



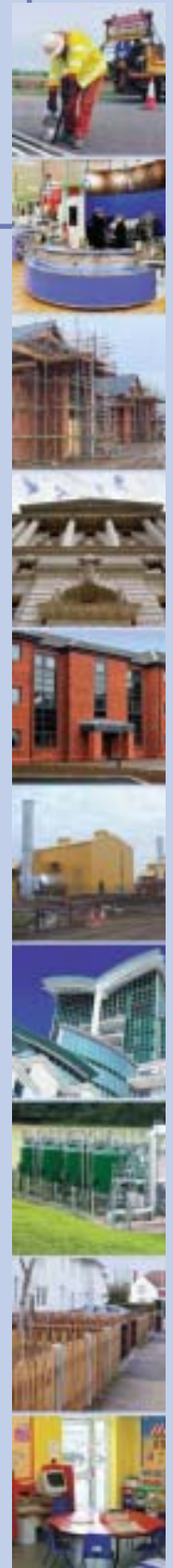
Building Success

Lessons from frequent clients
who got it right – ten case studies



■ The projects

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Foreword

In recent times, much of the change that has occurred in the construction industry has been driven by large experienced clients. This study shows the latest thinking from a variety of them and is, in many ways, a guide to the future for others.

This report throws up some interesting points. There is a marked difference between experienced clients, like utilities, who have a large number of projects in the same environment, and property developers, whose projects and end-users may be different. Their experiences have led them to adopt subtly different ways of working that create success. Yet, the underlying aims have been the same.

What they have sought to do is to provide a supply chain environment in which the 'hands-on' experience of first and second tier contractors and key suppliers is harnessed in such a way that innovation is encouraged and value is created. They have found that it is possible to balance risk in the commercial structure without stifling innovation.

The key to this lies in their approach to project definition and the team culture. A greater focus on how the ultimate end-user will work in the facility is leading to more 'output-based' definitions. This is not easily achieved, because it requires a major culture shift from the traditional 'silo' mentality of the past, where who does what was precisely defined.

This new approach gives the rest of the supply chain the opportunity to bring its experience to bear. This brings with it innovation, productivity gains and best value. The other benefit is that everyone in the team can have the opportunity to use their special knowledge which can be very motivating for the whole team. But on the other hand, this throws up the challenge of keeping the team together, for the knowledge that they have gained and for the relationships that they have built up.

The lack of continuity of projects has traditionally dissipated knowledge, as teams were dispersed. The lack of continuity also severed relationships. Now, there is a realisation that success depends as much on the 'soft' skills as the 'hard' skills. What these large experienced clients have learned is that creating supply chain environments that retain knowledge and relationships leads to building success. This is a new vocabulary for many in the construction industry.



Dennis Lenard
Chief Executive, Constructing Excellence

Summary of the findings

Among experienced clients a sharp distinction has emerged between 'serial' clients who build similar projects all the time for similar end-users, and 'parallel' clients who build a large number of projects for different end-users.

The 'serial' clients have been among the first to recognise the benefits of learning from experience and driving innovation. This has drawn them towards framework contracts in which the contractor is expected to contribute their expertise and also to innovate.

In contrast, 'parallel' clients will 'partner' to conduct contracts in a better way, achieving greater success. But in many cases this may fail to deliver the guaranteed amount of work over a long enough period of time for the real benefits to be found.

Culture is a major barrier to sharing and learning from best practice. Many large respected organisations, clients and contractors, quote 'competitive reasons'. Some top clients were unwilling to participate in this publication, suggesting that they are just using their power in the market and not doing anything different or innovative. Some top contractors were unwilling, for fear of giving away 'their secrets'. Yet, many contractors in framework agreements are expected to share knowledge and experience. This is good. Acting together and with their trade contractors, enables them to harness a benefit of scale.

One of the challenges for all clients is to achieve a building that can be used efficiently and effectively by the people that will eventually live or work in it. This appears to be most successful where the client has defined what he wants to use the building for, rather than what he wants it to look like. This enables the contractor, sub-contractors and the rest of the team to have an input into the design, using their particular experience on other projects that are in some way similar. This means you are bringing together all of that knowledge for this project not just that of the architect, who cannot possibly understand how every building is going to be used in detail. This is especially the case for more technical buildings like hospital theatres and those used by the utilities.

The other benefit is that everyone can have the opportunity to use their special knowledge which can be very motivating for the whole team. It binds them together, focusing on the end product not their enforced role. This does not cut out the architect. In some of these projects the architects have stayed with the project, working with the contractor and taking on board better ways of doing things. In one case the architect had included a window in the design which was quite expensive. When he realised that money could be better spent in other areas, he was content to accept the change.

Projects also seem to work better if the design evolves to meet the clients needs as it goes along. This means the costs can be monitored, so that if this is going off plan, decisions can be taken on what to do. It also gives the client more specifically what he wants in terms of what he will use the building for. But, this takes some managing by showing the user exactly what he will get, and requires a firm discipline to freeze the design at agreed gateways.

The industry is beginning to recognise knowledge management in the sense of specifying the people it wants to work on projects. Keeping the team together is crucial but is probably the real challenge. It can work for serial clients building similar projects, but today there are many serial clients with inexperienced end users. This happens for example in the education and health sectors. The clients like the NHS and local authorities are frequent clients but the end users are not and these are the people who are often managing the project day-to-day to make sure it is what they want. One contributor was extremely concerned that all the knowledge he had built up during the project was now being lost. This has to be the next challenge. The codification of knowledge, or simply who knows what, in an organisation is still an issue within the industry.

ten case studies



Checklist for success



Involve the contractor and key supply chain members as early as possible. People tend to think they know their business best but contractors will bring with them their experience from working with other clients, and they can adapt and adopt this for your project. So bringing on a contractor early can actually save time.

Try to keep the same team together for later projects so that knowledge is retained and used again. This is especially true for projects that are repeated because you benefit from their learning curve on the project. Look at ways to share lessons from incidents so that they don't happen again. Codify the project's learning points to build them into future work. However remember to bring in new people as well or there will be no innovation. Knowledge sharing can work better if the parties co-locate on site.

Define a building by its outputs in terms of what happens inside it and not just what it will look like. Get the people who will actually use the facilities to evaluate what they are getting and whether it will do the job. Use a test room so that the client can see exactly what they are getting before it is too late to change it. 3D visualisation can help with the up-front planning and problem solving. If a contractor can understand the end-user's operation and issues as well as their own, they can add value.

Managing end user expectations is as important as the build. Introduce the client and end-user to the people who will actually be running the project so that they can see the shared values and this will give them confidence. Keep end-users informed on the programme.

The certainty of work from a framework contract means that everyone will feel more confident about their work load from you and so they are more likely to become innovative. Suppliers need to know they will achieve their profit to feel comfortable in investing their own time to encourage learning and improvement. It increases certainty and removes the adversarial environment. It creates a more constructive environment than the traditional model and saves time and cost. Work with people who have the skills and competencies that you need for your project, and who you trust. Long-term relationships encourage innovation.

Innovation is easier where risks are lower, so break down projects into packages where risk is managed and contained. Add value by thinking through how these repetitious processes can be improved. Work the project team hard, constantly challenging them to find the best solution.

Be highly performance driven because it becomes an incentive to improve. Link performance to financial incentives. Tell people when they have done well and celebrate success, but don't be frightened to get rid of poor performers. The project should have strong leadership, with senior people who are accessible and encourage trust between all parties. Share the aims of the project with all the team.

Measuring not only tells you where you are starting from but can drive improvements. Satisfaction needs to be measured amongst all the stakeholders. Measure performance using both hard and soft measures and measure everyone's performance including the client's. But make the scoring objective.

Keep an eye open to see what everyone else is doing and listen to your supply base to make sure you are working in the best way. Do your research by talking to other clients and benchmarking against other projects. Go to the ClientZone on the Constructing Excellence website.

It is critical that the most appropriate person carries the risk and this is spelt out at the beginning. Responsibility for improvement needs to be allocated to a named individual. Focus on managing risk.

Sometimes it's good just to start with a clean sheet of paper and you come up with ways of doing things that you wouldn't have dreamed of.



‘A fundamental measure of success for any building project is conducted post occupancy, in assessing the extent to which the building proved able to cater for the businesses and occupiers. By making such an assessment, and critically by then sharing any lessons learned with all concerned, the ability of the built fabric to underpin the wider economy will continually improve. This issue, and many others, are superbly identified within the individual case studies provided in this guide.’



*Christopher Morley, Executive Director,
The Construction Clients' Group*



Babtie-Kent Partnership on Kent Highways

The Project Partners

Client: Kent County Council

Contractor: Ringway

Technical Management consultants: Babtie

Funder/Sponsor: Kent County Council

Form of contract: NEC – Professional services contract



David Thomas of Kent County Council and Brian Budd of Babtie explain how they work together to improve the service that they provide together and measure performance indicators to identify and drive these improvements.

John Martin, Operations Manager of Ringway explains how they work with Babtie on this contract.

THE PROJECT:

Background

We had an in-house highways team and before the partnership, we had begun preparing to become more commercially minded. Government initiatives such as Competitive Compulsory Tendering & Best Value put pressure on councils to measure

in-house provision. We were benchmarking our in-house engineering consultancy using internal charging for services and being measured on performance. We wanted to make sure that Kent CC was improving the value for money that it was giving.

However, in the mid 1990s the Highways Agency took over all trunk roads and motorways and much of our major Capital work dried up. We were concerned that we would lose the skills and knowledge that we had accumulated but we were keen to ensure that we didn't go down a confrontational route with our providers.

What was innovative about the solution?

With best-value coming and other external pressures, the council decided to go down the market route. The decision was made to transfer most of the department to the private sector partner.

The two-year process started in 1996. We began by assessing a long list of potential partners which we got down to three. We worked hard to get everyone's input and views with staff visits and lots of talking. We wanted to work with people that had the same value sets as us so we looked at cultures, aims and objectives. The staff who were to move were obviously anxious because none of us were sure that any of them would actually do what they said. For Babtie it was a risk which was obviously reflected in the price. They had to assess whether they would need everyone and factor in any redundancies.

Babtie was targeting this market and when they won the contract it was worth £4m of the business of £40m for this type of work. So Kent CC was an important client. Now it is worth £10m of a £60m business so we are even more important to them. The final decision was on two counts; rates and quality and Babtie won on both.

While about 60 people stayed, about 200 people moved over. For those of us who moved to Babtie our desks stayed exactly where they had been. Because Babtie had no office in the area we actually leased our old office. It would have been better to move to new offices at the start to get a defining moment for the move to the new culture and begin the process of being 'Babtie-ised'. There were things we had to learn how to approach differently being from a local authority. However we had already started the process before the transfer. The Kent CC staff brought a great deal to the party with all the skills and understanding of the specific local issues.

The contract covers all local roads, the design of improvements, technical surveys, programme planning and project management.

How do you decide what degree of certainty you want?

We measure cost certainty at various stages of the project. We do a preliminary estimate and then Babtie say how much it will cost. We then check the actual cost at the end of the project. We have an agreed range of +/-10%.

‘We wanted to work with people that had the same value sets as us so we looked at cultures, aims and objectives.’

David Thomas of Kent County Council

IMPLEMENTATION

How did you all work together?

At the start, in 1999, we held a workshop with an external facilitator. Everyone from all levels went through this. We developed our objectives and values and how we would work together. All new staff go through this process. We produced a handbook which we keep updating and we also have regular newsletters.

Ringway is the main framework contractor. Babtie works with them on other contracts in other parts of the UK and so has a good relationship with them.

Kent CC commissions a number of projects at the beginning of each year. It is usually about 150-200 projects. Babtie engineers work on it and by April or May we know





what the problems will be on each project. Each year we bring the contractor in earlier and earlier because the contractor can add value by making suggestions. We cover three areas. We would like to get people from the same areas sitting together in the same office on a permanent basis.

How did you all communicate?

We have a partnering co-ordination team that consists of both senior management and a representative slice of six people from both organisations who stay on the team for 12 months. Each person is encouraged to take on their own bit of improvement so that by the end of the year we have six areas of improvement. We meet every two months. Issues are raised and discussed on how we can improve next year. Often these cover the 'soft issues'.

How did you keep the programme on track?

We have a contractual board that looks after contractual delivery matters.

'I feel that if we could get the money issue agreed and off the agenda then we could really focus on quality and added value.'

Brian Budd of Babtie

We have performance indicators on all projects which we manage. So far we have measured the providers individually in areas like costs and performance but we don't yet measure these things for the project as a whole. That's our next step.

How did you approach safety?

It is critical that the most appropriate person carries the risk and this is spelt out at the beginning. We have three sorts of risk. Fee risk comes from the target price which is 100% pain with the provider taking the risk, but any gain is shared 50/50 between the client and provider. The designer takes the risk for standard designs but for non-standard ones the clients takes the risk. We then carry out a risk register for the construction to understand what the risks are and then attribute them.

There are often some variations and we are starting to understand the key role clients play in being able to avoid them. When you dig down to see why things go wrong, very often it is the client not managing the process very well. Before, there was no measurement of how good the client was. We now all have a good feeling about measurement and what it can achieve.

What was your biggest obstacle?

I think the people issue was the most crucial. We had 200 staff who were uncertain about what the future held for them and it was up to us to manage that. We had to make time for it.

'There is a desire to work together and we've seen better results because of it. It's not like the old days when everyone was so confrontational and we don't want to go back to that.'

John Martin of Ringway

THE RESULT

How did you measure success?

We worked to performance indicators and productivity has improved by an estimated 10% since the first year. We have 12 performance targets, which we either hit or miss. The first year we hit four targets but we hit nine last year. If we miss a target we discuss it at a partnership meeting and make one person responsible for addressing it. This has enabled us to improve. For example Babtie said it would be easier for them if they knew which projects they were going to work on right at the beginning of the year. This would help them with their planning. So that is what we are doing now.

The management team is mostly still there and Babtie have had their contract extended by two further years.

We now measure satisfaction from the public. When we have completed a project we do a letter drop to 10% of households affected with 100% coverage of elected members. So we are now getting feedback from stakeholders who might be affected by the project but have no direct input into it. We are also trying to communicate more by getting press coverage focused both on the technical side as well as the personal side.

What could you have done differently?

Some of the ex KCC personnel still feel they have an allegiance to the council and that can be a challenge.

