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| Trial project: Project Horizon | New delivery model / procurement route: Two Stage Open Book under TPC2005 |
| Cost savings targeted: 17.4% averaged over 5 years (15% achieved against spend in 2013) | |
| Other key benefits achieved: Improved warranties and quality control, additional employment and skills commitments and innovation through increased recycling/reduced landfill, creation of integrated project delivery team | |

| | | | | |
|-------------------------------|---------------------------|-------------------------|-------------------|-------------------------|
| Trial report sequence: | Kick off meeting | Brief / Team Engagement | Decision to Build | Build and Occupy |
| Cost saving basis: | Outline saving aspiration | Challenging cost target | Award Cost | Outturn Cost |

| Trial project details | |
|------------------------|--|
| Project title | Project Horizon |
| Clients | Surrey County Council |
| Project value | £100m |
| Form of project | Highways repair and improvement programme |
| Main contractor | Kier |
| Lead designer | Kier |
| Key suppliers | Aggregate Industries Marshall Surfacing |



Executive summary:

Through Project Horizon, Surrey County Council has worked successfully with its Tier 1 contractor Kier and Tier 2/Tier 3 supply chain members Aggregate Industries and Marshall Surfacing and to achieve substantial savings, improved quality and an integrated team culture in the delivery of capital highways repairs and improvement works across Surrey.

Project Horizon has demonstrated clearly the benefits of contract-led, properly structured early contractor involvement and supply chain improvement processes under Two Stage Open Book and Supply Chain Collaboration, and the further benefits that can be obtained when these are combined with forward planning of a longer pipeline of work. Project Horizon has been recognised in the Royal Academy of Engineering Report "Public Projects and Procurement in the UK" and has formed the basis for the Highways Maintenance Efficiency Programme (HMEP) Supply Chain Collaboration Toolkit.



Project summary

Project Horizon comprises a five year capital programme of highways repair and improvement works. The project is located across the county of Surrey and was procured by Two Stage Open Book following the EU procurement of a long-term contract. It involves a joint client/main contractor initiative leading to creation of new long-term relationships with Tier 2 and Tier 3 supply chain members and the development of integrated project teams. Its objective is to bring the Surrey local roads network to its optimal state, to reduce operating costs and provide wider economic benefits.

Project time line

- EU procurement process leading to Two Stage Open Book appointment of Kier under long-term contract (using TPC2005 standard form), February 2011
- Surrey business case to its members for Project Horizon, March 2012
- Joint planning and surveying undertaken with Kier, commencing June 2012
- Tier 2 and Tier 3 Supply Chain Collaboration processes leading to Two Stage Open Book appointments of Marshall and Aggregate Industries under STPC2005 standard form and multi-party Alliance, June-September 2012
- Commencement of integrated team working with Marshall Surfacing and Aggregate Industries, October 2012
- Development of fully integrated project delivery teams, November/December 2012
- Commencement of construction phase for multiple projects, April 2013
- Develop entire first year work streams, April-October 2013
- Delivery of first year work streams August 2013 to March 2014
- Collaboration on emergency flood repair work February to October 2014
- Launch of HMEP Supply Chain Collaboration Toolkit June 2014

Key project features

- New approach to Supply Chain Collaboration
- Substantial cost savings
- Collaboration and integration of the full team
- Innovations and improved sustainability
- Improved warranties

- Contributions to the local economy
- Improved employment and skills outputs
- Development of intelligent client capability

Client objectives and vision

Surrey County Council had already developed systems for Early Contractor Involvement in its previous work with Carillion Highway Maintenance and Ringway Infrastructure Services under TPC2005 forms of contract. It had achieved significant savings through development of a joint Tier 2 supply chain initiative with these contractors and established its vision as to how this should be taken forward following the Two Stage Open Book selection of Kier as its new Tier 1 contractor. Surrey also trialled new approaches to Tier 2/3 engagement through its work with the SE7 group of local authorities.

Surrey was aware that the efficiency of highway works is limited if contractors do not have visibility of the full details of a programme of work and if the entire supply chain are not involved at an early stage in planning the works programme. To overcome these problems, Surrey developed a five year capital programme for carriageway works and used Two Stage Open Book Supply Chain Collaboration processes to create an integrated supply chain that would enable delivery of the programme for a significantly reduced cost.

