

Master Assumptions Register

A single source for estimators, planners
and risk practitioners

Phil Dean MEng, MCaSa, ICECA

Senior Estimator – Complex Projects

Lisa Silander BA (Hons), ICIOB, FCaSa

Director Project Controls – Global Practice Lead
& UK Technical Lead



AtkinsRéalis

Introduction

Phil Dean

MEng, MCaSa, ICECA

Senior Estimator – Complex Projects

AtkinsRéalis



Lisa Silander

BA (Hons), ICIOB, FCaSa

Director Project Controls – Global
Practice Lead & UK Technical Lead

AtkinsRéalis



Benefits and Context

5 mins

Assumptions – What and Why?

5 mins

The Problem with Assumptions

5 mins

Master Assumptions Register

5 mins

Summary and Discussion

10 mins

AtkinsRéalis

 Project Controls
EXPO
London, UK

Benefits Across Sectors

Benefits of the Master Assumptions Register

- Alignment of thinking across disciplines (eliminate silos)
- Reduces conflicting assumptions
- Improves quality of baselines
- Aids decisions in delivery



Buildings & places

Cities & communities
Social
Commercial
Residential property



Defense

Aerospace
Defense
Security



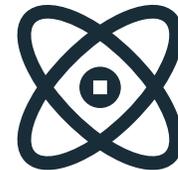
Industrial

Life sciences / Pharma
Advanced / Hi-tech manufacturing
General manufacturing



Minerals & metals

Minerals
