

*Appendix Thirty Three – Model  
Interview Transcripts*

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## Interview - 1301

If I just run through the comments that I have jotted down. I see where you have come from reducing it down, but I still think there is a lot there. I was thinking some of them were quite similar. There's opportunities maybe to reduce it a bit more by merging maybe. A couple of them were statements as opposed to aspects. For example, 'collaboration creates a problem solving environment', which it does but it's important that it's more of a statement of how you get there. You could almost say that establishing a problem solving environment will be more likely to create collaboration. Maybe reword it in that way. That might be useful. Then the other one was that, 'collaboration produces a win / win outcome'. Again that is more of a statement as opposed to something that you can do. Maybe look at, "everyone understands what the other parties objectives are, allows the win / win situation to come about". Maybe something like that. Then some are similar 'contract supports collaboration' and 'Collaborative projects encourage more effective information sharing' are similar maybe you can amalgamate them into one. From the point of view of 'risks allocated fairly to the parties' when you set up a contract you are going sort of basically say "well this is how I am to run it and then they will price it to reflect, what you have set out". Whilst you might say I want to share it 50/50 because that is what we quite often do. You might rather as a client, get rid of that risk so there is no such thing as them being fair. The contract says who owns the risk. So rather than allocating them fairly I would talk about actively managing risk having an open debate about them. "The project operates in a non-adversarial environment" yeah that's relevant. It's how you avoid it being adversarial - it's an outcome of collaborating isn't it. So it's maybe just looking at the aspects that you need to do as opposed to what the outcomes or statements might be, so maybe just turning one or two of them around might be useful.

### **Open dialogue**

Yeah, that's agreed. In terms of all of the aspects in the model the personnel you would have would be unlikely to have a collaboration facilitator and a collaboration advisor as well. So it's whether you can potentially say that somebody could become responsible for that facet to reduce the overall number of personnel. You won't always have the funding available to have that many. Then looking at the RIBA phases, I think what's not

been picked up here is the procurement phase. Where does that happen? It happens quite differently in different contracts. A lot of things happen when the contractor comes on board and they are not always on board for the strategic definition and preparation and brief. With some of the other phases it is whether they are on board, it is difficult to pin down that I suppose. I notice the phases are RIBA they have procurement between the technical design and construction phase. They have that preconstruction phase so you wouldn't always have the supply chain and everything on board and so any of these that may involve them prior to that stage depends on the contract. It's difficult really to have one solution to fit all types of contract. I think using contracts which embraces what you have said in an, any size contract is important really. If you have a routine maintenance job where you may be doing some resurfacing project which might be for maybe two months then applying it to a contract like this would not work, so it's picking that up. Think through when the contractor is on board, when you do these things, which ones do you do preconstruction or pre-appointment of the contractor and post-appointment of the contractor. I think that is probably the key thing, be clear in terms of where the procurement sits. You could bring them on board for design stage, the Welsh Government bring a lot of contractors on board at the feasibility stages or immediately after the feasibility stage and then you can do these things.

### **Common aim is shared by all contributors to the project**

We have done this on this project, by agreeing strategic objectives and everybody signing up to those, so yeah. That becomes the common aim then. We did that as a workshop as soon as the contractor was appointed. So it was done at the planning application stage. We had an outline design. The contractor was brought in to do early contractor involvement and that's when the strategic objectives were agreed in the first workshop. I think that workshop was used for people to introduce themselves and for the team to get to know each other. It was also made into a bit of a social event as well so that people had the opportunity to talk as opposed to just focus purely on work. I think it is important to give people that time together to get to know each other. It's how much of that you keep doing or just do it at the outset. I think we tend to find we set objectives and then we monitor how well we are doing by using KPI's to measure how successful we are at achieving those objectives really.