How has this project made a difference to what you will do in future?

We will continue down this route but we are going for a 10-year term. I don't think you can do this to begin with. You need to test the market because if the rates start high you are stuck with them for a long period of time. I would also like to see co-location of staff and to link our IT systems so we can use project collaboration tools. We are working on that now using the internet. As engineers, we are not very good at the people issues and we are developing ways of addressing those issues.

What would be your advice for less experienced clients?

- Put loads of time up front to think through the issues.
- Draw on others' experience.
- Get to know the people on your tender list well.
- Choose providers that know exactly what you want.
- You must all know what the risks are because everyone should be able to achieve their reasonable profit.
- Suppliers need to know they will achieve their profit and then they can focus on the delivery aspect.



THE CONTRACTOR'S VIEWPOINT

Ringway has the management contract for Kent County Council. We deal with the small schemes of up to £100k which amounts to a lot of jobs. We used to be the direct labour department of Kent CC in 1999, at the same time that others moved to Babbie, we moved over to Ringway. We didn't really notice the change because we work in the same office and out of the same depots. So, we knew all the people we now work with and had worked with them over many years. About twenty five staff moved across and this was a very uncertain time for us all. Most of us had worked for the council for many years and expected to continue to do so. We had a new manager who was from Ringway but in reality we carried on the way we had been because we knew the situation and the people we were working with.

We have certain restrictions on what we can add to a project due to the usual standard contract conditions. Personally, I would prefer to throw away the contract and work together. But things are changing especially over the last twelve to eighteen months.

We get together at the design stage and discuss the project. That means we have a say in things like buildability and traffic management. We see it from the practical side as to whether it will work on the ground.

More recently where we can develop the process better we have. There have been initiatives going on which means that we are almost co-locating. We have only recently all sat down together to see where we could develop this further. There is a desire to work together and we've seen better results because of it. It's not like the old days when everyone was so confrontational and we don't want to go back to that.

In reality we have seventeen clients who are all representing the interests of the group they represent. This means that although we know what the projects are at the beginning of the financial year, we still find that we are quiet through the summer and at our busiest just before the end of it.

We have been set up to take on work outside the Kent contract but in practice we haven't done much because our workload has gone up so much. It was £12m but now it's £32m.

LEARNING POINTS:

- Suppliers need to know they will achieve their profit and then they can focus on the delivery aspect.
- Bring in the contractor earlier and earlier.
- Knowledge sharing can work better if the parties co-locate.
- Improvements come most frequently from the soft issues areas.
- Client variations arise when the client is not managing the process very well.
- Responsibility for improvement needs to be allocated to a named individual.
- Satisfaction needs to be measured amongst all the stake holders.
- It is critical that the most appropriate person carries the risk and this is spelt out at the beginning.

Rolling out Marks & Spencer food stores

The Project Partners

Client: Marks & Spencer 'Food' and 'Simply Food' Stores

Contractor: Wates Retail

Funder/Sponsor: Marks & Spencer

Form of contract: Design and build



Ian Brown and Peter Macleod of Marks & Spencer explain their process for the roll out of their stores and how Peter's knowledge of Marks & Spencer and Ian's knowledge of building fast track buildings for McDonalds brought the synergy they needed for the process. Andy Hughes from Wates Retail talks about how they worked with Marks & Spencer as a unified team.



THE PROJECT:

Background

Marks & Spencer had existing standalone Food stores, with a majority food and minority clothing product mix. This was a very specific size and offer and consequently needed very specific locations. A new concept was developed to deliver its quality food offer only to convenient locations and the first two 'Simply Food' stores were opened in Twickenham and Surbiton in July 2001. They were smaller, more flexible and were very successful. The Board then decided to roll the programme out through the rest of the country.

In the 2003/04 financial year we opened forty two food stores, which vary slightly. The 'Food' stores are typically 8,000 – 12,000 sq ft and include general merchandise so they need loading bays and staff office space. The 'Simply Food' stores are smaller at around 2,000 – 8,000 sq ft. and have a much smaller back area.

This programme was much larger in terms of the number of stores than our usual construction programmes and so our objective was to make the process work like a conveyor belt. We wanted to deliver each store perfectly, without snags, with no variations to time and budget and with no health and safety issues.

We also needed to be able to move quickly when we found a suitable site to make sure we secured it before one of our competitors did. There was an element of confidentiality for commercial reasons and we had to be a lot more nimble than we are over larger store locations.

What was innovative about the solution?

We felt that we needed a template for the whole process to make it go like clockwork. For approvals this consisted of hurdles with time frames for information gathering. There were approval meetings



‘We also have an after sales service because this is where a good job can get ruined.’

Peter Macleod of Marks & Spencer

cold room door open, it can be expensive to send an engineer round to fix it. So we have remote monitoring on every one and this keeps the breakdown costs right down.

IMPLEMENTATION

How did you all work together?

The country is split into the north & west, which Peter looks after and the south & east looked after by Ian. The most important thing is to have one point of contact. One of the benefits is our complementary experience. Peter has worked at Marks & Spencer for twenty years and understands the way the company works, while Ian has the experience of working for McDonalds and so he knows how to use fast-track construction for maximum benefit.

How did you all communicate?

Our template includes regular set meetings and we use BIW Technologies project collaboration software. We have led the way on this, although it's probably our sub-contractors who use it the most because it enables them to access the drawings when they want and from anywhere. We have several levels of access and can look at drawings, specifications, reports, CDM file and project photos. So at the end of the job it's all available electronically. Actually it's probably our people who use it least because it's so easy for them just to walk to a drawing. We think it is important and so we are having a re-launch to re-introduce it internally and make it part of the way we work.

every two weeks, where projects could be signed off. These time frames can be condensed if necessary which sometimes happens with the run up to Christmas or Easter.

The teams working on the project were very clearly set up so that the flow of information was much faster. With this programme being larger it could justify a dedicated internal team which included representatives from every department that had an interest in the result.

Our external construction team consists of the contractor, the architect, the QS, a project manager and possibly a services engineer. They will visit five or six sites a week, so they all know what sites are under review and their particular issues. We already have most of our pipeline of sites for the next financial year, and so our contractors know what their workload is and can get on with the planning.

The whole supply chain had to work much more closely together so that no variations would be necessary. This meant bringing in the end users early on, so that they were happy with the internal layout and wouldn't want to change it later in the process.

How do you organise your projects?

For the larger stores we had been going out to tender separately for each new store and chose the contractor often on price. However, on this project we knew that we would be repeating the process many times and that we should be aiming to get

everyone involved early enough to get their input before we started work.

We chose two framework contractors by looking for companies that had experience in this type of fast track construction through working for other, similar, retail customers. We picked the contractors based on their experience and chose the ones who we thought we could work with having met their teams. We produced a generic tender with costed rates and went through an interview process where we met the actual people who would be working on the projects.

The important thing is to establish and maintain the same team so that they can bring the lessons from one site to the next one. One site manager from Wates has worked on four stores. Wates use experienced managers to train new ones but it is also important to bring in new people, otherwise people get locked into a way of doing things and don't innovate. There needs to be a balance.

How do you decide what degree of certainty you want?

This early involvement by the whole design team and access to the units means that we have better cost certainty and no surprises.

We look at running costs as part of the design and don't just go for the cheapest. For example one of the items we looked into was the refrigeration. If something goes wrong with it, or someone just leaves the

How did you keep the programme on track?

Every two weeks everyone is involved in a review meeting. We go through every project on the books, including pipeline projects and those on site. There are also weekly surveyors' meetings, fortnightly design meetings and bi-monthly meetings by the internal property group, which is a more formal review of the current situation. We also have a similar process on site where we all sit together in the same office as part of a project team. We put great emphasis on getting the front end right and with repeat processes we put this all into the pre-start meeting.

We have an after sales service because we recognise that this is so often where a good job can get ruined. Our contractors have an after-care manager and each project has an after-care programme, ensuring that any new issues that arise are dealt with effectively. This is so that communications are kept open with the end-user. We think this is really important and it gets reviewed at our meetings.

How did you approach safety?

Safety is our number one priority and we have extremely stringent pre-qualifications before a contractor is appointed. This company is prepared to spend money on health & safety. We have to achieve targets of above the industry norm. We also all have to have passed the Construction Skills Certificate Scheme which means we all have to sit the appropriate test for our role. We all have it, because we couldn't ask anyone else to if we hadn't done it ourselves. It covers basic understanding of danger and everyone has to carry their card.

The teams all have objectives and are rewarded on them and this goes all the way down the supply chain. There would be financial penalties for missing these for everyone.

What was your biggest obstacle?

Bureaucracy can be a problem because people would rather do things in the way they are used to. However bringing them in early makes them think about what they want, so that we don't have to re-do any work which is far more cost effective.

‘The important thing is to establish and maintain the same team so that they can bring the lessons from one site to the next one. But it is also important to bring in new people otherwise people get locked into a way of doing things and don't innovate.’

Ian Brown of Marks & Spencer

THE RESULT

How did you measure success?

We have specific objectives for delivery including delivery costs, quality, hand-over and health & safety, which we have to meet or exceed. Our remuneration depends on meeting them.

We use our own KPIs to measure how well the team is doing with coloured traffic lights to indicate success. The questionnaire is filled in by one person who has previously got everyone else's view and each element is rated out of ten. We have targets for each separate element according to its importance. So on some important elements we have to get at least a seven for a green light and a six for amber but for others the levels are lower.

We use this to review the contractors and if they don't meet the targets we would pull them off. Our first main contractor was pulled off this project and, because we had their performance quantified we could show them why they were being removed. In fact our contractors ask to see their results and we also use them for awarding contracts.

When we have the results we sit around a table and go through them to see how we can improve. When a suggestion is made for an improvement it is logged and one person is made responsible for making sure it happens. This way we can make sure we are focusing on those green lights.





THE CONTRACTOR'S VIEWPOINT

I think Marks and Spencer chose us because our staff have a great deal of experience in working in the retail sector. So, we understand the way this type of project is usually managed and the processes it involves. We have also worked with fast-track construction before and know the specific issues around that. However, I think the most important thing is that we all trusted one another and felt we could work together.

‘Establishing a team with the same core values, all with one goal in mind – success.’

Andy Hughes of Wates Retail

What could you have done differently?

We could have taken up the use of the BIW system faster and used it for better feedback.

How has this project made a difference to what you will do in future?

There has been a lot of learning, especially during the rollout programme of the ‘Simply Food’ stores. We are applying this to other programmes that we are working on, like our modernisation programme, and we will certainly be using what we have learned on partnering and the use of KPIs.

What would be your advice for less experienced clients?

Teamwork is crucial and it is important to get the right team together so don't be frightened to get rid of poor performers. Keep processes simple and don't over-complicate them, because there is no need to.

The key to the success of any project is the relationship with the supply chain and we had a good relationship. There was clear communication, joint planning with key trades and a collaborative culture. We also used the BIW project collaboration software, which meant that the management of information was efficient.

We used KPI's and the whole team looked at the results so we could develop plans to improve the ways in which we were working. We all encourage and are encouraged to improve. When we find a better way it is added to the standard process and new suggestions or ideas are assessed by everyone before they become part of this process.

I think the biggest challenge was establishing the correct process throughout the store feasibility stage and completing accurate cost plans based on limited information.

Teamwork is critical for this way of working because everyone's expectations need to be understood and managed. The drive for continuous improvement is relentless. Although traditional contracting suits some types of projects, I am not sure it is an approach that necessarily encourages teamwork.

The success of the ‘Simply Food’ roll-out in particular owes great credit to the vision and leadership of the Customer, particularly Peter MacLeod and Nick Roalfe. Establishing a team with the same core values all with one goal in mind – success.

LEARNING POINTS:

- Use appropriate technology.
- Get people who may want to change the specification in early and spend time planning.
- Don't be frightened to get rid of poor performers.
- Tell people when they have done well and celebrate success.
- Keep an eye open to see what everyone else is doing and listen to your supply base to make sure you are working in the best way.
- Use established teams so that the lessons learned can be brought to the next project but remember to bring in new people as well or there will be no innovation.



A Procure 21 project at Cheshire & Wirral Partnership



The Project Partners

Client: Cheshire & Wirral Partnership NHS Trust

Contractor: Costain

Funder/Sponsor: NHS

Form of contract: ECC partnering contract

John Loughlin was the client for one of the pilot Procure 21 projects. Both he and Denis O'Brien from Costain are converts to this way of working. They explain how the experience has changed the way they want to work in the future.

THE PROJECT:

Background

The NHS decided to pilot the use of the partnering contracts known within the NHS as Procure 21 (P21) in two regions, including the North West, for construction projects over £1m. We were already advanced in planning for our project for a new Mental Health Unit.

Cost estimates had been prepared but because of delays in funding approval over a couple of years we knew we would have to deal with inflationary cost pressures.

Previously, all construction contracts had been tendered and the contractor selected on the basis of lowest price. I expected the project budget to be exceeded at tender because of inflation. A partnering contract would give me the ability to discuss areas where costs would be reduced.

Before recommending to my Trust Board that we use P21 I prepared a comparison of the risks between using traditional contracts. NHS Estates gave me advice on this issue. P21 offered some time benefits by the early appointment of the contractor and by developing a target cost I felt there would be more cost certainty. The Trust Board accepted my recommendation to use P21.

We approached four contractors who already had expressed interest in the P21 Scheme. We interviewed three. We appointed Costain because they attended their presentation with the team that we would be working with and they had used P21 on another scheme and were confident they could make it work in our circumstances.

What was innovative about the solution?

With P21, the contractor did not just accept our plans, they also questioned them. They quickly understood what our requirements were and offered more cost-effective solutions for delivering them.

They invited sub-contractors to design meetings who were able to talk about how they would approach each task. Significant savings were made, particularly in mechanical and electrical services, joinery, roofing and guttering.

For example, to begin with we needed to clear the topsoil and pay to get rid of it. When the final landscaping was done we would have had to buy new topsoil in. When I raised this, the ground-worker suggested where we could store the soil and this saved us money.

The process encourages the client to describe the function of the building in more detail and trust the specialists to develop appropriate designs. For example, we would be advised whether heating is best delivered by under-floor, radiator or ceiling panel heating.

How do you organise your projects?

