



An Introduction To The Value Toolkit

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CONSTRUCTION
INNOVATION HUB



INDUSTRIAL
STRATEGY



UK Research
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Introduction

Many projects fail to realise their intended value. Even for projects that are delivered on time and on budget, the anticipated benefits do not always materialise. Why is this?

In practice, the reasons are manifold. But it is clear that inconsistencies in approach, a lack of alignment in decision-making and a narrow focus on controlling cost and transferring risk in the capital phase – today’s typical approach – are not going to solve this.

We need a different approach. One that targets value and whole-life performance. This is the ambition set out in the Construction Sector Deal and key policy documents such as the IPA’s Transforming Infrastructure Performance.

But what do we mean by “value”, and how can we best define and measure it? Value does not just mean cost, nor is it something that exists purely in the construction phase of projects. Value needs to consider a broader range of metrics beyond financial. It must also consider wider social, economic and environmental factors – and consider them across the full investment lifecycle.

Delivering this definition of value does not need a change in policy. But it does need a change in approach - one that better reflects broader, strategic policy objectives, responds to local ambition and meets the needs of users, owners and operators. An approach that supports informed decision-making throughout the lifecycle and provides industry with the opportunity to innovate to deliver value in the design, delivery and operation.

This is why the Construction Innovation Hub is setting out the new Value Toolkit – a suite of tools that will drive faster, better decision making to deliver measurable value improvement.

This document provides an introduction to the Value Toolkit – what it is, what it will deliver and how it will be used.

Value Toolkit Overview: A suite of tools to support faster value-based decision-making across the whole investment lifecycle				
	Module 1: Value Definition	Module 2: Delivery Model	Module 3: Procuring for Value	Module 4: Ongoing Measurement
Overview:	Defining the unique value profile for a given project and creating value indices through which informed decisions can be made	Selection of a delivery model and commercial strategy that best meets the value drivers of the project	Helping the market to shape their offers and helping clients to make procurement decisions based on the Value Drivers of the project	Continuous forecasting and measurement of value performance throughout delivery and operation
Tools:	<ul style="list-style-type: none"> Value Profile Value Indices 	<ul style="list-style-type: none"> Delivery Model Selector Commercial Strategy Developer 	<ul style="list-style-type: none"> Procuring for Value - Bid Optimisation Procuring for Value - Client Evaluation 	<ul style="list-style-type: none"> Project Monitoring Asset Monitoring Analysis
Aimed at:	<ul style="list-style-type: none"> Policy-makers Clients Advisors 	<ul style="list-style-type: none"> Clients Advisors Industry 	<ul style="list-style-type: none"> Clients Advisors Industry 	<ul style="list-style-type: none"> Clients Industry Policy-makers

Module 1: Value Definition

The Value Definition module has two key tools which support the creation of a Value Profile and the generation of Value Indices to ensure that each project is aligned with both the client's value drivers and broader strategic policy objectives.

Creating a Value Profile

Each project or programme will have its own unique **Value Profile** – a shape that sets out the Value Drivers for that client, for that project, in that location. The Value Profile is established by setting the relative importance of industry-wide **Value Categories**, based on the **Five Capitals Model**. These can be thought of as sliders on a graphic equaliser.

Whilst the Value Profile is unique to each project, there are national, strategic policy ambitions that must be considered. Such strategic ambitions could include net-zero carbon, levelling-up or driving manufacturing approaches, all of which must be reflected in the relative weightings, and therefore the Value Profile.

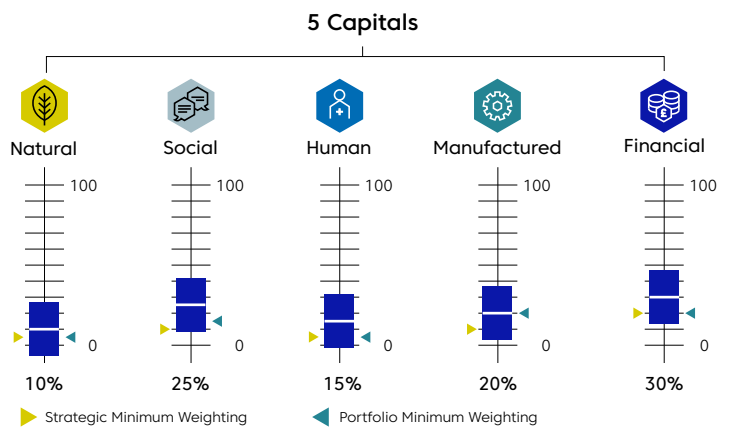
In addition, individual departments, clients or funders may have portfolio-level drivers and targets which further inform the weightings of certain value categories. For example, it may be that a department wishes to place increased emphasis on Productivity in order to accelerate a portfolio of projects.

