



## THE BUSINESS CASE for Integrated Collaborative Working

### Why do it?

Integrated Collaborative Working has been proven to deliver.....

- outcomes that better meet the needs
  - faster, safer and more sustainable delivery methods
  - lower capital and/or lower whole life cost
  - major reductions in waste and inefficiency
  - significantly improved predictability in time, cost and profit
  - shared risks and rewards
  - continuously improving longer term relationships
  - enjoyable and fulfilling experiences based on trust and respect
- ...when compared to 'traditional' methods

“The group has been persuaded by the weight of evidence that material benefits have arisen in almost every instance where the parties have taken active and purposeful steps to collaborate.”

*Profiting from Integration: Report of the Strategic Form Integration Task Group November 2007*

On the following pages the business case tests and confirms a simple “cause and effect” proposition:

*“The more **integrated** and **collaborative** your team is, the more **successful** your projects will be and the more **benefits** they will deliver **for you all**”*

Alternatively...

“If we do what we’ve always done we’ll get what we’ve always got.”

*Sir Michael Latham*



## The business case for integrated collaborative working

### Measuring integrated collaborative working – using the maturity matrix: the heart of the business case

How do you determine how well integrated you are and how collaboratively you are working?

A simple maturity measure assessment matrix (below) has been developed drawn from the maturity assessment in the [Strategic Forum Integration Toolkit](#) and the Constructing Excellence Tracker Tool.

The maturity measures matrix enables the collective team maturity to be scored. Team members representing all parts (or tiers) of the team privately review and decide which level box for each attribute best represents the project from their perspective. These scores are collected together and averaged to give a team attribute score. The project score is the sum of the six attribute scores, converted to a percentage of the maximum (36).