Metals



Nuclear

New build
Reactor support and life extension
Environmental remediation



Power & renewables

Power grids
Hydropower & dams
Alternative energies and technologies



Transportation

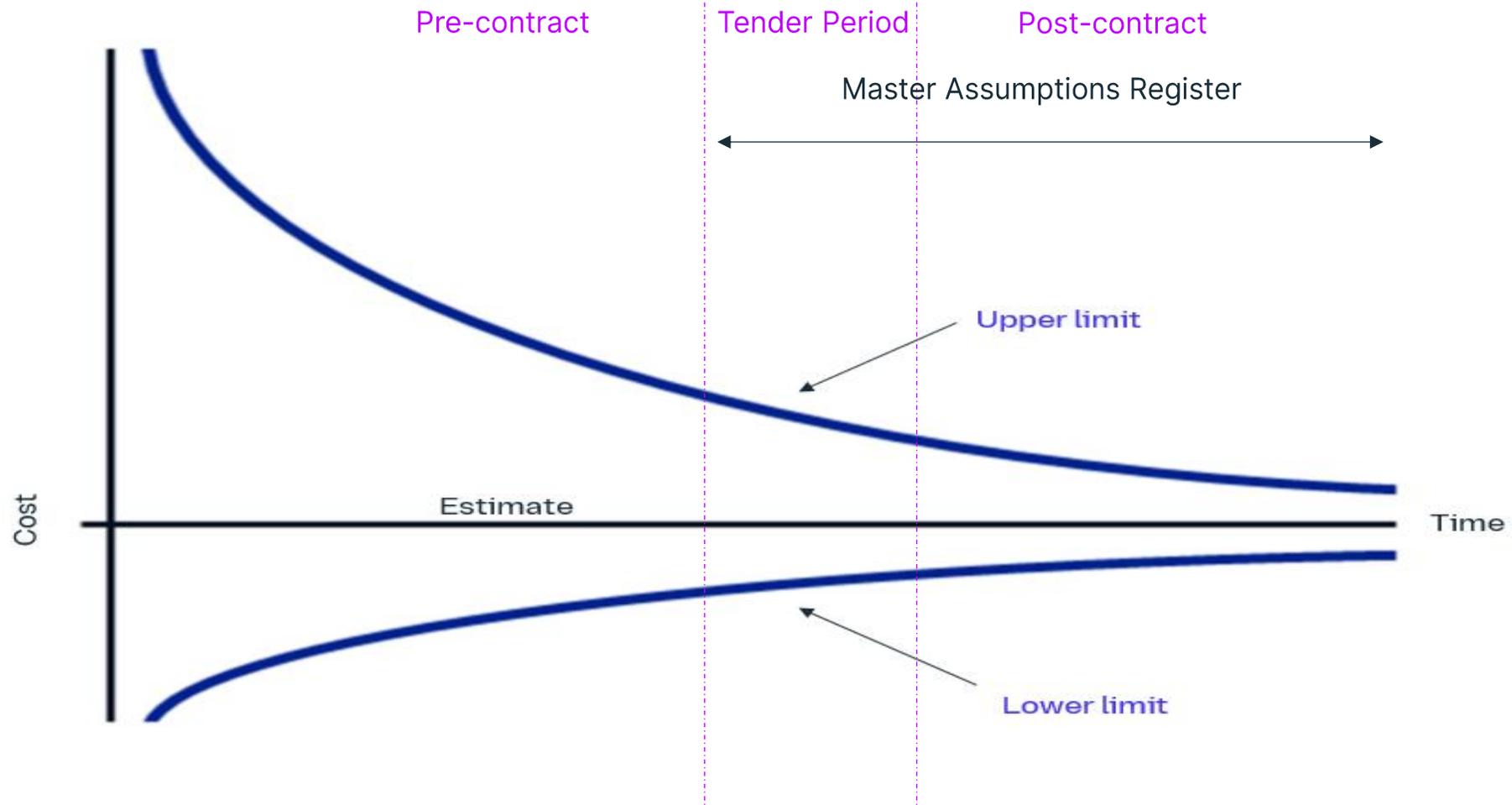
Rail & transit
Roads
Aviation
Port



Water

Water and wastewater utilities
– Treatment and resources
Environment protection, regulation and resilience

Context



Benefits and Context

5 mins

Assumptions – What and Why?

5 mins

The Problem with Assumptions

5 mins

Master Assumptions Register

5 mins

Summary and Discussion

10 mins

AtkinsRéalis

 Project Controls
EXPO
London, UK

Assumptions are used
when you don't have all
the facts

Assumptions have
an impact on both
cost and schedule

Assumptions are Optimistic
or Pessimistic

Every assumption has an
associated Risk

Assumptions in Estimating, Planning and Risk



Basis of Estimate



Basis of Schedule



Basis of Risk Register

Fundamental Principles:

- **Assumptions are used when you don't have all the facts**
- **Every assumption has an impact on both cost and schedule**
- **Assumptions are optimistic or pessimistic**
- **Every assumption has an associated risk**



Benefits and Context

5 mins

Assumptions – What and Why?