This process provides the market with a clear, consistent and transparent articulation of the core Value Drivers as they apply nationally, and for specific clients, projects or programmes. Such consistency will allow industry to invest strategically for the market, not just tactically for each project - bringing forward products, services and solutions which deliver better value.

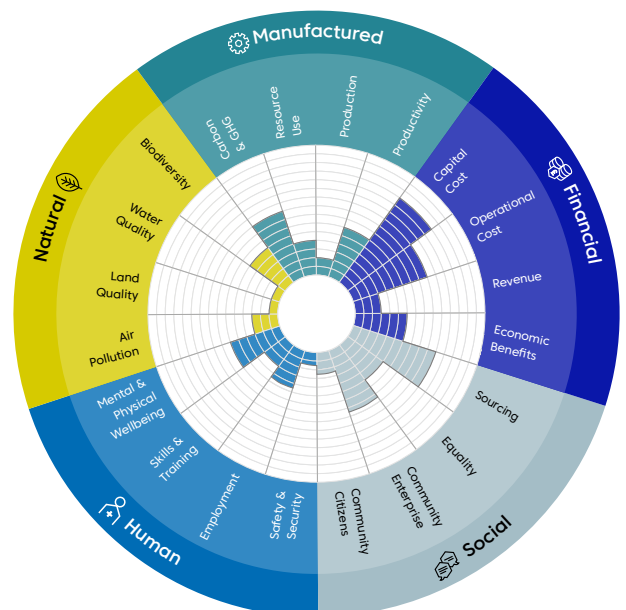
The project now has its unique Value Profile. The relative weightings of the Value Categories will be used to make informed choices throughout the investment lifecycle. The second tool converts this value profile into a series of Value Indices.

Natural		Air Quality, Land Quality, Water Quality, Biodiversity
Social		Community - Citizens, Community Enterprise, Equality, Sourcing
Human		Safety & Security, Employment, Skills & Training, Mental & Physical Wellbeing
Manufactured		Carbon & GHG, Resource Use, Production, Productivity
Financial		Capital Cost, Operational Cost, Revenue, Economic Benefits

The 5 Capitals Model and Value Categories



Assigning 5-Capitals Weightings



Example Project Value Profile

Generating Value Indices

To convert the Value Profile into an overall **Investment Value Index (IVI)**, each Value Category is assigned one or more metrics and a **benchmark** representing good practice. This could be number of jobs created per million pounds, annual operational energy per metre squared, or cost per square metre to build, with metrics and benchmarks tailored to the project type and its location.

A **baseline IVI score of 1000** represents the benchmark performance being met for all value categories, with the number of points associated with each category being determined by the weightings outlined in the Value Profile. For example, a value category with a 10% weighting will score 100 points if benchmark performance is achieved.

Default performance ranges will be generated for each metric based on the asset type, which may be further refined for each specific project. This provides the client with the ability to set minimum performance

standards against certain metrics to reflect project specific priorities and targets. For example, a client may wish to disregard any options which do not meet a planned opening date or exceed affordability limits.

Whilst the IVI reflects performance across all the value categories and metrics, additional **Value Indices** can be generated from a subset of the same data. For example, by combining factors including accessibility, inclusivity and indoor environmental quality, a **Design Value Index** is automatically generated. Such indices provide an additional means for comparison, reflecting the specific needs of a client, investor or region.

At the end of the Value Definition module, the client will have produced a project specific Value Profile, a baseline IVI, plus any additional value indices. These will be used at every stage, at every intervention, to help inform whether choices and options are value creating or value destroying.