### Maturity measures matrix (a full page version is available at the end)

Integrated Collaborative Working Maturity Measures						
Attribute	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
<b>Early Involvement:</b> Consulted = Not paid Involved = paid	Client Side determines brief and cost plan. Design Side involved after brief developed. Implementation Side consulted about products. Implementation Side involved after design 'complete' to detail and deliver.	Client Side determines brief and cost plan. Design Side involved after brief developed. Implementation Side consulted about products. Implementation Side involved after design 'complete' to detail and deliver.	Client Side involves Design Side during brief and cost plan development. Implementation Side consulted about products & buildability. Implementation Side involved after design 'complete' to detail and deliver.	Client Side involves Design Side during brief and affordability development & lead implementation Side during design. Remaining implementation Side consulted about products & buildability & involved after design 'complete'. Design Side supports implementation Side in detailing and delivery.	Client Side involves Design Side & lead implementation Side from inception. Remaining implementation Side involved during design development. Design Side supports implementation Side in detailing and delivery. FM consulted on operability.	All sides involved from inception. Parties involved in design of all elements for which they have delivery or operational responsibility. Team utilises the most appropriate skills on offer.
<b>Selection By Value</b>	Client Side sets strategy. All parties appointed sequentially using lowest price competitive tendering.	Client Side sets strategy. Design Side appointed on value/price. Implementation Side appointed on lowest price tenders.	Lead implementation Side appointed on two stage value/price, remaining implementation Side on lowest price.	Client Side, Design Side & lead implementation Side set strategy. DS appointed on value. Lead implementation Side appointed on two stage value/price, remaining implementation Side on lowest price.	Client Side, Design Side & lead implementation Side set strategy. Design Side appointed on value. Lead implementation Side appointed on value, remaining implementation Side and FM on value/price.	Whole team agrees and implements strategy. All parties appointed on value, based on ability to understand & deliver the lifecycle needs. Collaborative team selection tools are used.
<b>Common Processes &amp; Tools</b>	Client Side tries to impose procedures & methods but everyone uses their own, usually paper based.	Client Side & Design Side use complementary systems. Lead implementation Side applies collaboration tools but delivery side uses own systems in parallel, mostly paper based.	Client Side & Design Side harmonise systems. Lead implementation Side agrees collaboration tools with key implementation Side. Remaining implementation Side operates own systems in parallel, some use of ICT.	Client Side & Design Side harmonise systems & collaboration tools with lead/key implementation Side. Remaining implementation Side operates own systems in parallel, ICT frequently used.	Client Side, Design Side and lead implementation Side agree collaboration tools with key implementation Side. Collaboration tools harmonised with remainder of implementation Side & FM. ICT mostly used.	All parties agree collaboration tools and apply ICT enabled open transparent methods and protocols selected to support the ongoing operation of the asset(s).
<b>Performance Measurement</b>	Time & price performance is measured against the accepted tender and tender summation.	Client Side applies time, price & quality KPI's to Design Side. Implementation Side measures time & price performance against tender & tender summation.	Client Side & Design Side collectively agree a range of KPI's. Lead implementation Side has time, price & quality KPI's allocated. Remaining implementation Side measures performance against tender.	Client Side, Design Side and lead implementation Side utilise industry KPI's and agree risk allocation. KPI's allocated to remainder of implementation Side and FM.	Whole team (including FM) utilises industry KPI's. Team agrees risk allocation. Team regularly measures performance including post completion.	Whole team utilises industry wide KPI's, shares risk allocation, agrees continuous improvement mechanisms from inception & routinely measures performance including ongoing lifecycle.
<b>Long Term Relationships: "Frameworks" includes all forms of long term agreements.</b>	Parties are appointed on a project by project basis from open invitation. Relationships depend on regularly winning tenders.	Some parties are appointed from preferred (limited tender) pool, with the remainder from open invitation.	Some parties are appointed from frameworks but still tendered, remainder from pool or open invitation.	Frameworks for key parties, some renegotiated some limited tender, remainder from partners' established supply chains by limited tender. Client specific modern 'partnering' arrangements (which include no retentions) encourage some key partners to openly collaborate. Remainder on partners' bespoke forms.	Frameworks for all key parties and supply chains for remainder, most appointments by negotiation. Client specific modern 'partnering' arrangements encourage all key partners to openly collaborate. Remainder on consistent back to back agreements.	All parties selected from established frameworks based on best skills match & using pre-agreed profit & cost mechanisms. Only industry wide unamended collaborative arrangements are used, which align mutual benefits for all with delivery of collectively agreed success criteria including wholelife performance.
<b>Modern Commercial Arrangements</b>	Each party procures using its own Terms & Conditions which rigidly focus on non-performance.	Bespoke contract forms applied to key parties but most are on rigid independent arrangements.	Flexible contract forms allow some lead parties to track change and adjust accordingly. Most are on rigid independent arrangements.			
<b>Client Side</b>	Owners, occupiers, funders, and users, other customer stakeholders and consultants and others whose primary activity is the development of designs (including cost advisors)					
<b>Design Side</b>	Contractors, subcontractors, specialists, manufacturers, suppliers and others whose primary activity is the detailing, manufacture, assembly and construction of built environment facilities					
<b>Implementation Side</b>						
<b>Facilities Management (FM)</b>	Maintenance, servicing, support and others whose primary activity is the management and upkeep of built environment facilities					

For example, if team of 9 members scored "Selection by Value" with 5 team members selecting Level 3 and 4 team members selecting Level 4, then the team score for "Selecting by Value" would be 3.4. Supposing the scores for the other attributes were 2.9, 3.1, 3.9, 4.7 & 3.6 then the project score would be 21.8 out of 36 which is 60%.

For this score to be truly representative it must include team members from the whole supply chain and scores should be collected anonymously, ideally using an independent third party.



## The business case for integrated collaborative working

### Measuring success of the achieved outcomes – using the success matrix

A success measures matrix has also been developed to enable project performance to be measured, shared and compared. When the integrated team is assembled, right at the start of the project, the objectives need to be agreed and weighted (prioritised) and entered into the matrix.

The attributes of success, the objectives, are collectively agreed by the team from client through all key supply chain members, ideally in an open facilitated workshop environment. Each attribute is assessed by the whole team and allocated a maximum weighting of 30% and a minimum of 5% except safety and sustainability which should each be a minimum of 10%.