The first thing to recognise with P21 is that for it to work properly it requires time and commitment from all parties and everyone must have a detailed understanding of each other's requirements. Processes need to be clearly identified and planned, and programmes must be kept to.

My first action was to do a skills gap analysis. I knew I would be more involved on a day-to-day basis on the project. I also recognised the need for cost advice. The Project Board accepted my recommendation that I should be supported by a Project Supervisor, a Cost Advisor and a Project Administrator.

A programme was agreed to reach a target

‘We had a sample room to show how each component would be installed so that we could check that it met the needs of the user. This was particularly important where the opinion of a nurse or a doctor was required.’

*John Loughlin, Project Director
Cheshire & Wirral Partnership*

cost. Costain's first price was recognised as a worst case scenario because due to uncertainty there was a high level risk. This exceeded the available budget by approximately £1.2m. The project was then broken down into a work package which was tendered through their supply chain. When prices were returned this gave me more certainty and by the removal of estimates and risks there was a significant decrease in the financial position.

We then began value-engineering exercises to examine our proposals. Sub-contractors were invited to meetings and they offered many alternatives for cost reductions which did not affect quality. This was a long and exhausting process but well worth the effort. Eventually the target cost was reduced to the available budget without compromising patient services.

How do you decide what degree of certainty you want?

A major advantage of partnering is an improvement in time and cost certainty. Within the project we adopted the position that we should seek to generate as much information as possible that would increase this certainty.

This required the investment of considerable time and effort and has required close monitoring during the course of the project. However, I believe it has resulted in less change in specification and variations in time and cost during construction.

IMPLEMENTATION

How did you all work together?

We had a very integrated team. Costain's site management and the Trust's Supervisor shared office accommodation. The contractor regularly showed samples and did not presume anything. We had a sample room to show how each component would be installed so that we could check that it met the needs of the user. This was particularly important where the opinion of a nurse or a doctor was required.

How did you all communicate?

Good communication was established from the start. A programme of regular meetings was established for such things as progress, finance, design and quality, risk review and site safety.

An early warning meeting system exists whereby each party notifies the other at the first opportunity where an event happens or is predicted that will impact on time and cost.

There is also a formal system of communication that keeps a record of all events, time and cost changes and revised instructions.

How did you keep the programme on track?

I was impressed by the level of information in the programme issued by Costain. In effect this was a complete work breakdown structure. It enabled us to closely monitor progress in fine detail on a day-to-day basis.

Where delays in the programme occurred Costain was asked to issue a mitigation plan in which they demonstrated how time would be recovered. Delays caused by the Trust were recognised early and fed into the programme.



How did you approach safety?

Under P21, records relating to site safety are kept which are then used by NHS Estates to monitor the contractors. However, irrespective of this, Costain as a company is highly safety conscious. We have been invited to all their site safety meetings.

What was your biggest obstacle?

I believe that partnering requires considerably more client involvement than traditional schemes, particularly in the build up to the target cost and in operating an "Open Book" policy. Scheme monitoring also appears to be far more rigorous. While this is to the benefit of the project, it should not be assumed that partnering is easier than traditional construction. It requires a significant commitment on the part of all team members particularly in the pre-construction phase.

The second problem I experienced was that within my working environment partnering is a new phenomenon. All team members have learned new approaches to working together. This was most acutely felt when there were changes of staff and new team members had to quickly gain an understanding of the process. Hopefully, as partnering becomes more commonly used this situation will improve.

THE RESULT

How did you measure success?

Success is measured in a number of ways. At the start of the project we established a number of benefits criteria which we hoped would arise from the development. These related to the design, the patient environment and functionality. These are monitored regularly. We also monitor quality, percentage defects and safety. P21 requires the Trust to complete a client satisfaction questionnaire. Likewise the contractor completes a best client survey.

We also make a point in acknowledging outstanding contributions. In our case this included the bricklaying and roofing contractors. We do this to ensure that they remain part of the supply chain and that the standards they set become the minimum acceptable standard in future.

“We appointed Costain because they attended their presentation with the team that we would be working with.”

*John Loughlin, Project Director
Cheshire & Wirral Partnership*

“The contractual agreement NEC/ECC says in clause 10.1 that everyone should work together ‘in the spirit of mutual trust and co-operation’. And that just about says it all.”

Denis O'Brien of Costain

What could you have done differently?

I would say I would have adopted P21 at an earlier stage in the project and benefited from Costain's site staff particularly in design.

How has this project made a difference to what you will do in future?

I have experience of traditional schemes that have often led to confrontation. Where I have had to renegotiate scheme costs the objective has been to reach a budget level, not necessarily to achieve full value-engineering cost benefits.

I have and will continue to promote partnering as an effective way of procuring capital schemes. I would not adopt traditional procurement on similar schemes by choice.

What would be your advice for less experienced clients?

Partnering offers time and cost certainty, and removes many of the adversarial elements of traditional build. The investment of time and effort in the pre-construction stage is fundamental to project success. A partnering approach offers the opportunity to do this.

As partnering becomes more widely used in the NHS, the benefits should increasingly emerge. I believe I have seen many of these benefits within this project.

THE CONTRACTOR'S VIEWPOINT

Costain was one of the six contractors chosen to pilot the Procure 21 way of working. I had some experience of collaborative working before that and I was keen to become involved. I found the way of working wholly positive and it worked well beyond my expectations. Having said that a number of people did struggle with it. We had 100% "Open Book" with free access to everyone. It took some people time to overcome their reservations but after a month or so we all began to gel as a team.

We had done a number of seminars as a company and NHS seminars and debates. In fact it took us a year to pre-qualify for the pilot. We had to show capability, our strengths and weaknesses and our company ethos. We had plenty of debate internally but in the end we learned on the hoof.

We began with Ormskirk which was slightly ahead of this project. The most important thing is whether the client gets involved in the process. He really needs to develop a proactive approach. If he's not involved then the process really doesn't work as well. Each NHS trust is its own entity which means that it's more difficult to get each one to embrace this. After all each project has an inexperienced client and this is a challenge.

Our biggest challenge was to achieve the budget. We did a lot of brainstorming. This meant getting together and just coming up with as many ideas as we could however stupid they may seem to get us going. We sat down in the conference room and aimed to come up with fifty suggestions. From these, twelve finally released some value to the project.

For example we trench-filled instead of strip-footing, saving £2.5k. We also omitted the housing to the generator and transformer by using a weatherproof one instead. Fortunately the architect was fully integrated into the team and he embraced the changes. We used an existing work block as offices and this not only saved money but was much more comfortable.

Procure 21 does work but you need to be able to think outside the box. It's important to keep together all the team and that takes constant effort. You need to be careful who you choose because you don't want aggressive, contractual people working in this environment. You need the soft approach to be able to see both sides. The people are hand picked and we have pulled people out if we felt that they weren't going to make it. In fact at Ormskirk we have done another project and we are now part of their strategic plan, so we are locked in.

I whole-heartedly support this. The contractual agreement NEC/ECC says in clause 10.1 that everyone should work together 'in the spirit of mutual trust and co-operation'. And that just about says it all.

LEARNING POINTS:

- Partnering saves time and cost. It increases certainty and removes the adversarial environment.
- Introduce the client to the people who will actually be running the project so that they can see the shared values and this will give them confidence.
- Look for the most effective solution and use brainstorming to identify ways of saving cost without prejudicing the project.
- Look at what you want from a building in terms of what happens inside it and not just what it will look like. Use a test room so that the client can see exactly what they are getting and can make any changes.
- Get the people who will actually use the facilities to evaluate what they are getting and whether it will do the job.
- You might find you need a different set of skills if you are working in a more co-operative environment.
- Do a risk assessment of procurement methods and choose the right one for your project.
- Try to keep the same team together for later projects so that knowledge is kept and used again.
- Communicate together rather than by passing information down a line. It is quicker, more effective and gets everyone involved.



Exchequer Partnership for HM Treasury PFI

The Project Partners

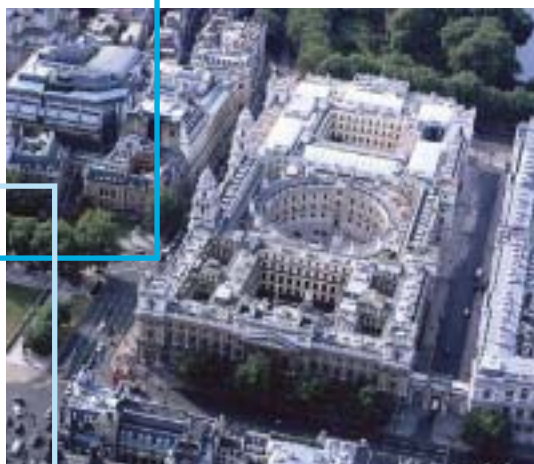
Client: HM Treasury

Contractor: Bovis Lend Lease, with principal trade contractors

Design team: Foster & Partners (lead architect), Feilden & Mawson (heritage architect), Jaros Baum & Bolles (MEP engineer), Waterman Partnership (structural engineer), Hanscomb (quantity surveyor), Mott Green Wall (MEP quantity surveyor), DEGW (space planning)

Funding: Ambac International, with technical advisor Faithful & Gould

Form of contract: Private Finance Initiative (PFI) using the Treasury Task Force's Standard Terms and Conditions contract



Paul Lewis, Director of Stanhope plc and Managing Director of Exchequer Partnership plc, tells how the project came about and how the challenges it presented were successfully overcome. Julian Daniel, Project Director of Bovis Lend Lease, describes the practical benefits of the Stanhope Bovis Lend Lease Alliance.

THE PROJECT:

Background

The whole project involves the complete refurbishment of the vast 'Government Offices Great George Street' (GOGGS) in two distinct phases. The first phase, which is the subject of this interview, worth £141m, now houses all HM Treasury's staff under one roof.

The Scottish architect John McKean Brydon designed GOGGS in 1898 and it was completed in 1917. It was Grade II listed in 1970 and special mention was made of the classical elevations, towers, staircases, fine rooms and the circular

court. We had to maintain these features. In the event, we were able to restore and enhance the elevations plus make better use of the courtyards.

The hierarchical working relationships of the Edwardian period meant that the building had cellular offices reached by a network of high-ceilinged corridors. Movement and circulation around the building was time-consuming and confusing. More significantly, it reflected an outdated way of working. The Treasury wanted to provide a predominantly open plan space with team working areas for all of their staff. It was the first time in over 50 years that they were housed in a single building. The re-construction became the symbol of an overall culture change.

What was innovative about the solution?

HM Treasury (HMT) chose a Private Finance Initiative (PFI) contract on a value-for-money basis. It also allowed them to benefit from private sector

innovation and risk transfer. These included planning permissions, structural risk and latent defects in the nearly 100 year old building, as well as finding a tenant for Phase 2.

We felt that we could also bring our property development expertise to assist on this project. Stanhope, a partner in Exchequer Partnership (EP), is known for its successful private developments. Having been shortlisted, we put together a team of advisors to collaborate with HMT and their advisors on the occupier and output brief. Our fundamental approach is to work with a team we know well where we can. This solution brought added value to the project.

Our developer-led approach helped to refine the Treasury's requirements and the design, as it would for a large corporate client. The fundamental point was to get them to say what few things they would measure success by. The project was characterised by this openness between HMT and EP.

We raised the funding in an innovative way, together with HMT and their advisors at Partnerships UK plc, after the design and risks had been determined. HMT and EP devised an open competition process. The successful fund provider could see where the risks lay and what they were. It also led to smooth progress to financial close. The National Audit Office has confirmed that this has saved the taxpayer £13m over the project's life.

By improving the efficiency of the building, we were also able to hand over 1,400 square metres of historically important parts of the basement to the Cabinet War Rooms. This extended their exhibition space three-fold. In a supplemental agreement, a business plan was developed allowing EP to take over the head lease of the Cabinet War Rooms and to design, build and finance the redevelopment and extension of the war rooms.



“The fundamental point was to get the occupier to say what few things they will measure success by and then provide an open team involvement to deliver them.”

Paul Lewis, Director of Stanhope and Managing Director of Exchequer Partnership plc

How do you organise your project?

The project had strong leadership, with the Treasury Permanent Secretary personally involved. In particular Sir Andrew Turnbull, who oversaw the project from 1998 to the completion of Phase 1 in 2002, was accessible for the big decisions as work progressed. Also the client's in-house project sponsor knew the Treasury 'backwards' and used advisors, like Gardiner Theobald Management Services, who were involved from the inception.

EP had three partners: Stanhope plc, Bovis Lend Lease and Chesterton. Today, Stanhope and Bovis Lend Lease now have 50% each. Design & build was contracted by EP to Bovis Lend Lease. Bovis Lend Lease engaged the trade contractors, using a bespoke form of contract, necessary for this type of complex procurement. Stanhope and Bovis Lend Lease had used the majority of these contractors on several projects before. Therefore, they knew what was expected of them. Some of them were involved very early in the bid process. For example, the demolition contractor was brought in early to work with the architect and structural engineer on the best way to 'destruct' half a million square feet and set it up ready for reconstruction. EP contracted the soft facilities management services to Chesterton.

How do you decide what degree of certainty you want?

The Treasury wanted absolute certainty on time and cost. We took a best view of the risks, based on global figures, and then managed the process to achieve the desired outcome.

The Stanhope way is to add value through iteration. We work the project team hard and will keep refining the details right up to the last responsible moment, constantly challenging the team, benchmarking against other projects.

We were open with HMT about variations and the solutions to them. A major deviation was to remove the bomb-blast curtains and refurbish 1,750 windows. Instead of a completely new installation, the original timber frames were rebuilt and the multi-pane plain glass was replaced with a laminated single pane sandwich, incorporating a UV-filter safety film to reduce glare, heat gain and splintering.

IMPLEMENTATION

How did you all work together?

After the contract was awarded, everyone on the project team from Fosters to Waterman moved into team rooms on site. Stanhope and Bovis Lend Lease insist on collaboration at all levels on their private sector projects and the delivery of the HMT project was no exception.

All the team also used the Bovis Lend Lease Hummingbird project collaboration software to share project information.

How did you all communicate?

We invested in professionally managed away-days for the project team, so that we all got to know each other. Building on the success of this approach, we also had a facilitated end of project review, to pass on the lessons learned to others.

How did you keep the programme on track?

Our collaborative approach meant that any future programme challenges were brought into the open rather than putting the overall project delivery at risk.

How did you approach safety?