Surrey's vision is to demonstrate that the same techniques as those used on Project Horizon can achieve comparable savings and benefits for the SE7 group members and for other local authorities through creation of a Supply Chain Collaboration Toolkit pursuant to the Highways Maintenance Efficiency Programme. This Toolkit was launched in June 2014, using lessons learned on Project Horizon to provide the basis for other highway authorities to achieve comparable savings and improved value.

New procurement techniques and processes

Surrey used the TPC2005 standard form of contract which describes the processes for Two Stage Open Book procurement and Supply Chain Collaboration, and these were adopted by Kier, Aggregate Industries and Marshall Surfacing through a series of predefined activities. Kier, with support from Surrey County Council, ran an agreed process to select Tier 2 subcontractors and Tier 3 suppliers and to create



an integrated team for a five year £100m programme of capital highways and repair works. This enabled early collaboration with the selected Tier 2 and Tier 3 supply chain members so as to maximise savings, added value and joint identification of opportunities. Collaboration across the integrated team continued throughout the preconstruction phase of Project Horizon and is designed to deliver further innovations during the construction phase of the programme.

The processes implemented by Surrey with Kier, as described in the TPC2005 contract, enabled Kier to revisit their original annual Tier 2/Tier 3 supply chain appointments and to offer longer term, larger scale opportunities in return for savings and added value committed to at all levels in the supply chain.

Close analysis of skills and accountability throughout the members of the integrated team has supported the development of Surrey's capability as an intelligent client.

Two Stage Open Book and Supply Chain Collaboration enabled a culture of collaborative working at all levels of the supply chain as well as the creation of integrated project teams with better defined roles for individuals employed by the client, Tier 1 contractor and Tier 2/Tier 3 supply chain members.

The TPC2005 form of Term Partnering Contract underpins Two Stage Open Book and Supply Chain Collaboration as it sets out clear communication, design development, costing and risk management systems and provides contractual timetables for all Supply Chain Collaboration activities. It has been used with minimum amendments and with no liquidated damages, retentions, general liability caps or performance bonds.

Pursuant to the TPC2005 contract, the parties entered into a four-way Alliance Agreement to establish supplementary arrangements for joint working on Project Horizon.

The procurement techniques and processes implemented by Surrey County Council on Project Horizon were commended in the Royal Academy of Engineering Report "Public Projects and Procurement in the UK" published in February 2014.

Cost targets and savings

The first year of work on site was limited to an eight-month period by reason of additional time

required to secure commitment from Council stakeholders. During this eight-month period, the Project Horizon team achieved 12% savings against their 15% target for the first full year.

The targets for Project Horizon are 15% in Year 2 and 20% for years 3-5 (creating a 17.4% average) derived from:

- Procurement by Surrey of the Kier long-term contract incorporating ECI under Two Stage Open Book
- Supply Chain Collaboration by Surrey and Kier leading to the appointment of Marshall Surfacing and Aggregate Industries under Two Stage Open Book
- Ongoing collaborative working by the integrated team under a multi-party Alliance to secure additional qualitative and financial benefits, for example by means of alternative materials and recycling
- Creation of continuous improvement including ongoing value engineering

Surrey achieved savings of **16%** at the point of selecting Kier in 2011, against the prices previously paid for comparable works. Implementation of Two Stage Open Book Supply Chain Collaboration pursuant to the agreed TPC2005 and Alliance processes has already led to additional savings of **12%** achieved in the first eight months of work on site by Surrey County Council, Kier, Marshall Surfacing and Aggregate Industries. Total savings achieved by Surrey to date equate to 31%.

Percentage saving: Total of **33.4%** over five years

(**17.4%** targeted over 5 years, in addition to **16%** achieved in procuring Long Term Contract)

Specific Savings:

Analysis of the needs of Tier 1 and Tier 2/3 supply chain members led to specific savings being achieved after the first eight months of work on site through:

- Clarification of Surrey's brief and commitments at the time of procuring Kier (**16%**)
- Elimination of duplicated roles in an integrated team
- Visibility and continuity of pipeline of work through larger scale, longer term work offered to Kier by Surrey and in turn to Marshall Surfacing and Aggregate Industries (**5%**)



- Advance planning of work on each annual cycle **(2%)**
- Prompt payment of Marshall Surfacing and Aggregate Industries by Kier **(1%)**
- Closer involvement in the design and planning of individual tasks within the programme **(2%)**
- Availability of storage facilities in depots **(2%)**

Savings achieved beyond the first 15% will be shared between Surrey, Kier, Marshall Surfacing and Aggregate Industries under their Alliance Agreement.