*Project success matrix (a full page version is available at the end)*

Integrated Collaborative Working Success Measures			
Attribute	Weighting	Project Performance	Score
Success Criteria 1 (e.g. Functionality)			
Success Criteria 2 (e.g. Flexibility)			
Success Criteria 3 (e.g. Whole life cost)			
Sustainability Criteria (e.g. Waste / energy )			
Predictability Time			
Predictability Cost			
Productivity			
Profitability			
Defects			
Safety			
Totals	100%		

To enable comparison with others, industry ‘standard definitions’ of attributes are used, with the exception of the “success” and “sustainability” attributes which will need to be defined by the team.

On completion project performance is assessed by the same team who developed the matrix and have been evaluated for maturity. As with the maturity matrix, performance for each attribute is evaluated by each team member privately and averaged before inclusion. Again the use of an independent third party to collate and return team evaluations is recommended. A poor (1) to exceptional (10) scale of evaluation is used.

Once the team performance evaluation is available this can be converted to success scores using the measurement tools found on KPI Zone ([www.kpizone.com](http://www.kpizone.com)) the pan industry comparator database maintained by Constructing Excellence.



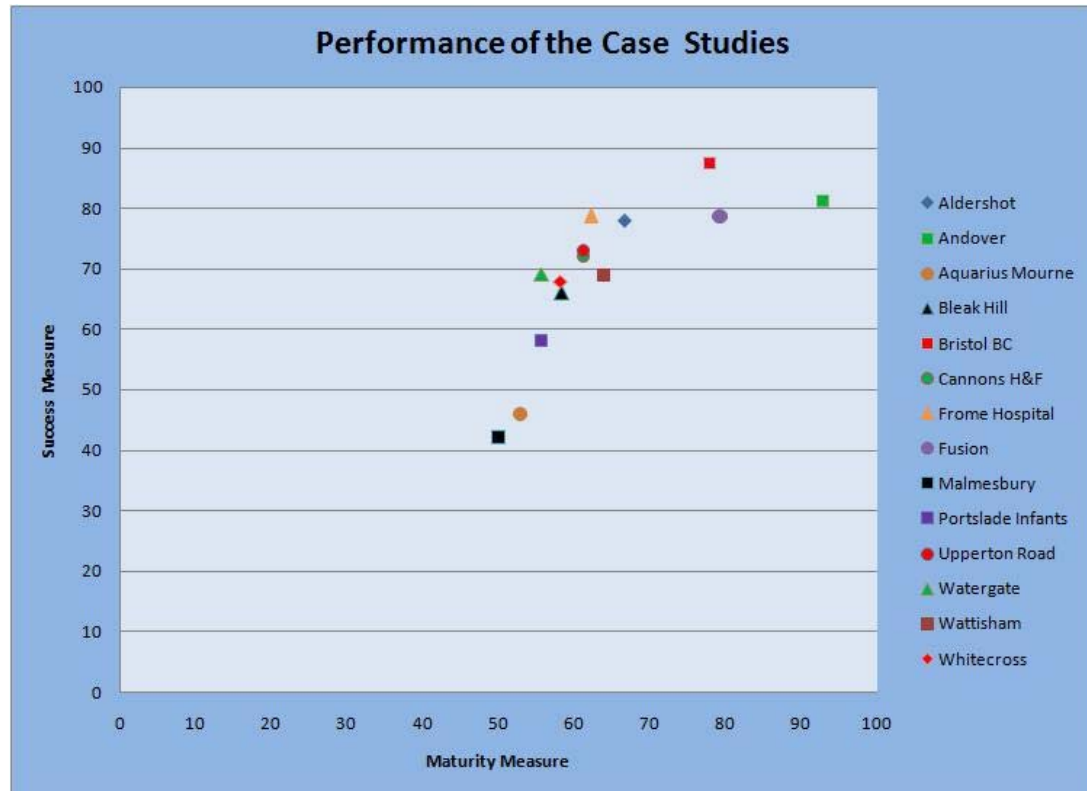
## The business case for integrated collaborative working

### Evaluating performance and comparing it with others

So you have a percentage score for maturity and a percentage score for success. How do you use these scores to evaluate your performance?

The Strategic Forum called for analysis of case studies in integrated collaborative working where sufficient historic data is available; so far 14 studies have been completed and plotted on a graph (below).

