse and mine information, so that we can use AI to make informed decisions.



## 8. Call to Action



Get started, go to You Tube and watch the AWP videos.

Get a copy of an AWP book or the CII guides.

Then build a plan for how you can make this work in your organization, and call any one of the AWP service providers, if you need help.

Ultimately the pixie dust that is going to propel AWP into the mainstream and make it the normal way to execute projects is regulation and measurement.

If you measure it, you manage it. (and if you don't, you don't)

**It's just math.**

Geoff Ryan P.M.P.