5 mins

The Problem with Assumptions

5 mins

Master Assumptions Register

5 mins

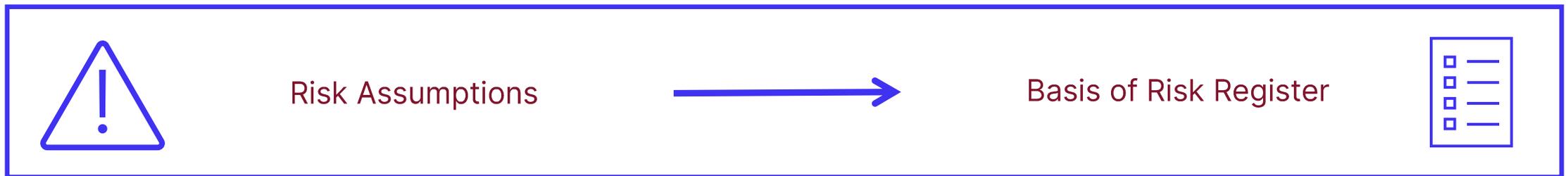
Summary and Discussion

10 mins

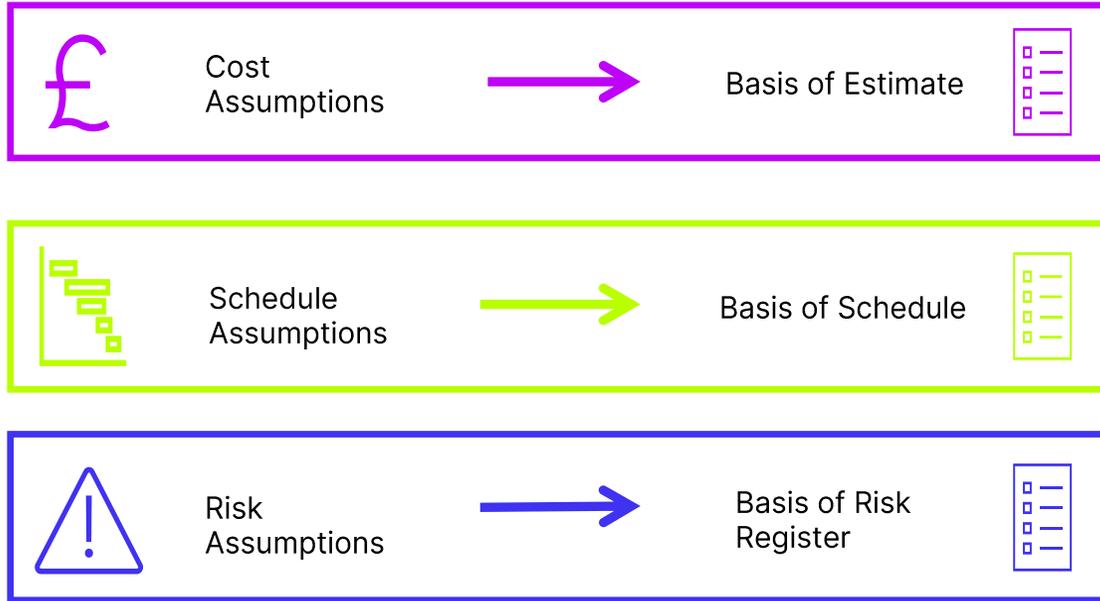
AtkinsRéalis

 Project Controls
EXPO
London, UK

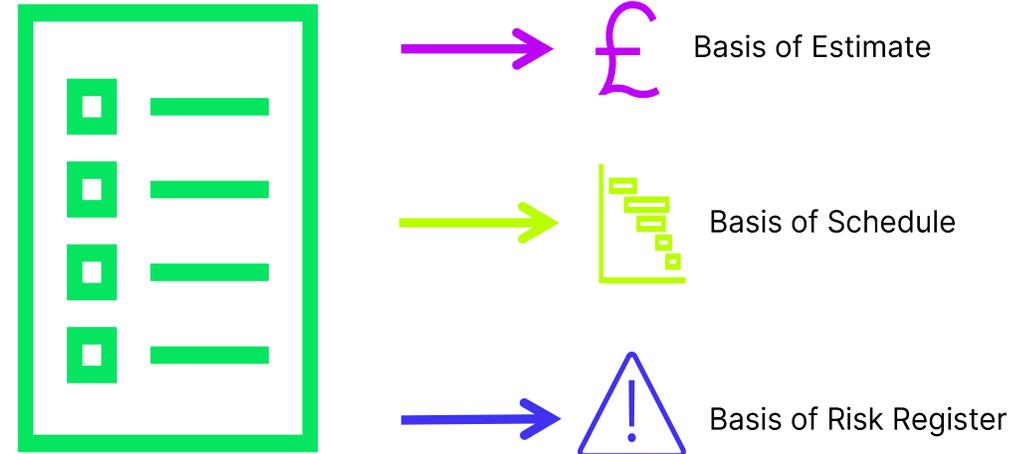
The Problem with Siloed Assumptions



Current State



Future State



Benefits and Context

5 mins

Assumptions – What and Why?

5 mins

The Problem with Assumptions

5 mins

Master Assumptions Register

5 mins

Summary and Discussion

10 mins

AtkinsRéalis

 Project Controls
EXPO
London, UK

Worked Example

1. How much does it cost to backfill a turbine hall basement?
2. How long does it take?
3. What are the risks?



Material will be delivered to site , deposited in the void and compacted in layers.



What information do we need to estimate the cost, time and risk?