## **Early warning systems**

I think I was a little bit confused here. I don't think early warnings are linked into incentivisation. I think early warning is a function of the contract you have to provide early warning of any risks. So again I go back to early warning about risk management. It's about risk management early warning and not incentivisation. I think you have to give early warning so that we can manage risk. Incentives are more related to problem solving. So on this job for example we did value engineering, if you come up with problem solving ideas, then you are incentivised. So you incentivise problem solving but risk management is just about that really. We don't incentivise that aspect of it. Everybody is involved in trying to keep risk registers down to a minimum whether it is health and safety, financial risks etc. I have just looked at that one again are talking about value engineering and problem solving or are you talking about risk management and then it is not so much about the incentives, associated with that. The incentive in risk management is that you don't have the cost associated with the risk. Yeah, the pain / gain if it doesn't happen. Then it depends then who owns that risk because if it is then I don't think anybody is incentivised. You are incentivised by not incurring the cost but not incentivised by the mechanism in the contract. I think the incentivisation mechanism in the contract about sharing is about keeping the costs down and problem solving. I think risk management is a more global issue and you don't look in detail about what the split is, of how you split that gain so that it's in everybody's interest. I think the incentivisation scheme is really more about problem solving and coming up with better ideas and cheaper ways of doing it and saving money on the site. For example we might get (in the old days) a situation whereby if the contractor did anything wrong, set out a kerb that was a foot out of position, you would say take it that out, it is in the wrong position. Now you would look at it say well if we can live with it and it doesn't make any difference nobody knows it's a foot out so why are we making them take it out when we are going to have to pay. It's in everybody's interest that if it can stay it should stay. Probably the most important thing is making everybody understand how the contractor gets paid and there's an education system in place. Making sure it is not just the management that understands how people are paid but that everyone understands that if there is a saving

there, that everybody benefits ultimately. So to my mind early warnings I would be more comfortable with that focussing on contracts.

### **All team members contribute**

I haven't got any comments on all team members contribute to the project. That's obviously important. As the client you will have the team and then that team grows as you appoint the contractor and everyone else. Where did you have it starting on this one; It's difficult to use with the personnel codes. Belbin, that's talking about different characteristics of different team members isn't it, sounds ideal but quite often it is difficult when you are bringing a team together, because who you have got is who you have got quite often isn't it. You can't suddenly decide is it a shark or a hen. You can't mix and match to take somebody out and bring somebody else in that is a different sort of thing. The important thing is that everybody is approachable and that they are flexible in their approach and they are willing to accept change and work in a different way. If you get somebody that has worked more on a contract in a certain way and that's how they have done it and if they want to be adversarial then it's not going to work. You need people who are open minded in terms of being willing to accept change and for designers that they are will to accept somebody challenging what they have done. Change comes about, through challenging something and there is always more than one way of doing this, but sometimes people are very sensitive. If they have come up with a proposal they don't want somebody else knocking it or coming up with a cheaper or another solution. So it is getting everybody to except that position so they can contribute as well.

(Author - Have there been issues here?) No. On this job we have been fairly fortunate but I have sometimes had individuals that were quite stubborn on previous schemes. The old ICE 5<sup>th</sup> type contract was a lot more adversarial type of contract arrangement. You would have a situation where I would have 30 letters to answer each day, all of them being claims from the contractor. That's what the other side of this looks like. If you go into it this with that sort of approach and everyone wants to embrace it then it is difficult for those types of characters to survive in it really, but they are out there. Just take them along with you and hopefully they will change their minds.

### **Mutual trust**

You get that through respect. Through working with each other it is difficult to force it on anybody and I think that's how you achieve that. You have said about people together that already trust each other. It is okay if you have got your own team there but when you are trying to work collaboratively, bringing another team in it is difficult to select because you have to go through the procurement process. You end up having whoever from the other team is available. Quite often it is about the culture of the business. So it is about working not just with an individual you might know but with a business that has similar values if you like, and hopefully that will come across through any tender process. The other side of it is that you have frameworks, so you do narrow the field a little bit and have the opportunity to work with the same people again. So that's another way of achieving that. I have put something down here about collaboration stroke partnering. What the definition is because that is always an interesting one. (Author – I have written a paper on it). You know where I am coming from then. You are not partnering, basically you are appointing somebody to work as a contractor for you. They have a formal contract in place and there are a set of rules how they are going to work and they are delivering something for you. Well it is not a partnership as you are not getting exactly the same outcomes, so collaboration is a better phrase for it I think isn't it. It's about integrating the teams so you are not man marking and the likes. I think partnering is more where two businesses coming together to put a bid in for one job. If you have written a paper you will know. Would you get a collaboration advisor even at a strategic development stage when there is just your own team together? I think they would be coming on board when you need to collaborate as opposed to when you are getting your own team together. I think it tends to come in when you are considering what contract to use that collaborative side of it and whether you would bring an advisor on board for that.