The whole team took on board the Stanhope and Bovis Lend Lease belief that everyone has the right to go home safely at the end of the day. Apart from following the well-established requirements for risk assessments and method statements, we also found that our collaborative approach to programming the project made us think about the problems and solutions earlier.



What was your biggest obstacle?

The construction of the original building incorporated 'new' methods, using concrete and steel construction with reinforced concrete foundations. It was because of this robust construction that in 1940 the Cabinet War Rooms were located here, under a 3-10 foot thick concrete slab – covering 70% of the lower ground floor. This caused a number of challenges for getting services routes through.

Scale was a feature of the project with 8.7 miles of corridor and 650 rooms to refurbish. In the process 7.7 miles of wall was removed, 60,000 tonnes of rubble taken away, 1,750 windows refurbished and all the services renewed. At its peak, the labour force reached 850 people on site.

The reputation of some PFI deals can lead to people behaving differently, but we treated it as if it was a usual private sector project. However, we made it memorable for people with lots of celebrations, a big client involvement and prizes for contractor of the month, based on safety, innovation and working with others.

THE RESULT

How did you measure success?

There was a post-occupancy evaluation by EP and HMT. The project was completed on budget and one month ahead of schedule. It was also a total success measured against the principal aims of the redesign to:

- Make more economical use of internal space
- Change the character of the building to facilitate team working
- Improve circulation and access for staff and visitors
- Modernise building services to provide a low energy solution.

The refurbishment provided an extra 25% of useable space and the combination of environmental initiatives resulted in the project being rewarded an 'Excellent' Building Research Establishment Environmental Assessment (BREEAM) rating. Achieving a score of 70.7% is a considerable achievement for a historical building.

From the Treasury's standpoint, the essential aim was to achieve a culture change through working in a new environment. During the project, HMT held 10 seminars and measured staff attitudes for all of the approximately 1,000 staff. At the start, 80% were for cellular offices whereas on completion, 80% were for open-plan.

Now fully operational, the refurbishment has contributed towards improved staff well-being and productivity. Absences due to sickness have fallen from 5.2 to 3.1 days. Another tangible success of the project was the significant drop in email traffic between

“The project was delivered on budget and ahead of schedule in an innovative value for money PFI scheme which provides significant operational and environmental improvements for staff and visitors. This will enable us to provide better services to Ministers, Parliament, the many organisations that we work with regularly and, ultimately, the public.”

*Sir Andrew Turnbull,
former Treasury Permanent Secretary*

occupants after occupation – a good indicator that there was far more face to face contact. Further sustainability successes are that the first years' electricity consumption at 40kwh/ m sq is half the benchmark set for a naturally ventilated corporate building. Water consumption in the first year scored 77% against key performance indicators set by the Department of Trade and Industry.

The project has been recognised as a success with the receipt of several accolades:

- The project won the refurbished building category at the British Council of Offices Awards 2003
- The project won a highly commended medal at the British Construction Industry Awards 2003
- The project won the project finance PFI deal of the year at the UK PFI Awards 2000 and the Fosters design won the design category at the same awards in 2003
- The project director from Bovis Lend Lease won the PFI category at the UK Construction Manager awards 2003.

Treasury Permanent Secretary Sir Andrew Turnbull said, "This is a major step forwards for the Treasury and everyone working here.

‘Delivered on time and within budget, this has been a model of how a successful private finance initiative project should work.’

Gordon Brown, Chancellor of the Exchequer

It will give Treasury staff better working conditions in a 20th Century building equipped to deliver 21st Century service. 1 Horse Guards Road (as it is now known) will provide the opportunity to modernise our working practices and the capacity to communicate and work better together across the Treasury in a single building.”

What could you have done differently?

Against the outcomes, it was as good as we could have wished, with over three quarters of respondents in a recent review saying they are over 80% more productive.

How has this project made a difference to what you will do in future?

It has re-affirmed for us the benefits of pre-planning and pre-engineering, and the benefits of working in collaboration with each other, particularly on a complex restoration and refurbishment project of this size.



What would be your advice for less experienced clients?

Provide strong leadership. Focus on managing risk. Engage others with the specific expertise to evaluate and manage these risks. Share the aims of the project with all the team. Invest in preparing your staff for the move. Let them know what the new working environment is going to be like.

THE CONTRACTOR’S VIEWPOINT

The alliance between Stanhope, Bovis Lend Lease and a number of our preferred trade contractors goes back some 20 years. In this time, we have built up strong relationships built on trust and respect.

We started to involve the key trade contractors that we wanted to use on this project about 12 months before the start on site. We selected them based on their experience, competencies, relationships and their willingness to innovate. We were in a position to ask for specific people. We ran warm-up workshops to get them involved and share our objectives. We involved them early in the design process to devise buildable and safe solutions. Our approach is that once the design is settled, then the price can be agreed based on market rates. We rely on independent cost consultants to help us with this.

Towards the end of the first phase, we ran around 50 sessions to capture the lessons learnt, to use on the second phase. Sometimes this process leads to surprising solutions. Normally composite steel and concrete construction would be most economic, but the small floor areas meant that the power source for the stud welding was not really close enough. So, for the second phase it will be quicker and cheaper not to use composite construction. Another example concerns the electrical supply to the basement rooms on the second phase. We have introduced an electrical connection box for each room, so that their completion can proceed ahead of the cabling into them.

The lessons learnt are communicated to all sections of the project team for use on the next project. Taken overall, the lessons learnt on this project have allowed us to pass on a 5% cost reduction to the client for the second phase.

LEARNING POINTS:

- The project should have strong leadership, with senior people accessible and trust between all parties. Share the aims of the project with all the team.
- Focus on managing risk.
- The Treasury Task Force’s Standard Terms and Conditions contract helped to smooth progress towards financial close.
- The open competition process for funding helped to save money, particularly because the design had been established and risks identified.
- Add value through iteration, work the project team hard, constantly challenging the team, benchmarking against other projects.
- House the design team on site. Match contacts from organisations at all levels. This aids communications and integrates the project team, leading to better solutions and added-value.
- Make it memorable for people, with lots of celebrations, a big client involvement and with prizes for contractor of the week, based on safety, innovation, working with others etc.
- Long-term relationships encourage innovation and refinement.
- Codify the project’s learning points to build them into future work.
- It should be a given that contractors will work at market rates, so select them on their ability to work with others, to innovate and on other measures of competency.

Defence Estates Prime Contract for Single Living Accommodation in Northern Ireland

The Project Partners

Client: Defence Estates on behalf of GoC NI

Contractor: Henry Bros

Funder/Sponsor: G4 Estates, HQNI

Form of contract: Defence Estates Prime Contract



Malcolm Kerry of Defence Estates describes how he manages to build in Northern Ireland with the added pressures of changing briefs from the client and security restrictions. David Henry from Henry Bros. explains how they work with the client and Defence Estates to come up with the best solution.

THE PROJECT:

Background

The project is to provide accommodation for the Armed Services in Northern Ireland. In view of the political sensitivity of this, the capability to deliver against very rapid timescales is essential.

Our role as Defence Estates (DE) is to manage the construction of the buildings that are used by the Ministry of Defence and then run them. So, we have to build the type of buildings that the MOD need, where they are needed and to their specification. We began with a brief from our client to build new accommodation blocks for single servicemen at Ballykelly, about 15 miles outside Londonderry. The whole project is for 20 buildings on four sites, which are due for completion by late 2005.

For this project, we realised that there would be advantages to

bundling all the work together, because there was a relationship in the programme of work. We thought if we did this we could keep the design continuity and be flexible to meet the changing needs of our client. The nature of work for the MOD in Northern Ireland is that things change quickly and so we have to assume that there will be changes that we cannot foresee.

So, for this project we decided to use the contractor to do the design work and work to a target price, with a guaranteed maximum price. The brief was developed with the client. The accommodation had to meet certain basic requirements. For example, the rooms would be arranged in groups of six and would include en-suite bathrooms. Then we went to tender for detailed proposals to meet this brief.

We went out to more than ten contractors who all had a proven track record. We went through the normal process of expressions of interest and pre-qualification to reach a short-list for competitive tender.

Previously, we had used the Develop and Construct process by producing an outline design, which went out to tender to a list of proven contractors. The contract would be awarded on the basis of conforming to the design. This meant that any changes

to that design would have cost and time implications for the project. It was also likely that it would mean claims which could take a very long time to sort out. (Note – we actually have a good record of avoiding claims on D&B projects.)

We felt that working in a more integrated team would give us more flexibility both for the design and the way we worked together.

What was innovative about the solution?

Both the procurement method and the construction solution were new to us. The situation here is that we don't know how long the troops are going to be deployed in a particular location. We have to plan for the contingency that we may not have the same requirement in five years time. We have specific requirements for our buildings so they must be specifically designed and they would not be to everyone's requirements. If we had to move, we don't know who else would find them suitable, so the re-sale value is likely to be low. Consequently, we felt it would be an advantage if we could move them.

The buildings that Henry Brothers designed are system-built from a steel frame and pre-cast concrete. The bathroom pods arrive on site complete and ready to be dropped into place. At first the buildings were clad in a normal brick skin, but now Henry's have developed their own brick-faced cladding

system which is easier to erect. The contractor's aim is to try to eliminate as many of the wet trades as possible. So there is minimum plastering and the pre-cast concrete is already finished inside and is ready to paint. Since the building is being used by servicemen, we have to make sure the materials we use can withstand their heavy treatment.

One of these buildings was built some time ago in what we knew would be a temporary location and we are about to move it, so we will be monitoring the cost and how the process goes.

How do you decide what degree of certainty you want?

We develop the client requirements to a level where a robust budget can be estimated and planning consultation takes place. The contractor's design team then takes the design forward to construction stage, with input at every stage from DE and our consultant advisers. A target price and maximum price are then agreed and the contractor manages the construction. Pricing is complex. There is a sliding scale between the two with incentives to keep the price down. If they go over the maximum, then they carry the additional cost. Quality of the contractor's management and design proposals is the most important criteria in the tender assessment: price is also a significant factor, but often it is not the lowest tender that is chosen.



‘It has proven beneficial to have more construction activities carried out off-site. The result is better quality.’

David Henry of Henry Brothers

We undertake risk analysis throughout the project to ensure the budget is managed, with minimum standards for quality which must be achieved or bettered. We monitor their performance.

Careful consideration was given to all the costs of ownership in value-engineering and value-management workshops and in regular design meetings. Under the contract, the contractor has to maintain the building for three years following hand-over. Surprisingly for such a large property management organisation, we don't have a great deal of reliable data on operating cost, but we are starting to gather it on these projects. Then we can assess what money we are spending on maintenance, energy and water to improve our management of it.

Risk is managed by a complex analysis, estimating probability and then deciding who is the best person to carry that risk.

There are some security aspects when occasionally we have to change things but cannot explain why. However there is never any conflict over this.

IMPLEMENTATION

How did you all work together?

The supply chain was chosen by the contractor and nominated at tender stage on the basis that they had a good track record. We evaluated the various tender proposals on the basis of relevant previous experience and chose the successful bidder using a marking system including both cost and quality. Some contractors have in the past been targeted for working for the MOD, so it is always important that any supplier will not disappear at the first sign of trouble.

‘The nature of work for the MOD in Northern Ireland is that things change quickly and so we have to assume that there will be changes that we cannot foresee.’

Malcolm Kerry of Defence Estates

In the early days, it took a while for us all to get used to working more closely together, but now it all works very smoothly.

How did you all communicate?

The project team which works at a high level meets monthly. We met more often at the start when we were still planning. Then there are other meetings covering design and day-to-day co-ordination of the project. This is quite extensive, so that everyone involved understands the process. Communication has been excellent. Although it can be time-consuming for all involved, it is worth it.

We focus on delivering the product in the agreed timescale and we have a good feedback process. The contractor also has a continuous improvement process which he takes very seriously, and a formal lessons learned workshop involving the key team members has pointed up improvements for all parties.

How did you keep the programme on track?

The client had an end date which was published for the work at Ballykelly. However the date was brought forward by two years, during the tender period! We had to have weekly meetings because there was so much to be done in a short time. There were also many client changes. For example the 190 beds became 160 and there were thirty substantial changes from the tender stage. However we were still able to keep it on track because it was handled in a spirit of teamwork.



How do you approach safety?

Assessment of safety procedures was an important part of the tender process, and this has carried through into the construction process. The contractor's performance has been exemplary. They have a very active health & safety officer and so it is a very safe site. The contractor was outstanding at removing wet trades and waste.

Risk was allocated by giving appropriate risks to the most appropriate party. We have a regular risk review with open and frank discussions.

What was your biggest obstacle?

Client change and programme constraints were the biggest obstacle and this entailed very hard work sustained over the entire period from tender to the completion of the first projects. Faced with this tight programme, we all had to adopt a co-operative attitude with everyone pulling together. We had a team of consultants supporting us.

THE RESULT

How did you measure success?

The project was delivered on time, within budget and the quality was good. The contractor came in around the target cost. Because of the changes, we had to keep changing the target and maximum costs, which was a very laborious process. It was

worth it on a large project, but not for a small one. Many of the changes were over £100,000 in value.

This was a new process and so there was a learning curve, but we are reasonably close to getting the final figures together. This is well ahead of the time it would have taken on a conventional contract. All the changes would have brought major claims and this would have created much debate. This process has been much smoother. We used an open book, robust, costing system and this was essential to have faith that the charging system is working well.

What could have been done differently?

Better planning by the client would have helped but this is part of life over here. We know change is going to happen and so we have to find a process to manage it. We had very little experience of this type of contract to fall back on; there was no bank of people to tell us how to make it work and so we had to develop effective processes quickly and also rely on good working relationships.

How has this project made a difference to what you will do in future?

We have set a very high standard which we now have to live up to. The client tends to assume we can do everything in

‘When a change was required we used our advisors to define the change, work out what it would mean and what to ask the contractor to do. It was important to involve the contractor early and to say what change was coming, so he was aware, and to keep everyone onboard.’

Malcolm Kerry of Defence Estates

double-quick time! Our people back in GB are looking at what we are doing and seeing that it works well.

What would be your advice for less experienced clients?

Make sure you take plenty of advice, get the right team on board early, and spend time defining the requirement fully. If you need experience buy it in because we’ve used every ounce of ours. Pick the right team and have confidence in the people. I am convinced we had the right team and could not have done it with anyone else.