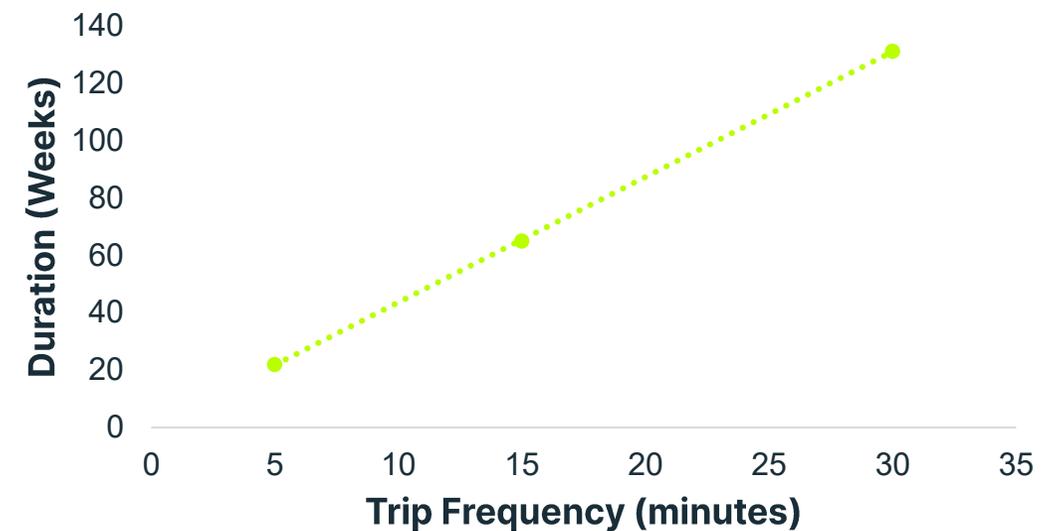
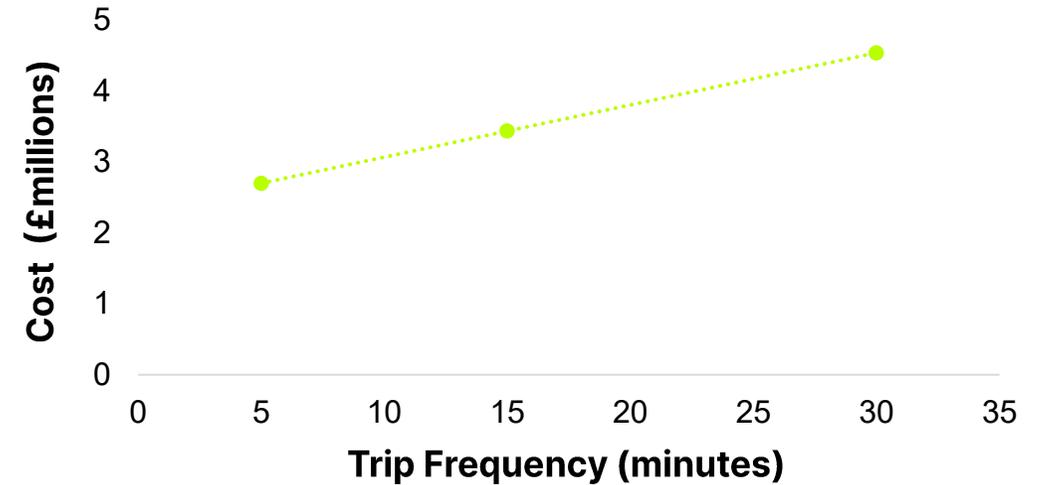
What assumptions do we need to make?