Additional benefits

Targets measured under a balanced scorecard in the multi-party Alliance comprise:

- safety
- innovation
- cost and time predictability
- customer satisfaction
- employment and skills
- environmental responsibility and carbon footprint
- quality
- collaboration

Qualitative benefits achieved to date comprise:

- Improved whole life value, including agreement of ten year warranty for material and pavement design
- Improved quality control through joint risk assessments and integrated team agreement of appropriate surface treatments and monitoring work on site
- Improved apprentice commitments by Kier, Marshall Surfacing and Aggregate Industries, supplementing employment and skills commitments already agreed by Surrey and Kier under an Employment and Skills Plan in accordance with the CITB Client-Based Approach
- Lean programming of individual tasks leading to time savings
- Innovation through collaborative working, for example to increase recycling and reduce landfill

Analysis of the first eight months of work on site showed:

- 96% of schemes delivered with a ten year supplier warranty;
- no major remedial work required;

- no major health and safety incidents, additional improvements to drainage systems and footways as part of the agreed design solutions;
- over 50 complimentary letters received from residents and Council members.

Cultural change has been achieved in terms of:

- Development of intelligent client capacity for Surrey County Council with increased customer focus
- Better understanding of how Surrey's officers should work with (and how they should complement the roles and responsibilities of) the Tier 1 main contractor and Tier 2/Tier 3 supply chain members
- Improved stakeholder satisfaction through better communications with Surrey's members and with residents as regards access and delegated authority, for example allowing Kier to alter diversions
- New ways of working through collaboration to reduce duplication and waste

In order to embed and develop cultural change, the team have engaged Temporal Consulting to lead six monthly workshops that challenge behaviours and establish an agreed Cultural Development Programme.

Overall assessment

The assessment of the Trial Project Support Group is that there is clear evidence of systematic benefits being achieved by all parties through Two Stage Open Book procurement and Supply Chain Collaboration. The processes and systems for productive collaboration have been embraced by the client, the Tier 1 main contractor and Tier 2/Tier 3 supply chain members. As a result of this collaboration, the parties have shared information and developed systematically and transparently the solutions necessary to achieve significant cost savings. Following publication of an interim case study in July 2013, the appointed Project Mentor and Academic Partner have monitored the implementation of Project Horizon over the calendar year April 2013 to March 2014 so as to analyse fully implementation of the agreed integrated team structure and the Two Stage Open Book and Supply Chain Collaboration systems.

Project Horizon has demonstrated clearly the



benefits of contract-led, properly structured early contractor involvement and supply chain improvement processes, and the further benefits that can be obtained when these are combined with forward planning of a longer pipeline of work. Even though additional long-term turnover cannot be guaranteed, it is mapped out in a way that is credible to Tier 1 and Tier 2 supply chain members. It is also linked to a series of savings assumptions whereby if there is a lesser throughput of work, the team recognise there will be lower savings and less added value.

The direct relationships established with Tier 2/3 supply chain members do not affect the Tier 1 main contractor's warranty and its contractual responsibility for cost control and programming.

The Project Horizon team have achieved close engagement under pre-agreed contractual systems and have ensured that these are implemented through sustained effort to move away from traditional client and contractor cultures. This had required personal leadership and the recognition of differing stakeholder interests in client and contractor organisations who need to be identified, consulted and persuaded to adopt a new and bolder approach.

The Project Horizon team have created and trialled through the TPC2005 contract and their multi-party Alliance new systems of Two Stage Open Book and Supply Chain Collaboration that can be easily replicated by other local government clients on their respective highways programmes and potentially on other programmes of work. Other clients can lead and establish teams that replicate the Project Horizon approach without the delay or cost of new EU procurement processes.