THE CONTRACTOR’S VIEW

Henry Brothers has carried out numerous projects for Defence Estates on a traditional or design and construct basis. But this was the first contract under this type of arrangement.

As the project progressed, we embraced the concept of the prime contract. We had more input into the process and the client team listened and reacted to our concerns and proposals.

For example, there was one site where the original proposals were for an extension to an existing building. In our opinion it would have been impractical, due to the number of existing sewers, pipes and services runs across the site. We came up with the idea of building a brand new building on the opposite side of the road within the same budget, which the client agreed to. The result was a simpler and safer construction process, which gave the end user a much better facility.

The early involvement is time consuming at the start of any project but is beneficial overall.

The process now runs quite smoothly. However the client does ask for changes and quite often at a late stage in the process. When this occurs we work together to reach an acceptable solution.

After we had completed the first accommodation block we sent a customer satisfaction survey out to the personnel living there. It asked whether they were happy with the accommodation or whether there was anything that could be done better. Nothing major came out of it. However we now make the doors of the baggage room wider so that large storage boxes can be taken into the store. We have also added more shelving into the storage area.

Life cycle costing has been taken into account from the beginning. Our company also carries out the maintenance and repair work, so having the advantage of quality and

LEARNING POINTS:

- If you think the original design is likely to change make sure your process is flexible enough to allow for that, otherwise it can become very expensive and divisive.
- Bundling work together enables the contractor to become better, as you learn to work together.
- Think ahead when you design your buildings to make sure they will be what you want in the future as well as now.
- Incentivise your contractor to keep the final price down, but not by choosing the cheapest.
- Keep an open book to make sure that you are paying what you think you are paying while understanding that the contractor will only do a good job if he is making a reasonable profit.
- Pick the right team and then have confidence in them.
- Define your needs in terms of the output rather than a detailed design spec.

high specification built into the contract from the outset is a major benefit.

It has proven beneficial to have more construction activities carried out off-site. The result is better quality. We manufacture the en suite shower room pods, wall & floor panels and structural steel frames under controlled factory conditions. This results in considerable labour savings on site, where the labour force has to be security cleared.

The bid costs for this type of contract can be severe, but in the long term you have a secure profitable workload. I believe the main benefit is the closer involvement with the client this gives us a clearer idea of what is needed and when.

Upgrading the King's Lynn Compressor Station, for National Grid Transco

The Project Partners

Client: National Grid Transco

QS/Project Manager: National Grid Transco

Funder/Sponsor: National Grid Transco

Contractor: AMEC

Form of contract: ECC



Paul Cumpstone, Project Team Manager, and Steve Yeoman Environmental Advisor from National Grid Transco explain how they decided to separate cost and value. They found that, although they knew their business best, they could become even better if they learned from their contractor's experiences with other clients.

Gavin Simpson explained how being more involved with the project motivated the whole team.

THE PROJECT:

Background

National Grid Transco operates the national gas transmission system. Compressor stations are used to pump the gas around the system and are driven by gas turbines. We needed to increase capacity at the Kings Lynn site, and so this project was to upgrade the station including the building and equipment.

One of our challenges on these projects is minimising the environmental impact of the building and installing industrial equipment in rural areas. It was

especially important on this project which bounded the Sandringham Estate.

Traditionally we would have had the design produced which we would give to several of our approved contractors to price. We would then choose the cheapest. But, we needed to get away from this model and separate cost and value.

Like many large ex-public sector companies, we thought we knew our business best. But, we had forgotten that contractors are building this type of building for other companies world-wide. They could bring expertise and best practice from the rest of the world to our project.

What was innovative about the solution?

We decided to ask four contractors to produce a 'proof of concept'. This meant telling them what we wanted to achieve and then letting them tell us how to do it. This included the design, the capital cost and the cost of maintaining the station over 20 years.

We felt this would move us away from the 'build it cheap' and get the best value for the company. It did mean though that I had to tell the managers that we may not be accepting the cheapest tender. The results were that these contractors came back with solutions that we'd never even thought of.

We worked together as teams. We took them round the site, made the existing drawings available to them and gave them information on our business needs. We also gave them a contribution towards their costs.

Once the project team had evaluated the bids, we made a contract award presentation to the directors to get it signed off. The tender evaluation had to include an environmental evaluation as part of the process.

Before we began this project I talked to Shell and Thames Water, who had looked at partnering, and also to some contractors. I read papers on the subject too.

How do you organise your projects?

As soon as a project has been identified, a Transco project manager is appointed. It's then up to him to drive the project forward.

We are governed by the Utilities Directorate on purchasing and each approved supplier is listed in our Qualified Vendor database. So they are pre-qualified as capable in terms of health & safety and financial performance and we monitor their performance. The contractors who tendered were from the database.

How do you decide what degree of certainty you want?

We focused on the true cost of ownership. That meant looking at things differently. For example they used low energy lighting and the waste heat from the engine oil was used to warm the fuel gas.

On a traditional building we would have fitted several 132 kilowatt fans to vent the hot air from the compressor. However, AMEC's design added an internal enclosure to house the compressor which was vented straight to the outside. This meant using 13 kilowatt fans instead, saving us around £80,000 of electricity a year. We could have done this before, but to add the enclosure would have added to the capital cost of the building.

AMEC's design also managed to defer some of our capital expenditure by re-using old equipment.

‘We decide the performance and then ask the contractor how they would achieve it, how much it would cost to build and the maintenance costs over 20 years.’

*Paul Cumpstone Project Team Manager
National Grid Transco*

We actually managed to reduce the costs by 10% mainly due to taking out parts of the design that we didn't need.

Quality is important but a subjective measurement. We have a quality management system because we are dealing with natural gas. We have a raft of regulations on construction and gas activities we have to work to.

We have two types of risk, business and safety. Our approach to both was to analyse them through the project and to put these risks where they were best placed to be managed.

IMPLEMENTATION

How did you all work together?

We needed to integrate the teams so once they were agreed we had a regular programme of team-building workshops. We worked together by going to AMEC's offices in Darlington and working with them there. The one thing I didn't want was for anyone to get out their contract books and start quoting clauses.

How did you all communicate?

Alec Rae was the AMEC project manager. We had a good rapport and a great confidence in one another. During the three years we worked together no contractual letters were ever sent. It was a continuous process with everyone who was involved in the project analysing the process in detail to make sure safety and environmental issues were addressed.

How did you keep the programme on track?

We had a small team on the project of only three people, one being part time. Alec and I met regularly but stood back and let them get on with it.

‘This way of working is much better because it enables us to get buy-in from the people who are working on the project.’

Gavin Simpson of AMEC

How did you approach safety?

Corporate social responsibility is a big driver for us. Safety is a number one issue and is proactively managed. The culture is that everyone reports every potential issue without blame. We have a safety committee who meets weekly and without any input from management address any safety issues that arise.

We have a Behaviour Observation Safety system to encourage informal discussions with people about approaching their jobs in the safest way. We use incentive schemes, charity donations and targets to encourage safety awareness. Our target is to keep our time lost on injury below one in a million hours.

What was your biggest obstacle?

Our biggest challenge was the timescale. We had to keep the plant live but at some point we had to tie in to the existing system. We had a three-week window to do this in and it was fixed two years before. So keeping to the schedule was crucial. The planning had to be meticulous.

THE RESULT

How did you measure success?

It shortened delivery time by six months. Usually a project takes three to four years but we took three years. We saved 10% on construction costs compared with historical costs for similar projects. We also found that we had better relationships with the contractor.

What could you have done differently?

The tie into the existing plant was not in the best location but that was out of our control.

How has this project made a difference to what you will do in future?

This has set the model now and we are working on our second project done on the same basis.

What would be your advice for less experienced clients?

Define what you want to get, rather than how to do it. Focus on value rather than price.

Do your research by talking to other clients and don't be afraid to talk to contractors because they do this sort of thing every day.

THE CONTRACTOR'S VIEWPOINT

When we have worked with Transco in the past they have produced a concept design and gone out to tender. Assuming we had won the job, we would have carried out the detailed design around this concept and become the main contractor on the project. Under this arrangement, the sub-contractors for the project are usually chosen by Transco, not us.

However, on this project Transco decided to start with a clean sheet of paper and let us come up with the best ways to approach the project. Then they chose the best design and allowed us to specify the sub-contractors that we knew and trusted. This is not

‘We knew the sub-contractors because we had worked with them before and they too brought in new thinking from other industries.’

Gavin Simpson of AMEC

unusual in the industry, but it is for Transco. We used the ECC form of contract but, the way this project was set up, any contract would have worked.

This collaborative way of working is much better because it enables us to get buy-in from everyone working on the project. Turnkey and other project arrangements enable the contractor to become more involved in the project. They can bring the experience from working on other projects with other clients. Not only does this bring best practice, but also a sense of ownership resulting in greater productivity and better quality. The ventilation solution that Paul has cited was something we had used with great success on a previous project. This is a good example of how we, as an international project management and engineering services provider, can draw on our wider experiences to offer something new and beneficial to our clients.

The team-building exercises were informal affairs and also good for raising morale. We were all interested to see how the project could work differently. You have to work at these things if you are going to get the benefits of working in a more collaborative way. Otherwise it would be easy for some people to go back to their old ways. There is uncertainty when you do things differently. Some people go along with it, but others need to be convinced.

We shared offices and developed a good team. We worked in an open-book manner and so there were no surprises. The ethos was let's get it done, show how we can do things differently, generate value and make it work.

This time we placed the sub-contracts, whereas on other projects we would have used Transco's preferred sub-contractors. We knew these people because we had worked with them before and they too brought in new thinking. They had worked in other industries and brought some of their methods of working to the project.

As a result of this project, the Transco team now acknowledges that other people do have the skills needed to improve their projects and they are keen to innovate, especially in relation to health and safety.

LEARNING POINTS:

- Contractors are likely to have experience from working with other clients that they can adapt for your project to bring benefits.
- Do your research by talking to other clients.
- Bringing in contractors and key supply chain members early can actually save time.
- By working together, you can take out things you don't need to save money.
- Telling your designer what you want to achieve rather than what you want to build can save time and money.
- Don't be afraid to talk to contractors because they do this sort of thing every day.
- Sometimes it's good just to start with a clean sheet of paper and you come up with ways of doing things that you wouldn't have dreamed of.
- People tend to think they know their business best and forget that others from outside may know what is best practice world-wide.

‘The one thing I didn't want was for anyone to get out their contract books and start quoting clauses.’

*Paul Cumpstone Project Team Manager
National Grid Transco*

A landmark development at St George Wharf, London

The Project Partners

Client: St George South London Limited
Contractor: St George South London Limited
Supplier and sub-contractor: Marble Mosaic
Funder/Sponsor: St George South London Limited
Form of contract: St George Trade Contract

Tony Pressley of St George South describes their procurement philosophy to promote efficiency, innovation and manage risk. This leads to long-term collaborative working arrangements with key suppliers. Dennis Vittle of Marble Mosaic describes how this has worked for them.

THE PROJECT:

Background

St George Wharf is a landmark mixed-development designed by architects Broadway Malyan, on the bank of the Thames at Vauxhall. It features five futuristic stepped towers that cascade down to the river.

St George has predominantly acted as developer and constructor controlling all the processes of producing buildings from land purchase, through planning, design development and construction to delivery to the end purchaser. Control of all of these processes enables the company to achieve the earliest possible delivery to market and to be flexible to changing market conditions and our purchasers' requirements.

Our financial evaluation and monitoring processes ensure that the design and construction of the product is controlled. Pre set budgets are established at the stage of land purchase.

Detailed design, pre-construction and construction programming methods are used to control the overlapping and often simultaneous processes of design package development and construction works on site.

To enhance the efficiency and speed of construction we have moved to fabricating critical elements of work off site. This



initially related to the use of pre-cast concrete exterior wall panelling and balcony slabs. Over the past five years we have moved more elements to the off site fabrication process. For instance, balconies are now delivered with drainage gullies and pipework cast in, balustrading post spigots cast in, waterproofing and tile finishes applied. Once these are cast into the concrete frame, the only site fix element left to complete is the installation of metal balustrades and glass panels.

How do you decide what degree of certainty you want?

Ideally we would like to achieve total certainty of both price and programme. It is very difficult to achieve in an environment where, theoretically we offer ultimate choice options to our purchasers.

We carefully manage risks to achieve best overall benefit. Where we assess risks are high, we will build the building, or those high-risk elements of the building, using our own in-house construction teams.

We have applied for planning permission for a fifty-storey tower, as part of the development, which is supported by sustainable energy systems. A wind generator is planned to be fixed to the top to provide power for the common parts. The heating and cooling systems for the whole building will use the London aquifer as a constant thermal source. The external envelope is a

triple-walled, self-ventilated glass façade designed to high insulation and thermal efficiency levels.

Over the past four years we have developed complex waste management and recycling systems. All plasterboard waste is recycled as part of a collaborative working agreement that we have with British Gypsum.

IMPLEMENTATION

How did you all work together?

We aim to create a St George 'project team' of staff from the disciplines of design, procurement, commercial control and construction, that is singularly focussed on efficient project delivery. This team is based on site. We fundamentally believe that it is important that they work together in the same office. This improves communication, team spirit and focus on a common goal.

We implement a commercial testing process when procuring trade contractors. Intelligent procurement is not about aggressive tendering. It must encompass a comprehensive assessment of the contractors' ability and resources to ensure that proper standards of quality and safety performance are achievable. If a trade contractor performs well, we are more than happy to enable a rolling programme of work opportunities, provided this is linked with continuous improvements in quality, service and price efficiency.

For example, our concrete frame contractor at Riverside West and now St George Wharf has consistently won repeat contracts in competition. We have worked with them and the Building Research Establishment to analyse concrete design and construction methods. The aim was to develop more efficient methods of constructing concrete frames. We have benefited from more cost-effective methods of construction and the contractor has secured continuous work from us over a number of years. As a result of this collaboration he has benefited from increasing his efficiency and reducing his cost base.

Aggressive tendering can result in a significant waste of resource. We recognise that in areas of specialisation, where experienced trade contractors are scarce, there is benefit in developing longer term collaborative relationships. Marble Mosaic has manufactured most of our pre-cast wall panels and balconies in past years. They consistently prove that they are competitive. Their quality and management service is of a high standard. This has allowed us to provide them with a regular flow of work enabling them to invest in modern plant and equipment to become more efficient and cost-effective. After working together for a number of years we now have regular three monthly principles meetings to plan pipeline work. This gives us security of control of our supply chain and delivers business and profit stability for them.