Worked Example

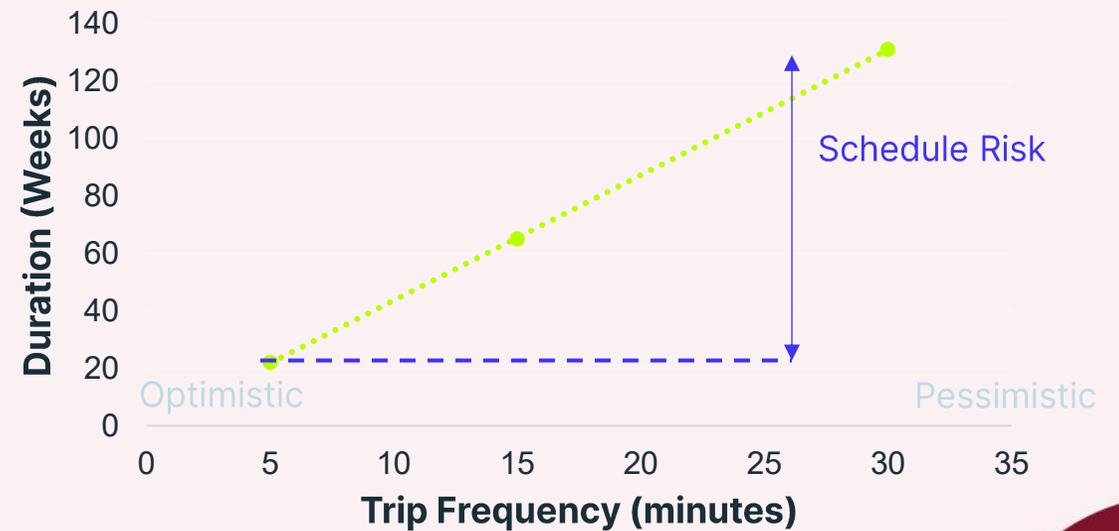
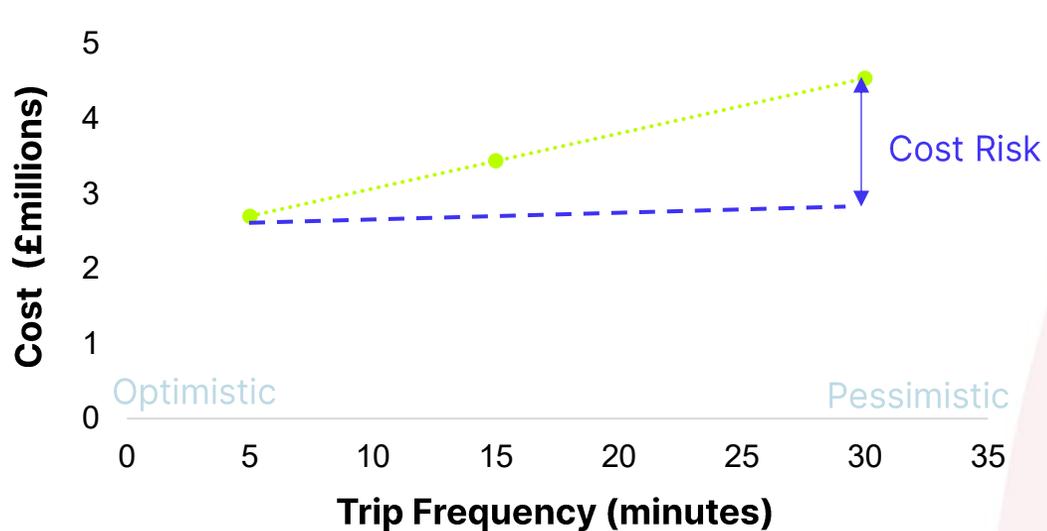
Trip Frequency	Labour (£m)	Plant (£m)	Material (£m)	Total (£m)
5 minutes	0.24	0.13	2.3	2.70
15 minutes	0.72	0.40	2.3	3.44
30 minutes	1.43	0.79	2.3	4.54

Trip Frequency	Trips per day	Duration
5 minutes	96	22 weeks
15 minutes	32	65 weeks
30 minutes	16	131 weeks



Assumptions are Optimistic or Pessimistic

Every assumption has an associated Risk



Master Assumptions Register (MAR)

Assumption	Activity	£ Cost	Duration	Risk	Cost Impact	Schedule Impact
Delivery every 5 minutes	Filling	£ 2.7m	22 weeks	Deliveries are slower	£ 1.84m	109 weeks
Assumption b)	Assumption b)	...	...	Risk b)	...	...
Assumption c)	Assumption c)	...	...	Risk c)	...	...
Total		Sum Cost	Sum Duration		Sum Cost Impact	Sum Duration Impact

Benefits and Context

5 mins

Assumptions – What and Why?