#### Case studies - demonstration of cause and effect



As can be seen, the more integrated and collaborative these projects have been the more successful have been the outcomes for all parties. Simply by plotting your team scores on this graph you can see how you compare with the best.

Knowing that project success is directly linked to maturity means you do not need to wait for completion to look for improvements. By focussing on improving the integration and collaboration as you go you can improve the likelihood of success. Most notable is the mid range effect where even a small improvement in maturity leads to a major improvement in success.

**More case studies are ongoing but why wait? The message is already clear: Integrated Collaborative Working delivers greater success.**



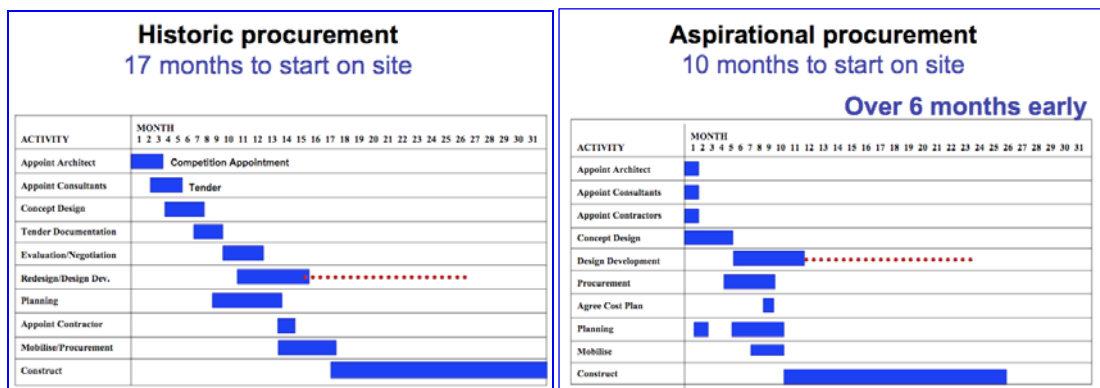
## The business case for integrated collaborative working

### Why does integrated collaborative working deliver when other methods do not?

There are lots of reasons for this and they are well documented; better planning, process improvements, parallel working, waste elimination are just a few of these, but the single most significant element is the **early assembly of the whole team**. Take a look at the following example:

On the left hand side you can see the timeline to procure using the “historic” traditional sequential appointment method for a conventional project. It takes some seventeen months to start on site.

Using “aspirational” integrated procurement you can see on the right hand side how this can lead to a significant reduction, in this case it takes ten months to start on site – more than **six months** earlier.



This shows how committing to the team right from the start leads to impressive savings in time alone and some projects will fare even better, commencing physical works right from the start and saving much of the remaining 10 months. We all know that time and cost are interlinked and so time saving means cost saving too.

But that’s not where the benefits end, indeed the most valuable effect of early involvement is the collaboration between team members from all parts of the supply chain. This leads to better solutions being adopted, the elimination of the wasteful processes and procedures traditional fragmented protectionist methods have created, and the full engagement, commitment and ownership of an integrated team - paid for its collective contribution for the duration and with one planning and one commercial focus, able to deliver right first time installation, prefabrication, off site manufacture and assembly etc. all leading to yet further reductions in construction time on site....

***Quite simply it’s time to change the way we get the team together.***



## The business case for integrated collaborative working

For more guidance look up the following:

CIC's "[Selecting the Team](#)" tool which gives step by step guidance on how to select and appoint an integrated team in a way which provides a justifiable and auditable trail.

The Strategic Forum's [Integration Toolkit](#) which, drawing on the experiences of leading practitioners, gives guidance on how to integrate and collaborate from the earliest identification of a business need through to project proving and operation.

OGC's [Achieving Excellence in Construction guides](#) which provide an explanation of how to achieve the [common minimum standards](#) for government procurement

All of which confirm.....

*"The more **integrated** and **collaborative** your team is, the more **successful** your projects will be and the more **benefits** they will deliver **for you all**"*

### Case proven! Will you ignore it?

Also look out for the following plain English Guides which are being developed to support your transition to integrated collaborative working

- Best Practice Construction Procurement
- Early Contractor and Supplier Involvement
- Collaborative Contracts
- Fair Payment in Construction
- Training for Integration
- Integrated Project Insurance

*Where to find out more: [www.areyouthereyet.co.uk](http://www.areyouthereyet.co.uk)*



Business case developed and drafted by Kevin Thomas CCG supported by Jaz Vilku CPA, Martin Davis SEC Group, Mark Wakeford CC and Peter Cunningham CE as part of the Strategic Forum's Integration Task Group.