We frequently let trade packages that include design development responsibility. This is not a 'risk transfer' exercise; we aim to harness the expertise and innovation drivers that lie within the trade contractor base of the construction industry.

How did you all communicate?

We use Asite as a collaborative electronic communications tool. It has given us a significant benefit in the speed in which we can issue drawing packages and turn round trade contractors' drawings submitted for approval. But, you cannot get away from face to face contact. This means a regular structure of meetings both with our designers and with our trade contractors. We are careful to ensure that meetings are properly planned and managed to make them time efficient and effective.

How did you keep the programme on track?

I have to know that the design is being produced at a rate that is geared to and driven by the build programme; so we invest hugely in pre-planning and monitoring the overall plan. We have comprehensive reporting techniques. About 60% of

our flats are sold off-plan before the building even comes out of the ground. Our purchasers will want to know when their property will be ready to move into.

Detailed forward planning is embodied in all of our processes. Particularly in respect of the activities that precede the works commencing on site.

We constantly monitor off-site fabrication activities of critical trade contractors to ensure that pre-constructed elements arrive on site to exactly the correct time-scales and to the correct quality standards. For instance, for curtain walling production, our staff regularly visit the trade contractors' design facility to check on design progress, and component manufacture. Control of your supply chain is fundamental to achieving success on large, complex, construction projects.



“To enhance the efficiency and speed of construction, we have moved to fabricating critical elements of work off site.”

Tony Pressley of St George

‘The project team is based on site. We believe that it is important that they work together in the same office.’

Tony Pressley of St George

How do you approach safety?

We implement very rigid Health and Safety policies on all of our sites with zero tolerance for non-compliance. We back this with resource – each major project has its own dedicated Health and Safety Manager and training.

We drive trade contractors to undertake regular ‘Tool Box Talks’, we have implemented a measurement system that benchmarks this area of training. We firmly support the CSCS registration scheme. Trade contractors need to demonstrate that a set percentage of their workforce is registered to qualify for bidding our work. We assist them by providing on site training in conjunction with the local colleges and in collaboration with Lambeth Council. Regular visits of the CITB CSCS testing bus are arranged to simplify the testing and registration of our trade contractors’ operatives.

All of our managers receive a comprehensive Safety Training Programme, the foundation of which is the five-day CITB Site Managers Course.

We are pleased that our efforts and those of our trade contractors resulted in St George Wharf achieving one million hours without a lost time safety incident in 2003.

We employ a Workplace Co-ordinator, who organises these facilities. She also provides work training and support for a range of people who wish to enter the construction industry including long term unemployed and homeless people, by creating work opportunities for them with our trade contractors and commercial operators.

What was your biggest obstacle?

Our greatest challenge is providing the quality of finish and the standard of service that our purchasers expect. The name of St George is founded on high quality standards. To achieve a quality product demands very high attention to detail and management processes that check the construction at key ‘hold points’ to ensure that quality is ‘built in’.

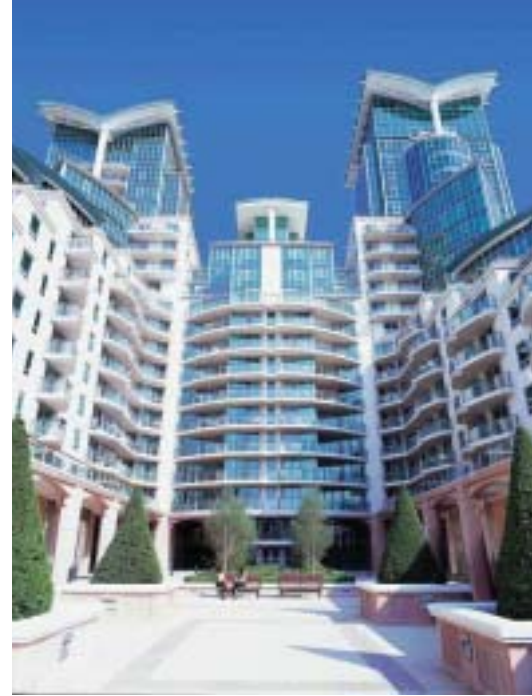
Our sites are managed to eliminate detrimental impacts on residents living on partly finished developments. Not only do we need to create safe means of access and egress for our residents, but these also need to be immaculately presented to create the correct overall experience for prospective purchasers and our residents. At St George Wharf we have currently sold 600 flats and we have around 1,500 residents living in the completed parts of development immediately adjacent to a major construction site. Our site works are planned around the needs of our residents, making our construction operations particularly challenging to manage.

THE RESULT

How did you measure success?

This project, consisting of a whole series of similar buildings, gives us the ability to measure the benefits of any changes in design or process that we implement.

St George Wharf is a demonstration project under the Government’s Constructing Excellence programme. Data that we have collected from our own KPI systems has been fed into the Housing Forum. It is difficult to compare our ‘out-turn’ results with other residential developers building on open greenfield sites as the challenges and forms of construction are so different. However, we have been able to demonstrate continuous improvement by benchmarking our own product comparing our ‘out-turn’ results building to building.



The project team has been very fortunate to secure several awards including the NHBC Supreme Award and the Quality in Construction – ‘Achievement Through Innovation Award’. St George is the only property developer to have been granted The Queen’s Award for Enterprise: Sustainable Development 2002.

Quality of build and quality of service are the key drivers that underpin our success and this is reflected in the continued high demand for the St George product.

What could have been done differently?

In hindsight, more off site fabrication would have created greater efficiency. We have just started using panellised curtain walling systems that avoid the necessity of external scaffold. The benefits have been quite

‘Our challenge is managing a production facility with high fixed costs and so our objective is to secure continuity of work. This is a major bonus of working with St George’

Dennis Vittle of Marble Mosaic

dramatic in build efficiency but this needs to be carefully weighed against the additional cost penalty.

We had considered using bathroom and kitchen pods but the use of these would impede the opportunity of offering a choice of finishes to our purchasers.

How has this project made a difference to what you will do in future?

We are constantly changing and trying out new ideas to meet different market conditions. However, this has tended to revolve around developing more off-site fabrication and the refinement of our management systems. With the continued growth of our business and size of projects we will move to using larger Trade Contract packages and Main Contractors to construct our projects.

What would be your advice for less experienced clients?

My advice would be to be open-minded enough to examine new approaches but to be aware of the risks.

THE SUB-CONTRACTOR'S VIEWPOINT

Marble Mosaic won contracts to provide and install the wall cladding system and supply the balconies for blocks B and C, in an open tender. We have developed an innovative way of producing the balcony units which we supply to the project in line with the frame programme. We also produce the pre-cast wall cladding.

Our challenge is managing a production facility with high fixed costs and so our objective is to secure continuity of work. This is a major bonus of working with St George. This project has six phases over five years. We are also working with them at Battersea Reach and Imperial Wharf. In fact St George as a client takes up to 50% of our workload and this security of workload has enabled us to invest as well as innovate.

They are an exacting client but, as they have become more confident in us with each phase, they have given us more responsibility. We did look at a formal partnering agreement, but decided that the current arrangements served us both better. Now, we are written in as preferred sub-contractor when contract goes out to tender to main contractors. We have invested in IT with AutoCAD and electronic communication. Using the Asite collaboration software meant we had to train our people and upgrade certain parts of our hardware. We have provided our bespoke spreadsheet to St George, which we developed for pricing, so that all our pricing is open book and they can plan their costs. They are also a very good payer.

On the first phase of St George Wharf the balconies were just architectural concrete units for casting into the structure. Now we incorporate the drain-hoppers, pipework and rainwater goods, waterproof membranes, tiling and the spigots for the balustrades. The units are delivered to site fully protected to avoid damage. When we built the first phase, the finishing of balconies proved very difficult for St George to manage on-site. We both agreed that this could be better done off-site and have developed this. I think we were all surprised by what we have been able to achieve over the last four years. It's only when you look back you realise how far you have come.

We have also allocated an area within our works for storage racks to enable the window contractor to come here to install the glazed window units in the wall cladding units. So they are now installed on-site, ready-glazed. We have also innovated in the wall cladding system design. There is a minimal space between structural slab and soffit and the finished floor and ceiling levels; so we developed a special fixing to the edge of the slab, which acts as a restraint for the lower and upper pre-cast units, and keeps the projection into the building to a minimum. The precast units are now sealed internally as the erection

works progress – providing an early water-tight enclosure for following trades. We also fire-stop fill the cavity between the pre-cast unit and the structure, completing the envelope without the necessity for additional trade interfaces.

The major benefit to us is that we have a secure workload and can plan forward with likely time frames. St George has confidence in us to produce our products to the required quality and programme standards, so we are committed to each other.

‘Not only do we need to create safe means of access for our residents, but create the correct overall experience for prospective purchasers and our residents’

Tony Pressley of St George

LEARNING POINTS:

- If you think that there will be changes allow for it
- Invest in pre-planning
- Look at new construction methods to become quicker and more efficient;
- Using a collaborative communications tool has a significant benefit in the speed in which we can turn round drawings
- The real benefits of a long-term agreement are realised through innovation
- Be open-minded enough to experiment but to be aware of the risks. If you take small steps then over a period of time, you find you have come a long way.
- Collaborative approaches are most likely to allow the mutual goals of the participants to be achieved.



Enhanced Water Treatment Project for the Arsenic Removal Programme at Severn Trent

The Project Partners

Client: Severn Trent Water Limited

Contractor: Interserve Water

QS/Project Manager: Severn Trent Engineering & Purchasing

Funder/Sponsor: Severn Trent Water Limited

Form of contract: IChemE Green Book Cost Reimbursement



Arthur Menzies of Severn Trent explains how they were able to capture knowledge and gain experience on one project and use this on similar projects carried out later to make them more cost-effective and run more smoothly.

Steve Moffat of Interserve talks about Interserve's contribution to the project.

THE PROJECT:

Background

In 1996 it became clear that there was new EC water quality legislation coming in 2003 for the limit to the amount of arsenic in drinking water. This affected us because arsenic occurs naturally in sandstone within the Severn Trent Region. Having looked at the alternatives available we decided that we needed to develop a more economic process to remove it from scratch. Then we had to install the process into 16 sites that were exceeding the new limit.

We began with a benchscale pilot with trials and then a full scale plant at our Burton Joyce site in Nottingham. We developed what we call the SORB 33™ process.

Then we had to find a contractor that could handle the build to our timescale. We are regulated by the economic regulator for the water and sewerage industry in England and Wales (OFWAT) and we are currently in Asset Management Period 3 which we call AMP3. This is the third five-year cycle of price rise limitations, which runs from 2000-2005. OFWAT wants greater

“Once you incentivise people to minimise costs the innovation will come out. But you need an open mind to get the real benefits.”

Arthur Menzies of Severn Trent

efficiency from water companies and so the budget was tight. We had to find a way to build on the 15 sites without compromising on quality. If we did not meet the timescale then we could be prosecuted by the Drinking Water Inspectorate.

We had developed an innovative new process for filtering the arsenic out of the water so we didn't want to reveal it to all the contractors who were tendering. We asked contractors for a schedule of rates to compare the organisations. We chose Interserve because of their approach to project management, health & safety record, quality control, economic approach and previous experience. This was done on an objective scoring regime. However, they had been the contractor for the full scale plant at Burton Joyce so we had worked with them before.

What was innovative about the solution?

We decided on a batching strategy to get standardisation. We decided on two phases so that we could learn the lessons on the first phase and use them on the second phase. We also wanted consistency of staff so that we didn't lose the knowledge we were gaining from each project and later projects benefited. Since we were talking about four years work, worth £23m, there had to be some lessons learned.

Apart from the treatment process, we also developed new systems for working through the scheme. There was the financial risk management but also key performance indicators and Principled Negotiations.

All of these were aimed at co-operative working and problem sharing. We identified risk and then developed plans to minimise our exposure to it.

Our approach is to be hard on facts but soft on people.

How do you organise your projects?

Previously we would have gone to tender for each site separately. But, this time we wanted standardisation to get a similar approach and to create a learning environment.

We wanted to work with our contractor to eliminate waste, so we opted to use an open book target price method. We staggered site starts on the first phase but when we felt we had learned sufficient, we did the designs for the second phase so there was about a year between the two starting.

How do you decide what degree of certainty you want?

They were let as design and build contracts, so when we had approved the final design for the site, a target price was agreed.

Variations were inevitable with a new process and we were learning and improving the process as we went along. We used Principled Negotiations.

We had an incentivisation scheme with reimbursement of costs. This meant that we worked together to exclude wasted time, materials and effort. So, once we had agreed a target price, if the actual cost worked out at less, then we shared the benefit. However, if the costs worked out more we shared the additional cost up to an agreed ceiling. We called it 'gain & pain'.

We looked at whole life costing and did a net present value analysis of running costs to build these into the budget. One big cost is electricity and when we looked at a pump we found that 2% of the cost was the capital cost while 98% was for running and maintaining it. We decided that we should standardise by using one manufacturer who could provide the lowest whole life option and after sales service.

As a water company we have to satisfy the requirements of OFWAT, the Drinking Water Inspectorate and the Environment Agency. This means we will not compromise on quality.

‘The important part of this wasn't the scoring but the discussion that came from it and the actions we decided on.’

Arthur Menzies of Severn Trent



IMPLEMENTATION

How did you all work together?

We took part in joint training sessions which included ourselves, the contractor, consultants, and key suppliers. In fact it was the whole supply chain. This was key to the culture of collaboration.

It's all about understanding each other's businesses, working co-operatively and not looking after your own self interests. When you get together with the whole supply chain round a table you can approach problems much better.

We wanted to develop innovative solutions and eliminate waste. For example on Phase 1 we used traditional structural steel for the pump house building, but aircrete block is time-consuming and expensive to erect. So the contractor suggested using pre-fabricated buildings because they had used them on other projects. We went to talk to some manufacturers and selected a robust design that could be delivered from the factory and erected in a day or so. Once you incentivise people to minimise costs the innovation will come out. But you need an open mind to get the real benefits.

How did you all communicate?