5 mins

The Problem with Assumptions

5 mins

Master Assumptions Register

5 mins

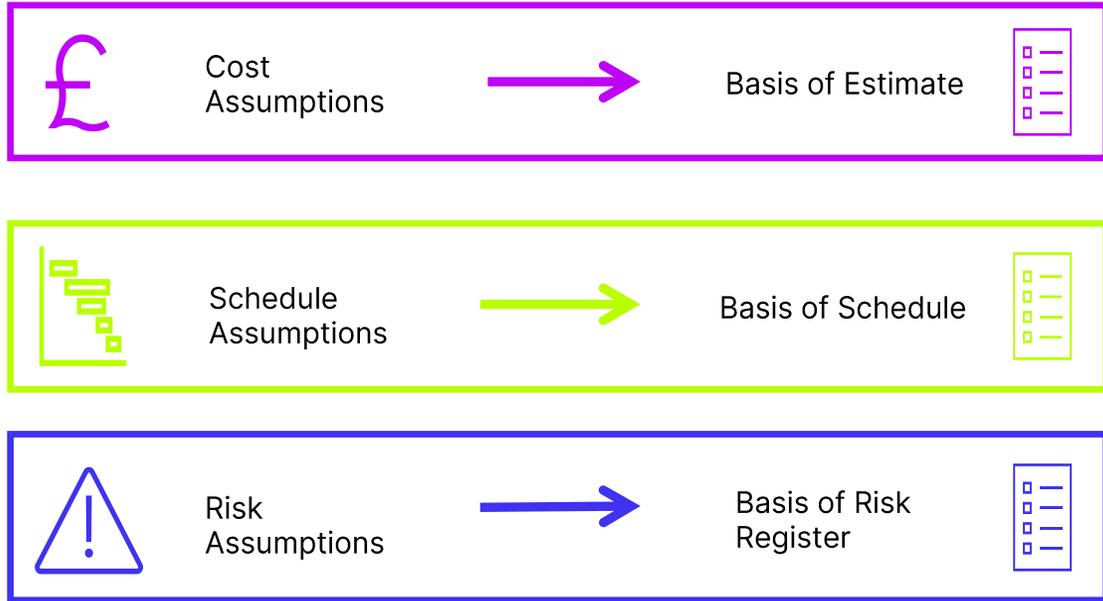
Summary and Discussion

10 mins

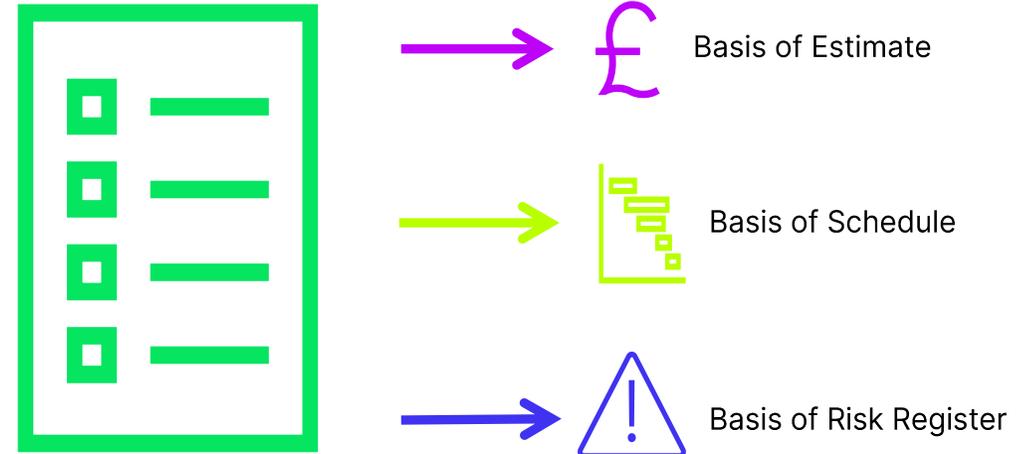
AtkinsRéalis

 Project Controls
EXPO
London, UK

Current State



Future State



Master Assumptions Register (MAR)

Problem with Siloed Assumptions

- Misalignment
- Conflicting assumptions
- Inaccurate baselines
- Loss of traceability

Benefits of the MAR

- Alignment of thinking across disciplines (eliminate silos)
- Reduces conflicting assumptions
- Improves quality of baselines
- Aids decisions in delivery

Assumption	Activity	Cost	Duration	Risk	Cost Impact	Schedule Impact
Delivery every 5 minutes	Filling	£ 2.7m	22 weeks	Slower Delivery	£ 1.84m	109 weeks
Assume b)	Act b)	...	...	Risk b)	...	...
Assume c)	Act c)	...	...	Risk c)	...	...
Total		Sum Cost	Sum Duration		Sum Cost Impact	Sum Duration Impact



Any Questions?

**Thank
You**