## THE BUSINESS CASE for Integrated Collaborative Working

### Guidance notes for using the measurement tool

These guidance notes are designed to help you get the most benefit from using the measurement tool developed in support of the business case for Integrated Collaborative Working.

#### **The tool comprises two parts:**

1. Integrated Collaborative Working Maturity Measures Matrix
2. Integrated Collaborative Working Success Measures Grid

The Maturity Measures Matrix is used to assess the level of maturity in respect of Integrated Collaborative Working within the project/programme being evaluated.

The Success Measures Grid is used to measure the performance of the project/programme once completed, but it requires information to be included from inception to be fully effective.

#### **Using The Tool – The Maturity Measures Matrix.**

The matrix contains a description of each of six levels of maturity under the six attributes of integration and collaborative working. As with any subjective tool there is some opportunity for interpretation which may differ depending on personal perspective and position in the supply chain. To overcome this, the maturity measures matrix should be used on a “360<sup>o</sup>” basis as follows:

- Representative should be identified from each of the “sides” involved (Client, Design, Implementation & Facilities Management). It is important that all sides are consulted or the result may not characterise the whole team and the opportunity to identify areas of improvement may be lost.
- A minimum of 8 -10 views should be sought to maintain confidentiality of feedback, but may need to be greater depending on the number of core organisations concerned.
- Every effort should be made to ensure those involved include key suppliers and/or manufacturers or other partners below tier 1; without these the assessment may not be valid.
- Representative should be asked to complete the matrix in private. Attempting to use the matrix in “open” forum may appear more collaborative by seeking consensus, but experience shows that groups can

## Guidance notes for using the measurement tool

easily become dominated by single individuals and/or the backdrop of commercial relationships can impact on people's willingness to be genuinely open, honest and realistic.

- Each representative should be sent the matrix and asked to review the statements and identify the level of maturity they believe is appropriate for each attribute in the matrix. This provides the representatives attribute scores e.g. level 1 scores 1, level 2 scores 2 and so on.
- Each representative should return the scores to be collated and aggregated. Note the use of a third party, i.e. an individual or organisation perceived not to have a vested interest in the project/programme, is strongly recommended for sending out, receiving and collating results.
- Representative scores for each attribute are aggregated to obtain the team attribute score. For example the 'Early Involvement' team score might be =  $\frac{\text{Representatives Scores } (2+3+3+4+3+2+2+4+2+3)}{\text{Number of Representatives } (10)} = 2.8$

Use one decimal place as this helps to "position" the team, in this case in level 2 but approaching level 3.

- The six team attribute scores (one for each attribute) are then added together to obtain the project/programme maturity (maximum 36). This is turned into a percentage by dividing the maturity score by the maximum score (36) and multiplying by 100.

### Using The Tool – The Success Measure Grid.

Unlike the Maturity Measure Matrix this grid should ideally be completed in open forum and by consensus with the team. The tool essentially confirms the objectives and relative priorities of those objectives and as such must have the buy in of all key parties. Any disagreement or misunderstanding of priorities for the project/programme could have serious consequences later. The team who develop the grid should, wherever possible, include the same representatives who will be asked to score it at completion and also undertake the maturity assessment.

The recommended steps for completion of the Success Measure Grid are:

- Ensure the team have identified all the key success criteria for the project/programme, in addition to the industry "standard" criteria (predictability of time and cost, productivity, profitability, defects and safety) these might be outcomes such as functionality, aesthetics, flexibility, security, operability, recycling etc.
- The team need to agree the three most important success criteria above the industry standard criteria, plus one sustainability criteria. This should



## Guidance notes for using the measurement tool

include lifecycle considerations associated with Capital/Revenue trade off and implications on business expense (what is known as the 1/5/200 rule).