We decided that we would never post drawings for approval so we always met and discussed them together. We used Interserve's office in Edwinstowe and we were given free access to the offices and had desks there for the Severn Trent staff to use.

'The benefits of a group of people working together will be limited if they aren't open in the way they work together.'

Steve Moffat of Interserve

How did you keep the programme on track?

We worked with the contractor in establishing a programme. It was not prescriptive but included construction periods, sequencing and planning. We had set an end date of October 2003, so we looked at how we could meet this date as a team. We had two site-based project managers. There was also an agent for each site but as soon as one site was completed they moved onto the next one. We had five Severn Trent staff that saw the process all the way through.

How did you approach safety?

We do have a rigorous health & safety culture. We have a safe system of working for all site activities. We look at ways to share lessons from incidents and prevent them happening again. In fact we host an annual innovation award for contractors where an award is made for Health and Safety excellence. This is one small part of promoting a positive health and safety culture.

What was your biggest obstacle?

I think this was the change that was needed within the organisation to allow co-operative working. People are used to adversarial contracts and a claims culture and so it needs a behaviour change. Fortunately our Director is committed to collaborative working so we have the top-down commitment we need. We knew it was the way to go but under pressure people tend to revert to type so the change process is a long one.

THE RESULT

How did you measure success?

We used hard and soft measures. We looked at the budget both by site and by the whole project. We also all scored one another's performance on the project on a scale of 1-10 for each aspect and then talked through how any issues could be solved. We had a set of prompts so we knew how to benchmark i.e. 'what a 5 was' – which made the scoring quite objective. But the important part of this wasn't the scoring but the discussion that came from it and the actions we decided on. We worked with procedures that didn't get in the way.

What could you have done differently?

We didn't get the level of standardisation that we set out to because we were learning and improving all the time, but we got plenty of innovation instead.

How has this project made a difference to what you will do in future?

We have a capital projects programme of £320m per annum. Since there are 8,000 projects for AMP3, a lot of lessons have been implemented and we are evolving and improving. We have reduced our number of contractors from several hundred to 43 and we are encouraging them all to exchange best practice between one another. The same applies to our framework suppliers. We now have four suppliers who all supply us with exactly the same standard motor control panels.

What would be your advice for less experienced clients?

Work with your contractors because they have a lot of experience and knowledge. Aim to understand one another's objectives. Develop an approach that will get you the best and leanest projects.



THE CONTRACTOR'S VIEWPOINT

We try to be customer focused and understand the client and the supply chain. Severn Trent was also changing the way it worked and was open to suggestions. So we were all up for it. But it is no good a group of people working together if they aren't open in the way they work together.

We didn't find the project difficult to price because we have used this type of equipment on other projects but for different applications. The way we worked brought everything onto the table and so if Severn Trent wanted something that wasn't priced, we talked to them about it to make sure they understood the cost and whether the cost benefit was worth it. The team had an open approach and were happy to consider almost anything that was put on the table by either side. We had this sort of team culture. We could then talk about how we could make it work, rather than if it would work. The approach to construction risk was an example. In many cases the contractor takes the risk, but here we looked at who was best placed to manage the risk and they would take it on.

We managed to capture learning points because we staggered projects and bunched them into two phases. We kept the same team throughout the project. At the end of the first phase we took another look at what worked well and what didn't. In fact we all got together in a workshop to do this. It enabled us to re-think some of the ways we were doing things. We used Key performance indicators (KPIs) at both senior and site level. We had two project managers and they scored their teams with the Severn Trent team round the table. Severn Trent have prompts for judgement against criteria so we could judge what we would have to do to score a 6 for example. Then we formed action plans for dealing with issues that emerged.

Phase 1 was a longer learning curve but as the job went on we became teams. To start with we focused on the best engineering solution. During Phase 2, with more certainty of the process solution, we focused more on standardisation and constructability rather than engineering excellence. We moved from traditional building to a steel building that folded up and had to be craned in and set down onto a flat slab. It was cheaper and took only three days to erect, compared with a month. But it did have implications for Severn Trent in that it required a different lifting arrangement and they had to deal with that.

LEARNING POINTS:

- When you are working on projects that are repeated, it is better to use the same people. Then you benefit from their learning curve on the project.
- Working with less contractors enables them to feel more confident about their work load from you and so they are more likely to become innovative.
- Be objective about your scoring regime but in the end go with the contractor you know and trust.
- If you have consistency of staff you are less likely to lose knowledge.
- Try to get the whole supply chain to understand one another's businesses then you can approach problems together better.
- Measure performance using both hard and soft measures and measuring one another's performance including the client. But make the scoring objective.
- Look at ways to share lessons from incidents so that they don't happen again.

We have used different suggestions for different clients but it means we can suggest ideas we have come across before if we think they might work. This is the beauty of this type of arrangement – there is an incentive for both parties. The savings are up front, so we share gain and pain.

‘We kept the same team throughout the project.’

Steve Moffat of Interserve



Estate & Community Improvements, for Bedfordshire Pilgrims Housing Association

The Project Partners

Client: Bedfordshire Pilgrims Housing Association

Contractor & Project Manager: DSD Contracting
(A Department of Bedford Borough Council)

Funder/Sponsor: Bedfordshire Pilgrims Housing Association

Form of contract: None

John Lavin from Bedfordshire Pilgrims Housing Association explains his pragmatic approach to procuring the construction work for this project. It saved both time and money, while building a good relationship with his contractor, to the point where he felt he didn't need a formal contract. Ridwan Musa of DSD Contracting describes how he managed the project on a day-to-day basis.

THE PROJECT:

Background

As a housing association, we carry out a lot of prestigious projects, usually large new build or refurbishment schemes. But this project was quite different. It was for one of the less attractive existing estates in the area. The houses are immediate post-war and had been refurbished in the late 1990s. We had re-roofed the properties, put in new windows, made them more energy efficient and improved the whole envelope.

However, the houses had no garages and there was no off-street parking. The streets were narrow and so chronic parking and traffic problems developed. It got to a point where there were rumours that buses and waste removal lorries were refusing to go down these roads, because they were being accused of breaking so many wing mirrors of cars parked along these streets.

We had to get some off-road parking, to improve security and get these cars off the streets.

We own about 600 of the 800 homes on the estate. Fortunately, these houses did have quite long front gardens and some had side passages. We decided that the best thing to do would be to re-configure the frontages, to enable cars to be parked within the boundaries of the houses. However each house was configured differently, with different building lines, so there would be no standard solution. We also wanted to upgrade the boundaries and gateways, to improve security on the estate.

We could have used one of our in-house project managers to go round the estate, to carry out a detailed survey. This would have meant liaising with each resident individually to decide on the best way to approach their individual situation. The re-design also involved laying cross-overs, where a driveway crosses over the pavement, and this needed planning permission. This would have meant taking someone off our core business to do something, which is not only less stimulating, but we really needed them to drive the business forward in other priority areas.

What was innovative about the solution?

Our more innovative solution was to use someone to manage it, who understood the process better. We spoke to DSD Contracting. This was the direct services department for Bedford Borough Council, who now take on other clients and are a much more commercial organisation. Ridwan Musa understood the issues we faced, including the issue of planning permission.

We agreed rates ahead of the job, for the things that were likely to be covered. So, this included importing topsoil, taking up slabs, excavating and the design and planning. These were market rates with a percentage for profit. One of their project managers took on the design, and liaised with each resident about what would work best for them. He was also responsible for getting planning permission, as he was used to working with the planning department. He knew them and what they were looking for, so it all went through very easily.

We had the right set of people and they were responsible for the whole project. So although it was all done on a fairly informal basis, everyone knew what was going on.

‘I am concerned that the act of setting up a formal contractual relationship can build in confrontation, and that the industry hasn’t come to terms with this yet.’

John Lavin of Bedfordshire Pilgrims Housing Association

How do you organise your projects?

On most of our projects, we use an in-house Project Manager or Development Manager. We like to work on a partnering basis. We have Construction Client Charter status and are following a five-year continuous improvement programme as part of the Charter. Increasingly, we negotiate construction contracts, rather than use formal tendering and work towards our Egan targets. This is working for us and we have improved on health & safety, reduced waste, increased recycling and focus on the environment. The only area where we haven’t saved is in costs, although we think that we have improved the quality, so if you costed that out, it would show money saved.



‘One of our big challenges is how to retain the knowledge that gets built up over the project so that we use and learn from it.’

John Lavin of Bedfordshire Pilgrims Housing Association

We didn't have any formal contract set up on this project. This is untypical of our usual model. However, if we are working in a partnering situation, then there isn't yet an ideal form of contract that fully suits this environment, although the industry continues to work on this. There is a possible conflict with our partnering aspirations, in that any form of contract risks automatically creating a formal confrontational relationship. This project was low risk for us. If anything had gone wrong, we could have made good the work at relatively low cost. One advantage of partnering is that lessons learnt in early phases can be used continually to improve performance, and that the opportunity for future phases of work can keep contractors performing to a high level. I feel that if you go down a contractual route, every clause has a cost.

How do you decide what degree of certainty you want?

We have a limited pot of money so the challenge was to get the most done. We worked out rough costs and if any money was saved, it went to do more properties. As the relationship progressed, we developed a greater level of trust.

The financial risks and rewards were shared. As the project developed, despite initially being reluctant, many of our tenants decided to proceed with the work to their homes. This resulted in the need to continually re-calculate target costs. Communication between the residents, the contractor and ourselves, as the client, and keeping everybody informed, was the key to success.

IMPLEMENTATION

How did you all work together?

We started by writing to all our residents to tell them what we would like to do and ask them if they were willing to participate. A few didn't respond, but we worked with the others and developed an outline programme. Because there was someone on site visiting each resident to finalise design details, we could be quite accurate about when they would be starting each residents drive. Also having face-to-face contact meant a level of trust developed. Many of those who hadn't asked to participate at first, became involved once they saw what the results looked like.

However, one of our big challenges is how to retain the knowledge that gets built up over the project, so that we use and learn from it. We wanted the project team to continue and move onto Phase 2. However, we have found that as people from different organisations work in a partnering environment and develop these new skills, they become more marketable and can end up getting promoted, so there is a risk of losing this knowledge! There needs to be succession planning within organisations in the industry to address this.

How did you all communicate?

Ridwan got together a loose collaboration of the right people, including the fencing contractor, excavator, groundworkers, designer and end users and they talked about the interface with the residents.

We had regular site meetings where Ridwan, the site manager, and I would go through key issues. Ridwan also took responsibility for CDM regulations and planning supervisor responsibilities. Meanwhile, either Ridwan or his agent met every resident as the works progressed. When this happens, the professions do start to merge, which can cause some initial conflicts if not properly managed.



What was your biggest obstacle?

We found that we hadn't fully understood the capacity of the fencing contractor and we will manage this better on future phases; the fencing contractor was working more slowly than the driveway contractor, which caused some concern from the tenants who were waiting for their fences to be put up.

THE RESULT

How did you measure success?

If we had taken the traditional route, it would have taken 12 months plus the time for going through the planning process and procurement before work on site commenced. However we agreed principles in January 2003, were on site in the April and Phase 1 is now all but complete.

We used Housing Quality Indicators for health & safety, energy efficiency etc and the tenants filled in a customer satisfaction form. The result was that our immediate project aims were delivered and the appearance of the estate was improved.

The London Road Action Group is now working to improve the lifestyle of the environment. This estate was the amongst our least attractive, but the community now has a buzz about it, helping drive forward further improvements. The residents are working



closely with the Associations Community Development team and are developing wide ranging estates infrastructure plans to provide cycle paths, one way systems, better traffic management. Other such improvements such as community action helps empower the community.

How has this project made a difference to what you will do in future?

This model works well and is a neat solution to the complexities of building, planning and design. For Phase 2 we are using DSD again and have negotiated cheaper rates than for Phase 1.

What would be your advice for less experienced clients?

Partnering works and creates a more constructive environment than the traditional model.

To pick a contractor as your partner, you can get help from the Construction Industry good practice guide, which shows you how to go about it. Choose an organisation with a cultural mix and diversity in employment and working practices, and who have similar organisational values and objectives.

Involve parties as early as possible.

THE CONTRACTOR'S VIEWPOINT

Our work is mainly highway maintenance and we are the direct services department of the Bedford Borough Council. On the estate every property was different. We had a dedicated team, so that the knowledge that was learned was kept in the project. That was very important. We did the design by having a sample layout, and then consulted with each resident, taking on board his or her views and requirements. We also had to consider future tenants and therefore not all requirements could be fulfilled. Sometimes people would have been happy to pave over the whole area, but we wanted to retain some greenery to add greater aesthetics to the area. That was part of John Lavin's brief. There were issues of tenants wanting things done the same way as another tenant, but because of the individuality of the properties, this wasn't always possible. We took the time out to explain to the residents concerned why it wasn't possible.

Before we began the project, we did a letter-drop explaining the hazards that the householder could expect. However we would dig out and back-fill to stone level in one day, so by the evening the householder could get in his house relatively easily.

We needed to get planning approval for the crossovers, but since we construct the crossovers for the highways department, we understood what they are looking for. Early involvement and consultation with the right department meant approval was given fairly quickly. We had no contract with John, just a brief. We used the Schedule of Rates that we devised when we won a recent competition tender. If we saved money we passed it on and so John could do more drives, so our turnover target was maintained. We started slowly, but as we continued we found more cost-effective ways to work and became quicker. Because we were given a lot of control, we knew what we had to do and made use of economies of scale. We planned to prevent pathetic performance and bring in continuous improvement.

‘We planned to prevent pathetic performance and bring in continuous improvement. If we saved money we passed it on and so John could do more drives.’

Ridwan Musa of DSD Contracting Limited

The site agent was on site several times each day. If John had a problem, he would contact me, but we also met regularly on site and then there is always email or the telephone.

We know now much more about how to do the work efficiently and effectively, and so when John asked for a price for two more phases we could offer him better rates. I think those will start on site some time in April 2004.

LEARNING POINTS:

- Involve parties as early as possible.
- Consult with the end-users.
- Don't lose the knowledge that has been built up over the period of a project.
- Partnering creates a more constructive environment than the traditional model.
- Place the design responsibility where the knowledge of the end-user and 'buildability' converge.
- Innovation is easier where risks are lower, so break down projects into packages where risk is managed and contained.
- Choose partners on the basis of trust.
- Keep end-users informed on the programme.