Capital	Project Weighting (%)	Baseline IVI Points
Natural	10	100
Social	25	250
Human	15	150
Manufactured	20	200
Financial	30	300
	100%	1000

Value Category	Project Weighting (%)	Baseline IVI Points
Carbon & GHG	40	80
Resource Use	20	40
Production	10	20
Productivity	30	60
	100%	200

Metric	Project Weighting (%)	Baseline IVI Points	Benchmark Performance
Embodied Carbon (Kg CO2eq/m2)	50	40	800
Operational Carbon (Kg CO2eq/m2/year)	50	40	43
	100%	80	

Generating the project Investment Value Index (IVI)

Note: Metrics and performance figures for example only

Module 2: Delivery Model and Commercial Strategy

The second module contains two tools to help clients select a Delivery Model and build a Commercial Strategy which best fit the value drivers of the project, maximising the chances of successful outcomes.

The Delivery Model describes how the client proposes to work with market to deliver value and to manage the risks that may prevent the realisation of that value. Every project is faced with a choice of different Delivery Models, including traditional consultant-led delivery, through design and build, alliancing approaches such as Project 13 and new and innovative models such as the platform approach being developed by the Construction Innovation Hub.

Tool 1 Client Delivery Model Selector

Step 1 - Value Drivers: Drawing on the outputs of the first module, the first step maps the available delivery models against the project's Value Profile to identify those that best deliver the client's key value drivers.

Step 2 - Risk Profiler: The second step helps to identify potential barriers to the realisation of value. This tool will assess the level of risk facing a project and again identify those delivery models which will help mitigate the risks.

Step 3 - Client Profile: The third step considers client specific factors such as asset ownership, repeatability of solution, funding model, governance, experience and capability (i.e. have they delivered this sort of project before).

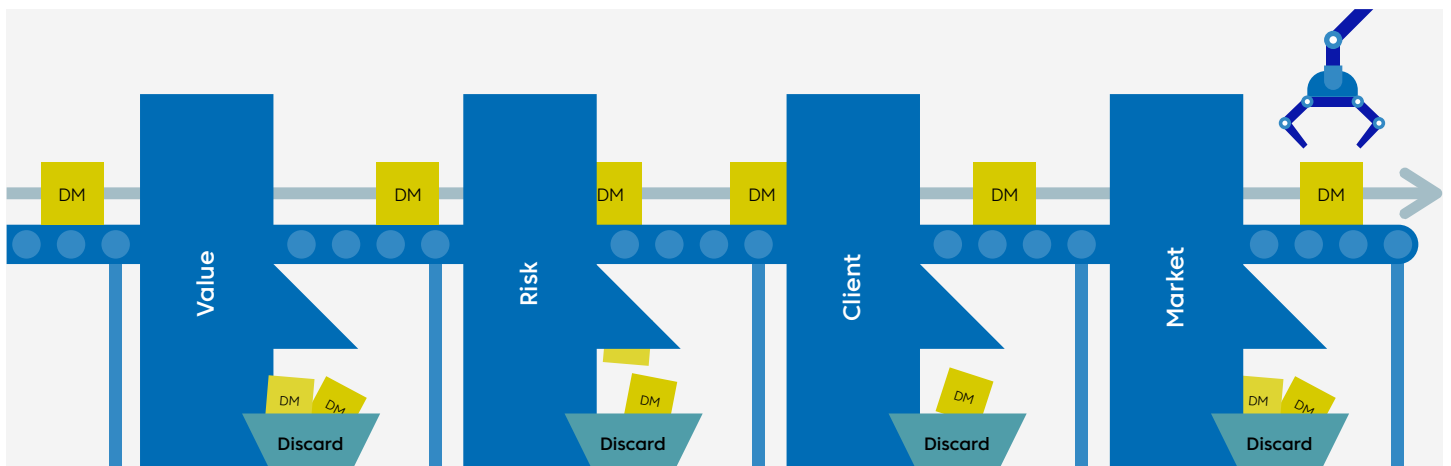
Step 4 - Market context: The fourth step draws on market sounding to evaluate the current appetite, capacity and capability of the market in relation to each of the remaining delivery models.

Tool 2 - Commercial Strategy Developer

With a delivery model selected, the client can now build the commercial strategy, tailoring the packages, contracts and reward mechanisms to deliver value and mitigate their risk profile.