### **Problem solving**

I think I said it earlier but collaboration creates a problem solving environment I think that's a statement rather as opposed to how you achieve it. I have changed it to "consider incentive scheme that promotes ideas" instead of 'early warning of problems and collaboration resolution' (Phase 1). Under developed design use "processes that capture ideas". You then have workshops being held every 4 weeks; well we don't tend to hold workshops on that frequency. What we do is have meetings to reflect on what objectives

were set in the original workshop and review things via meetings. So, workshops only at the outset really, we don't hold them otherwise. I think if we had problems and things were going pear shaped then we would probably to decide that we would need to hold a workshop to review things. I think we had some strategic workshops, some getting to know you workshops and value engineering workshops just to kick start up the thing and get people working. Just in the first month we had 2 or 3 different workshops then but once you have done that then I tend to think well you can address things in other way. We have value engineering meetings. We would have risk meetings. We would also then use tools like questionnaires so the contractor gathers information to look at areas we might need to focus on. We examine these areas to see are they achieving what they set out to at the beginning. They will be asking questions about mutual trust in the team, are you having fun etc. A lot of questions you have identified as headlines here would be addressed in that fashion really.

### **Everyone understands the other team member's roles**

I haven't really made any comments on defining roles again. You could question what you call the client's representative on site really. Under the NEC contract the term is project manager. Although you end up with everyone being called project manager because everybody tends to use that phraseology. It's difficult I suppose. You should think about having those 2 collaboration advisor and facilitator whether they can be one to simplify things.

### **Team spirit exists between all personnel**

Maybe good team spirit rather than team spirit. You could have team spirit that was different. Maybe there is opportunity to combine team spirit with roles. That is how we termed it on this job that people enjoy working in a no blame culture. Good team spirits is created rather than exists because it exists is more of a statement. You have got to develop it and actually got to work at creating that as opposed to it becoming an automatic thing. So maybe rephrasing it may point people to what they need to do to achieve it.

### **Contracts support collaboration**

That's what a lot of modern contracts are doing so. I haven't come across PPC2000. A lot of them are similar in terms of trying to move away from the old adversarial contract. Let's just have a look at the model, that's fine. It's just about ensuring that is actively managed. I am trying to think if there is anything I can add to that. The use of the contract is critical really. What I have seen done is that you have a contract strategy. So when you might have your procurement advisor thinking through what form of contract are we going to have. You can have the NEC contract but you can also have it adversarial, if you say I'll have a lump sum and there are no incentives in it. Whereas if you go for an option c type contract where you have got target cost. It's no good saying it is NEC. You have got to think which version of the NEC that you want and is it appropriate for the type of contract. If you have done a lot of design and if you want to transfer risk then the likelihood is that while it is still a modern contract it is going to be less collaborative in how it's set up. So just be aware of that really but NEC isn't, in its self all about collaboration, it's about how it is administered. That's why when you have got a procurement advisor you have a contract strategy for procurement set out. Which identifies which route you are going to take and why you have chosen that route which would encourage collaboration. That's a useful document to have in place.

### **Collaborative projects encourage more effective information sharing**

Going back to what I said earlier that is more of a statement and whether you link that one back into using a contract that encourages collaboration so that will allow you to reduce the scale of things. I would move away from regular workshops and use different terms maybe meetings that review the objectives. So use your workshop to set objectives but then use meetings. Depends what you call a workshop. I suppose you could call a workshop a meeting. It is not always possible to get everybody. We tend not to have all the supply chain in to bring in. The end users of things, well once we have done the initial consultation with the end users we very rarely bring them in. We just deliver it to them at the end otherwise it is too onerous. So it's being careful at what stage you invite those end users in especially if you are talking members of the public. Yes you do your consultation but then once we have a contract in place and we need to deliver this we need to do it in a workman like fashion. You have just got to get the key personnel there really and it wouldn't always involve the supply chain either. Sometimes it will if it is



pertinent but if this is a progress meeting then the supply chain is definitely worth having there. They do come into meetings but very rarely the end users.