Larwood Special School extension, for Hertfordshire Schools

The Project Partners

Project Manager & Architect: Mace Limited

Contractor: Grehan Contractors Ltd

Funder/Sponsor: Hertfordshire County Council (HCC)
Children Schools & Families

Form of contract: Joint Contracts Tribunal (JCT)

Phil Roberts & Julie Evans of Hertfordshire County Council explain why this local authority changed the way it procures building work. Colin Williams & Lynne Tyas of Mace show how they are working together with the council to improve the service they give to Hertfordshire's schools, by driving down costs, focusing on the expectations of their end users and introducing a performance improvement system.

Nick White of Grehan explains how they worked with the partnership as a framework contractor on Larwood School and some of the challenges of this typical project.

THE PROJECT:

Background

We have a large number of comparatively small building projects for Hertfordshire schools. In the past we had a long list of contractors and so, when the design for a project was done, it was put out to tender as a stand-alone contract. But, in fact a relatively small number of contractors tended to be successful. They understood the way we liked to work. But we wanted to have early discussions with our contractors to get the benefit of their experience during the design stage.

For example, we have a number of special schools but, due to demand, we needed to add capacity. We decided to extend Larwood School to take five additional children. We based the brief on Building Bulletin 77, the DfES guidance that recommends room sizes for each type of pupil. The best place for the 36msq extension was next to the Key Stage 1 classroom, where the children were aged five to seven years.

Twenty five of the children were residential and so the school was in effect their home as well. Ideally, they would have their own dining room to use when the other children had gone home. This is now part of the National Care Standards for residential schools. However, there was pressure on space and they had been eating all their meals in the school dining room.

So the main issue was managing a building process with children on the site, both day and night. The behavioural difficulties of these specific children meant that the contractor needed to manage the noise levels and the disruption to their normal routine.

It was important to us not to lose the knowledge that had been built up, from job to job. For us the benefit of the framework agreement is that Grehan, the contractor on this project, could bring their previous experience from an earlier project at Hailey Hall, which is a special school for secondary age children. Many of the key people, including the contracts manager, moved across to work on Larwood School. This is what we intended when we changed the way we worked. It is a challenge for us to achieve this level of continuity. We still have to solve issues like forward planning, managing funding streams and political consultation, but we have to learn how to do it.

What was innovative about the solution?

We decided that we wanted to work with the best contractors where we could to get the best value. We were aware of initiatives like the 'Integrated Team'. Six years ago we let a five-year contract for all professional building services to a single provider, except project management, which we kept in-house. But we still didn't think this was the best option. So next time round, we decided to separate the specialist functions of project management, estates management, and repair & maintenance and these were tendered separately.

Mace was awarded the contract, as Project Managers and Designers, with a remit to restructure towards building an 'Integrated Team'. We took a risk because they had no previous track record of working for a local authority, but they had worked for a number of best practice serial commercial clients such as BAA. We agreed a framework of improvements. We gave Mace KPI targets to achieve, including customer satisfaction and

‘If we can continue to save 3-4% on every project, we could get on with another couple of projects each year.’

Phil Roberts of Hertfordshire County Council

linked their performance to financial incentives. We used the government's KPIs, because they related to what the Children & Families Service department asked for.

We decided to appoint six framework contractors, including one to provide pre-constructed buildings. We chose these six because they demonstrated that they understood what we needed. We wanted to bring the contractor in early, so that if there was an issue with the budget we could work it out together.

How do you decide what degree of certainty you want?

Our emphasis is on the right balance of cost and quality. For example we chose Mace as our project managers based objectively with 40% on costs and 60% on quality.

We have saved £600,000 each year in overheads and profits by using framework contracts, because our contractors don't have to go through the tender process each time. We set performance targets on year-on-year reductions in cost, period of design and period of construction.

Whole life costs are very important to us, but often these don't fit with the way we are funded. We pay for the capital costs, but the schools then cover the running costs. If we put in a radical heating system that is very efficient, the government grant for running costs will still be the same to the school. If it fails we will still have to pick up the replacement costs of what will be a high value item. However, we do keep these things in mind and do test them.

We have to comply with a range of government guidance on the design of schools

and care homes. OFSTED reports comment on the quality of the built environment. We also have our own design standards aimed at improving the quality of the work we do.

We decided to use the JCT form of contract. Although we had discussed this a lot and even had an in-house review, we found that none of the alternatives was perfect for what we wanted and so we decided to stay with what we, and our contractors, knew.

IMPLEMENTATION

How did you all work together?

When we as Mace were awarded the contract, it was based on targets for customer service and we were financially incentivised to achieve these. Mace used its methodology ASSIST (Achieving Seven Steps to an Integrated Supply Team) to help the council overcome concerns and barriers, develop its strategy, set performance targets and ensure the best suppliers were chosen.

We have to achieve high levels of customer service and so we work hard with the framework contractors to do this. We all meet regularly. We look at our processes and take them down a level. We have working groups made up of representatives from the contractors and ourselves. We look at areas that we have decided between us that we need to be better at. For example we have a standardisation group. We know that if Grehans for example over-buy, they won't worry about keeping the items in stock because they will use them on the next project. This saves money because previously these items would probably have been discarded. The benefit of having framework contractors is that there is early dialogue.



We are also looking at the supply chain. We have a group focusing on managing end-user's expectations. In practice, this may be constricted by the target set by the budget holders.

How did you all communicate?

We log all project and key documents onto the BIW project collaboration system. End users can get into the system and see the designs as they are being developed. The contractors are involved early and they sometimes send someone down to talk to the children. At one school the children are following the project by videoing it through its life. We are trying to show children that the industry has a good side and are encouraging them to go into construction.

The issue with measuring customer satisfaction is that most people do it at the

end. But you want to know what the customer wants, at the start of the project.

How did you keep the programme on track?

On the Larwood school project we did have an issue about whether the extension was permitted under the planning rules. We did want to get the noisy part over during the holidays. The contractor was geared up for this. But it was delayed. Fortunately, the school takes in children gradually during the year. So we all met together at the school to re-assess the situation and together came up with a way to manage it.

How did you approach safety?

Health & safety and risk assessment is crucial. These children don't know the boundaries or recognise danger. We had a briefing with the contractor where the head teacher explained how the school functioned and 'special' difficulties.

What was your biggest obstacle?

Our biggest challenge was the programming with so many children on site doing so many things. We used an integrated approach working with the head, who was very involved in the project.

THE RESULT

How did you measure success?

For this project the final cost was £157,000 and we had planned on £163,000. Phil Roberts says that if he could continue to save 3-4% on every project, he could get on with another couple of projects each year.

What could you have done differently?

An issue with planning permission held us back on timing. We know roughly how much a classroom costs, so we can set the budget. But, we must be better at doing things quicker, because if we cannot provide these places, the council has to pay for an 'out of county' placement, which would cost much more.

How has this project made a difference to what you will do in future?

For the Council, everything we are doing is part of this learning process. We now have the framework contracts in place to keep this dialogue going and we are very optimistic that this process will make a difference. These contractors are more willing to take risks, because they have that degree of certainty of work.

What would be your advice for less experienced clients?

Get the brief right and be clear what it is you want out of the building, rather than what it is. Be demanding. Insist on a team approach. Work with people who have the skills and competencies to get you to where you want to be and who you trust. Don't lose sight of your end user.

‘The end user is the most important thing. It doesn't matter how beautiful the building is if the teacher can't use it as they want to, then it's no good.’

Nick White of Grehans Contractors Limited

THE CONTRACTOR'S VIEWPOINT

We have worked with Hertfordshire on educational projects for some time and we understand their issues. We have dedicated staff from the top level downwards who are experienced in this environment. It's about being flexible and understanding the specific nature of each project. We have learnt how Mace likes to work and have embraced many of their new ideas. We are achieving good scores on the key performance indicators. This is important to us because it is an integral part of our contract with HCC. One of the improvements being looked at by all framework partners is standardisation which I think is a cracking idea because it saves costs and gets productivity up.

We also have a new initiative called KIT CAT (Key Improvement Tool, Customer Alignment Tool). It is used to benchmark and subsequently monitor end user satisfaction and the project team's performance during a project. The CAT part of the tool is a project workshop which takes place at early enough stage to capture the expectation and importance of various aspects of the specific project. These are logged in the form of an expectation score and then monitored using the on-line measurement tool called KIT.

At Larwood School, because of the children's needs, it was important to involve the school's staff in each process of construction. Every morning the site manager went to explain what was planned for that day and at what time, to make sure it fitted in with what the school was doing. If it didn't, we worked around it.

Security around equipment was important. In some schools the equipment frightens the children, but in others the children would want to be driving it. We found that we had to drill through reinforced concrete from previous foundations, which was very noisy for these children and we were asked to stop. We got together to work out how we could get over the problem. We agreed times during the day when we could work and planned the construction around them, so it didn't disrupt the programme too much.

The timing was crucial as the break-through from the new dining room extension to the existing dining room had to be carried out during half term. However, the level of trust was high and to assist the programme, the school moved their food preparation equipment, so we could get on with the project.

On this project, I haven't even opened the contract, other than to sign it, because with

HCC the need to do so is minimal. We often don't use a formal sub-contract at all with our sub-contractors, who may be a one or two person company. That's the level of trust we share, achieved through years of partnering with them.

The end users are the most important people. Irrespective of how architecturally beautiful their building is, if it is unusable or impractical then we have failed.

LEARNING POINTS:

- Be highly performance driven because it becomes an incentive to improve.
- Link performance to financial incentives.
- Managing end user expectations is as important as the build.
- Measuring not only tells you where you are starting from but can drive improvement.
- Define a building by its outputs rather than its design.
- Bring the contractor and key supply chain members in early at the budget stage.
- If a contractor can understand the end-users operation and issues as well as their own, they can add value.
- Framework contracts deliver savings on administration.
- The certainty of work of a framework means that everyone will invest their own time initially to encourage learning and improvement.
- Work with people with the skills and competencies you need for the project, and who you trust.



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Project: Marks & Spencer 'Food' and 'Simply Food' Stores

Client: Peter Macleod of Marks & Spencer

Contractor: Andy Hughes of Wates Retail

Project: St George Wharf

Client: Tony Pressley of St George South

Contractor: Dennis Vittle of Marble Mosaic

Getting help



Constructing Excellence

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0845 605 5556
www.constructingexcellence.org.uk

Construction A-Z:
www.constructingexcellence.org.uk/resourcecentre/atoz/default.jsp

Construction Client's Group

1 Warwick Row
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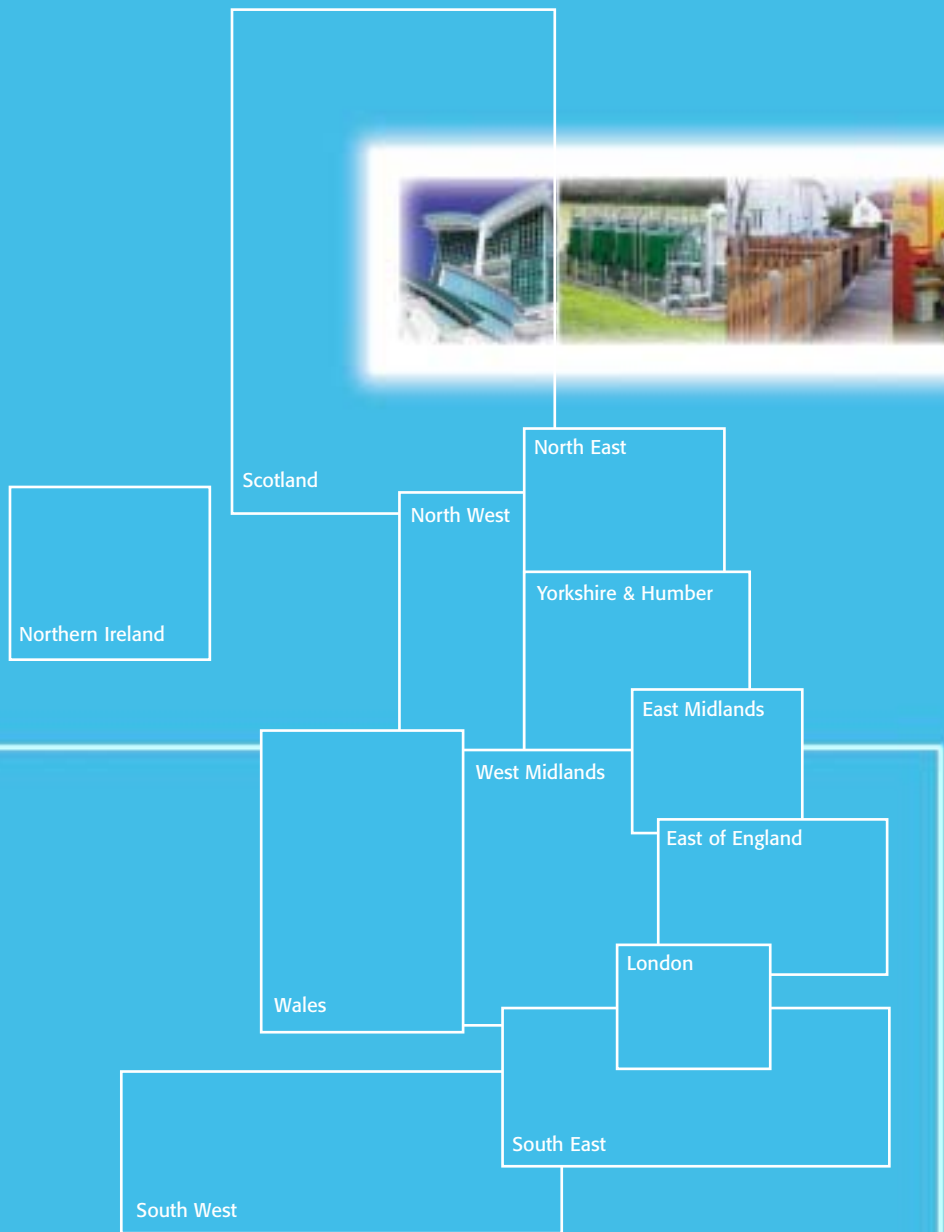
A self-assessment form for CPD certification is available from
www.constructingexcellence.org.uk/service/cpd.jsp

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Building Success

Lessons from frequent clients who got it right – ten case studies

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