Step 1 – Packaging approach: The packaging approach defines the specific contracts/ packages to be delivered, these are selected to fit within the delivery model from the catalogue of consultancy and contractor business models. This catalogue categorises the business models on the basis of the Value Profile they deliver and risks they can mitigate – supporting informed choices in the design of the packaging strategy.

Step 2 – Contract incentives, risk & reward structure: The second step tailors the packages to the project specific risk profile, establishing who can mitigate the identified risks and what incentive mechanism will support them in doing so. It also sets out the principles of the payment/ revenue structure such as fixed price, open book.



Tool 2 – Client Delivery Model Selector

Module 3: Procuring for Value

Having set the Value Profile, Value Indices and chosen a Delivery Model and Commercial Strategy, the project is ready to go to market using a transparent procurement process that selects on best value.

Module 3 enables clients to use the IVI as the primary means to evaluate choices between suppliers, embedding the **Procuring for Value** tool into the procurement process, and providing transparency to the market on how decisions will be made. When combined with the outputs from Module 2, this will create a streamlined process that delivers faster, better informed decisions.

The selection process is seeking to identify the supplier(s) that offers the highest overall value - not simply the cheapest bid. By clearly communicating to the market the **value drivers** for the project, bidders are better able to tailor their responses; innovating and differentiating based on the principle of adding value rather than minimising cost.

As bidders are provided with a clear set of quantifiable metrics, measures, benchmarks and performance ranges against which decisions will be made, the **Procuring for Value** tool will enable bidders to test and optimise their proposals prior to submission, confident

that they are submitting their best option – one that complies with all key value criteria required for that project and with the maximum IVI.

Tender returns are measured against their respective IVI scores and – alongside a streamlined commercial assessment and risk review – a decision is made based on the tender return with the highest IVI, and which meets the minimum standards set out in any additional value indices.

A contract is signed which supports whole life value delivery, and based on the output from Module 2, encapsulates the terms and conditions, appropriate insurance products, approaches to IPR and incentivisation.

Not only will the PfV tool help to produce a fair, transparent and swift procurement decision for the project, it will also establish a broader market where value is increasingly understood, consistently measured and better delivered across multiple projects and different sectors.

Capital	Baseline	Supplier 1	Supplier 2	Supplier 3
Natural	100	110	190	150
Social	250	180	275	235
Human	150	50	120	90
Manufactured	200	100	350	200
Financial	300	500	330	400
Total IVI Score	1000	940	1265	1075
Design Quality	250	200 (Fail)	230 (Pass)	260 (Pass)
Additional Index 2	300	310 (Pass)	405 (Pass)	350 (Pass)

Procuring for Value – Comparing Bids by IVI and Additional Indicators



Module 4: Ongoing Value Measurement

Ongoing measurement and benchmarking are key to ensuring that value drivers are being met. Not only can individual project and operational performance be measured, but when combined with benchmarks from other projects, it is possible to improve decision-making for future schemes, using data to understand which approaches or drivers can maximise value across the wider investment portfolio.

There are three tools in Module 4. The first measures project performance – during design, construction and up to handover – where project metrics and benchmarks allow a live IVI score to be calculated, based on both leading and lagging indicators. A live IVI allows clients and the industry to understand what is working well and whether there are elements that may need intervention or improvement to maintain value.