- For non-standard criteria (the first 4 on the grid), the team will also need to agree what will constitute success in terms of unacceptable, average and superior performance to be applied later when scoring the outcomes.
- These criteria then need to be prioritised to enable everyone to be clear about the relative significance of criteria against each other. This is achieved by ranking from highest to lowest in importance and then allocating an appropriate weighting to reflect that ranking. To enable realistic assessment and future comparison with other projects, a maximum weighting of 30% and a minimum of 5% should be applied to any one criteria, with safety and sustainability reflecting their industry wide significance with a minimum weighting of 10%.
- The grid can then be completed.

Once the project/programme is complete the remainder of the grid can be completed as follows:

- Assemble the team in open forum.
- Review each of the success criteria and allocate a performance score. Standard criteria will be the KPI %age achieved using the Constructing Excellence industry data available at [www.kpizone.com](http://www.kpizone.com). Non-standard criteria will be evaluated on the basis on the agreed success criteria performance measurement on a 0 – 100 scale for compatibility with industry KPI's.
- Multiply the performance score by the weighting and divide by 100 to produce the success score for each attribute of success. E.g. if sustainability scored 80 and had a weighting of 20% its success score would be  $(20 \times 80) / 100 = 16$
- Add the attribute scores together to obtain the project/programme success measurement score. The maximum score is 100.

As with the Maturity Matrix assessment the use of an independent third party is recommended both in facilitating the development of the prioritised success criteria and in evaluating the outcomes.

When both maturity and success measures are available the result can be plotted on the business case graph to enable comparison with pan industry performance. Such comparison should enable improvement targets to be identified.

### Integrated Collaborative Working Maturity Measures

Attribute	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
<b>Early Involvement:</b> Consulted = Not paid Involve(d) = Paid	Client Side determines brief and cost plan. Design Side involved after brief developed. Implementation Side involved after design 'complete' to detail and deliver.	Client Side determines brief and cost plan. Design Side involved after brief developed. Implementation Side consulted about products. Implementation Side involved after design 'complete' to detail and deliver.	Client Side involves Design Side during brief and cost plan development. Implementation Side consulted about products & buildability. Implementation Side involved after design 'complete' to detail and deliver.	Client Side involves Design Side during brief and affordability development & lead Implementation Side during design. Remaining Implementation Side consulted about products & buildability & involved after design 'complete'. Design Side supports Implementation Side in detailing and delivery	Client Side involves Design Side & lead Implementation Side from inception. Remaining Implementation Side involved during design development. Design Side supports Implementation Side in detailing and delivery. FM consulted on operability.	All sides involved from inception. Parties involved in design of all elements for which they have delivery or operational responsibility. Team utilises the most appropriate skills on offer.
<b>Selection By Value</b>	Client Side sets strategy. All parties appointed sequentially using lowest price competitive tendering.	Client Side sets strategy. Design Side appointed on value/price. Implementation Side appointed on lowest price tenders.	Client Side & Design Side set strategy. Design Side appointed on value/price. Lead Implementation Side appointed on two stage value/price, remaining Implementation Side on lowest price.	Client Side, Design Side & lead Implementation Side set strategy. DS appointed on value. Lead Implementation Side appointed on two stage value/price, remaining Implementation Side on lowest price.	Client Side, Design Side & lead Implementation Side set strategy. Design Side appointed on value. Lead Implementation Side appointed on value, remaining Implementation Side and FM on value/price.	Whole team agrees and implements strategy. All parties appointed on value, based on ability to understand & deliver the lifecycle needs. Collaborative team selection tools are used.
<b>Common Processes &amp; Tools</b>	Client Side tries to impose procedures & methods but everyone uses their own, usually paper based.	Client Side & Design Side use complementary systems. Lead Implementation Side applies collaboration tools but delivery side uses own systems in parallel, mostly paper based.	Client Side & Design Side harmonise systems. Lead Implementation Side agrees collaboration tools with key Implementation Side. Remaining Implementation Side operates own systems in parallel. Some use of ICT.	Client Side & Design Side harmonise systems & collaboration tools with lead/Key Implementation Side. Remaining Implementation Side operates own systems in parallel. ICT frequently used.	Client Side, Design Side and lead Implementation Side agree collaboration tools with key Implementation Side. Collaboration tools harmonised with remainder of Implementation Side & FM. ICT mostly used.	All parties agree collaboration tools and apply ICT enabled open transparent methods and protocols selected to support the ongoing operation of the asset(s).
<b>Performance Measurement</b>	Time & price performance is measured against the accepted tender and tender summation.	Client Side applies time, price & quality KPI's to Design Side. Implementation Side measures time & price performance against tender & tender summation.	Client Side & Design Side collectively agree a range of KPI's. Lead Implementation Side has time, price & quality KPI's allocated. Remaining Implementation Side measures performance against tender.	Client Side, Design Side and lead Implementation Side utilise industry KPI's and agree risk allocation. KPI's allocated to remainder of Implementation Side and FM.	Whole team (including FM) utilises industry KPI's. Team agrees risk allocation. Team regularly measures performance including post completion.	Whole team utilises industry wide KPI's, shares risk allocation, agrees continuous improvement mechanisms from inception & continually measures performance including ongoing lifecycle.
<b>Long Term Relationships:</b> "Framework" includes all forms of long term agreements	Parties are appointed on a project by project basis from open invitation. Relationships depend on regularly winning tenders.	Some parties are appointed from a preferred (limited tender) pool, with the remainder from open invitation.	Some parties are appointed from frameworks but still tendered, remainder from pool or open invitation.	Frameworks for key parties, some negotiated some limited tender, remainder from partners' established supply chains by limited tender.	Frameworks for all key parties and supply chains for remainder, most appointments by negotiation.	All parties selected from established frameworks based on best skills match & using pre-agreed profit & cost mechanisms.
<b>Modern Commercial Arrangements</b>	Each party procures using its own Terms & Conditions which rigidly focus on non-performance.	Bespoke contract forms applied to key parties but most are on rigid independent arrangements.	Flexible contract forms allow some lead parties to track change and adjust accordingly. Most are on rigid independent arrangements.	Client specific modern 'partnering' arrangements (which include no retentions) encourage some key partners to openly collaborate. Remainder on partners' bespoke forms.	Client specific modern 'partnering' arrangements encourage all key partners to openly collaborate. Remainder on consistent back to back agreements.	Only industry wide unamended collaborative arrangements are used, which align mutual benefit for all with delivery of collectively agreed success criteria including wholelife performance.