Key Lessons

Following the close monitoring of Project Horizon over its first year in operation, lessons learned include the following:

- In addition to the training and support required to implement Two Stage Open Book and Supply Chain Collaboration, additional training is needed for implementation of integrated team working so as to ensure the parties do not revert to previous working methods
- Cultural transformation is at the heart of creating sustainable change and this requires a combination of strong contractual foundations and clear contract-led processes plus the

development of new delivery systems and embedding of new attitudes and commitments

- Investment by Surrey, Kier, Aggregate Industries and Marshall Surfacing in Project Horizon means that their new systems and techniques are now more readily available to other clients and their project teams

Miscellaneous

Authors:

- This case study has been developed for Constructing Excellence by Professor David Mosey of Trowers & Hamlins LLP/King's College London Centre of Construction Law as Project Mentor, in consultation with Alison Ahearn of Imperial College as Academic Partner

Key contributors include:

- Surrey County Council, Kier, Aggregate Industries and Marshall Surfacing

Background: Trial Projects programme

The Government Construction Strategy aims to change the relationship between clients and the entire supply chain within the industry. The trial projects perform a central role in delivering the Strategy's sustainable 15-20% reduction in costs and are currently testing three new procurement models (Cost-Led Procurement; Integrated Project Insurance; Two Stage Open Book) that were proposed by industry and developed by a joint task group. Case study reports are therefore an output of monitoring the progress and outcomes of the trial projects. They are produced at four stages: Kick-off Meeting; Brief/Term Engagement; Decision to Build; Build and Occupy. Other case study reports can be found at:

<https://www.gov.uk/government/publications/government-construction-strategy-trial-projects>

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PROJECT HORIZON TWO STAGE OPEN BOOK

1



LONG-TERM TIER 1 (TPC2005) CONTRACT UNDER TWO STAGE OPEN BOOK:

SURREY COUNTY COUNCIL AND KIER

2

LONG-TERM TIER 2/3 CONTRACT (STPC2005) UNDER TWO STAGE OPEN BOOK:

KIER AND AGGREGATE INDUSTRIES/MARSHALL SURFACINGS



3

MULTI-PARTY ALLIANCE GOVERNING SAVINGS ASSUMPTIONS, INNOVATION AND BALANCED SCORECARD:

SURREY COUNTY COUNCIL, KIER, AGGREGATE INDUSTRIES AND MARSHALL SURFACING



4

DEVELOPMENT OF THE INTEGRATED TEAM CULTURE

5

AUTHORISATION OF SUCCESSIVE PROJECTS UNDER TWO STAGE OPEN BOOK ORDERS GOVERNING PRECONSTRUCTION AND CONSTRUCTION ACTIVITIES



How the reported savings were achieved

| Strategic context | | Client | Collaborative | Supply chain |
|--|-----|--|---|---|
| Aggregation of demand | Yes | 5 year programme and increased Tier 2/3 supply chain opportunities | | |
| Significant committed spend | Yes | £100m programme | | |
| Standardised procurement / streamlined approval processes | Yes | | Joint Supply Chain Collaboration | Time savings proposed |
| Lean programming | Yes | | Joint preconstruction project programming | |
| Client cost data base | Yes | Published benchmarks | | |
| Performance management | Yes | | Alliance performance initiatives | |
| Common new delivery model characteristics deployed | | Client | Collaborative | Supply chain |
| Challenging cost target / open book | Yes | Annual increasing targets with open-book measurement | | |
| Affordable standardised output / outcome requirement | Yes | | Joint improvement of standard specifications | |
| Early contractor involvement | Yes | | Tier 1 contractor and Tier 2/3 supply chain members | |
| Lower tier engagement: fully integrated supply chain | Yes | | Early multi-party Alliance | |
| Lower tier engagement: innovation encouraged / achieved | Yes | | | Alternative materials and extended warranty |
| Standard form of contract with minimum amendments | Yes | TPC2005 | | STPC2005 |
| Effectively led change in team behaviours and practices | Yes | Support for development of team culture | | |
| Two Stage Open Book characteristics deployed | | Client | Collaborative | Supply chain |
| First stage selection of integrated team on open book basis and ability to deliver savings / project objectives | Yes | Open-book TPC2005 with Kier | Multi-party Alliance with open-book costs | |
| Joint work of integrated team (incl. Tier 1 and lower tier contractors) on design, risk management, reduced costs under early appointments | Yes | | Integrated teamwork under Alliance | |
| Approval to construct on basis of demonstrable ability of team to achieved targeted costs and progress against project objectives | Yes | Two Stage Order process under TPC2005 | Integrated team project procedure | |



| Other cross cutting initiatives deployed | | Client | Collaborative | Supply chain |
|--|-----|-------------------|---------------|--------------|
| Building Information Modelling | | | | |
| Procurement Routemap | Yes | Adopted by Surrey | | |
| Government Soft Landings | | | | |
| Project Bank Accounts | | | | |