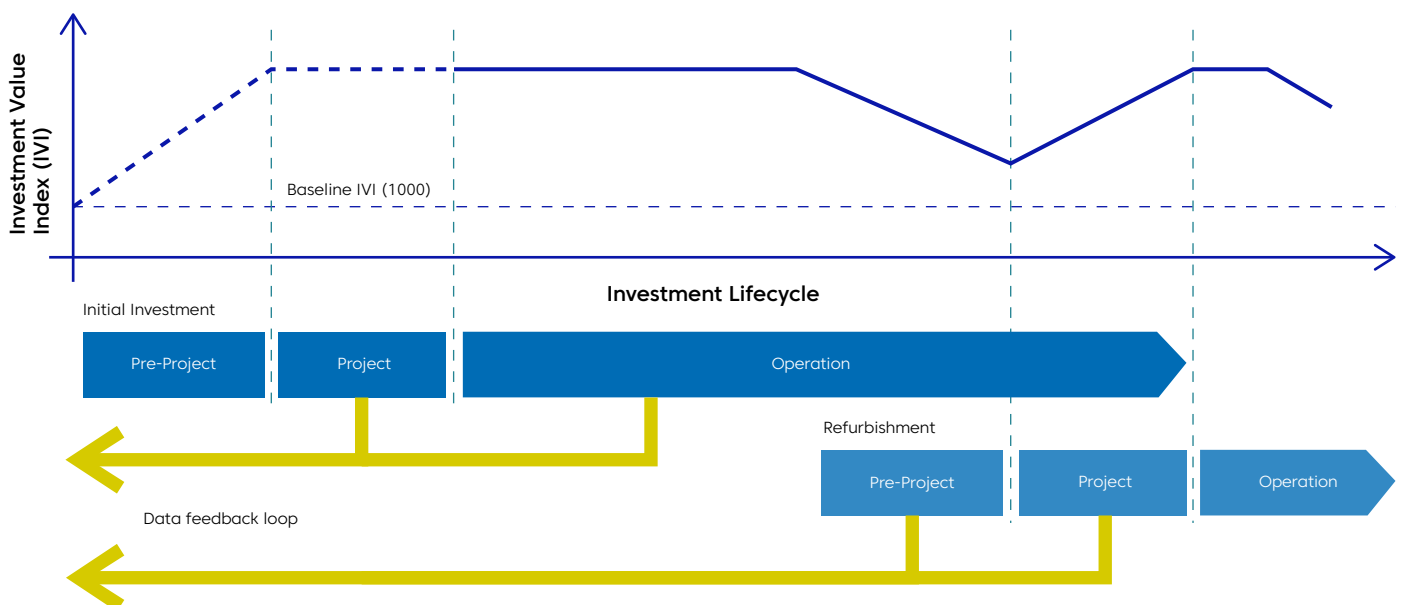
Incentivisation in the contract may be linked to the IVI achieved at handover and will be based on actual project performance and predicted operational performance. As a project transitions from delivery to operation, those measures associated with ‘project outcomes’ will no longer be measured but will become embedded as part of the asset’s DNA.

The second tool measures operational performance. Whilst the value drivers remain the same, the metrics and the methods of measurement will vary – in some cases using sensors and remote monitoring to establish actual performance.

Throughout the investment lifecycle, the Value Profile provides a reference point for informed decision-making, with the IVI providing clients and building operators with a mechanism to identify whether value is being maintained, where value can be optimised, and when new capital interventions are required.

The third tool uses metrics fed back from multiple projects to build a rich data set of overall performance across a portfolio, for example building understanding of which value drivers are being delivered well, which interventions have consistently proven to improve value or which suppliers are creating the most added value.

Using this data can help policy-makers and clients improve evidence-based decision-making. Moreover, businesses can understand their own performance, helping them to identify opportunities for improvement and differentiation.



Monitoring Value throughout the Investment Lifecycle

About the Construction Innovation Hub

The Construction Innovation Hub brings together world-class expertise from the Manufacturing Technology Centre (MTC), BRE and the Centre for Digital Built Britain (CDBB) to transform the UK construction industry.

With £72 million from UK Research and Innovation's Industrial Strategy Challenge Fund, and working around the four core themes of [Value, Manufacturing, Assurance and Digital](#), we are changing the way buildings and infrastructure are designed, manufactured, integrated and connected within our built environment.

We are a catalyst for change. We are driving collaboration to develop, commercialise and promote digital and manufacturing technologies for the construction sector. We are helping build smarter, greener and more efficient buildings much faster and cheaper than we currently do.

Research is helping us understand how the industry needs to change in terms of skills, product standards, capacity and innovation. This is combined with an academic programme to create the security-minded frameworks and rules that will underpin the future digital built environment and grow exports for UK know-how.

We are working closely with other initiatives as part of the Government's Transforming Construction challenge programme. Through collaboration across the sector, we can provide a better-built environment for future generations.

Further information

For further details about the Construction Innovation Hub or the Value Toolkit, please contact:

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