Client Side Owners, occupiers, funders, end users, other customer stakeholders and advisors (including cost advisors)  
 Design Side Consultants and others whose **primary** activity is the development of designs (including quantity surveyors)  
 Implementation Side Contractors, subcontractors, specialists, manufacturers, suppliers and others whose **primary** activity is the detailing, manufacture, assembly and construction of built environment facilities  
 Facilities Management (FM) Maintenance, servicing, support and others whose **primary** activity is the management and upkeep of built environment facilities

## Integrated Collaborative Working Success Measures

Attribute	Weighting	Project Performance	Score
Success Criteria 1 (e.g. Functionality)			
Success Criteria 2 (e.g. Flexibility)			
Success Criteria 3 (e.g. Whole life cost)			
Sustainability Criteria (e.g. Waste / energy )			
Predictability Time			
Predictability Cost			
Productivity			
Profitability			
Defects			
Safety			
Totals	100%		

Notes on using the success measures tool:

Weightings are team defined from onset and should be a maximum of 30% and a minimum of 5% for any one attribute, except safety and sustainability which should each be a minimum of 10%. Enter a number (5 - 30) for each attribute. The tool will automatically sum in the total box - check this reaches 100% when all the weightings are completed.

Success and Sustainability criteria are project defined (at the beginning), all other KPI's are industry defined. Enter the percentage of success achieved for each attribute i.e. 0 - 100. In KPI Zone this is derived from the industry comparators; for example you enter your accident incident rate into the KPI calculator and it will return the benchmark percentage score. For team defined attributes the measure of success should be agreed when agreeing the attribute.

Some project performance attributes have different impacts on different team members e.g. profitability and should therefore be measured on a 360° basis, which means scores are obtained from all representative parts of the project team/supply chain(s) and averaged before inclusion.

Once all the information has been entered the project success measures score will be the figure in the bottom right hand box