### **Risks are allocated fairly**

Rather than allocating fairly, you say risks are managed and the contract spells out who owns the risk. Everybody should just agree to manage them. As soon as you allocate them you are almost getting to a position where you are saying, well that your risk. You have to be careful you are not redefining what the contract says. What we have tried to do when we set up a risk register is just list everything. We might name a person to take ownership of that risk as opposed to allocate it to a party. Do you see the difference? As soon as it is allocated you say it has nothing to do with me and you are trying to embrace collaborative working. It's about actively managing the risks and thinking through 'right how are we going to do it' and not talking about the money if it goes wrong. You can have that separately and you can just refer to the contract. Then say well under the terms of the contract this is how it is split. Whereas if you say you have allocated it, you took responsibility for that you can see a whole host of problems coming in there. Those are basically what I have made a note of there. Regular meetings at the peak we would have had fortnightly meetings to review risks and we would adjust those. Same vein we would have value engineering workshops. The other thing we did with value engineering is we'd put lists up on the wall so people could add to it so they didn't have to formally submit something. We put an ideas list up on the walls because it is important to capture whose idea it is. The way the contracts operate the incentivisation is based on who comes up with the idea. If I come up with the idea it is a deletion from the contract so I am incentivised in a different way to the way they are being incentivised. So the incentivisation is not always equally shared. But everyone understands how it works and it's clearly set out. When people come up with ideas you just want to be fair you say that's what the contract says if you come up with it first and you have captured it. You are first with that, then it is yours. We will share it 50/50 because ultimately if they don't spend money then it comes back via the pain/gain mechanism. But equally if the client says well I am not going to build that footbridge because we are just going to make people cross the road. We are not going to give them half the money necessarily, why should we. If we want to save a million pounds by not putting a footbridge in you are not going to give them 500,000 are you. So there is a reason for the contract being set up as it is. But

everyone needs to understand how it works. It's again educating the workforce that is important because a lot, of the more junior staff won't be familiar with the mechanism of how the contract works.

### **Regular meetings with various parties**

Yeah, meetings, meetings and meetings starting from day one when you agree your strategic direction. When you agree to build the road and people meeting to become collaborative. If you are bringing the contractor in to do the design yes, if you are bringing the contractor in just to do the construction then he is not involved. I think it's difficult sometimes to think are we talking about early contractor involvement with them taking responsibility for the design or are we saying the clients has appointed a consultant to do a full design with the contractor on board after. It's difficult to capture that I think. Sometimes you won't get the contractor on board until the preconstruction phase. So that is where I think you are having difficulty in terms of defining what type of contract you are talking about and who comes in where. Try to think it through from a position of having a contract. Does the model work if I get him on board to do the design as well and just see, does it give you the answers you want? or put a note in to explain how they should use the model on that basis.

### **The project works in a non-adversarial environment**

Maybe instead of saying it that way just say a non-adversarial environment is created for the project. Maybe that would be more of a better phrasing of it. Trying to make them understand what they are trying to achieve because that's an outcome of collaborative working isn't it.

### **Managing relationships**

That was done on this project by the use of questionnaires and talking. We used survey monkey. I think we have used a couple of different types to be honest but we do one which is for the whole team and then another one done for the client. The questionnaire

is to see if we are being given what we expect really. We talk through it on a one to one sort of arrangement. So that is part of it. Yes that's all used (reading model). I think it goes back to mutual trust. So relationships and mutual trust are very similar thing really aren't they? If you are looking to reduce the number of sheets maybe you would look at the one to see if those two can be merged.

### **Pain / gain mechanism is fair to both parties**

I have queried what does fair mean. I think it's important to have that mechanism. I think using it is more important than it being fair. You are fair in that you tell them at the outset this is how we are going to do it and they then gauge with that. The pain gain share mechanism should be providing enough incentivisation for both parties as opposed to being fair. You could say I am going to give you 5% of any savings that we achieve and I am going to keep 95% of it. It doesn't sound very fair, but if all they have done is said we are not going to build that footbridge I am going to give them £50,000 sounds quite fair to me. I think using a different term rather than fair might be pain gain mechanism that provides sufficient incentivisation. It might help people understand what you are trying to achieve. As soon as you say fair, people think 50/50 all the time don't they. On this project for example we had to shave about 15 million pounds off this job. Before you give the contractor ½ of that we would have to save 30 million to get 15 million savings and that wouldn't have been fair to us. All they have done is provided the staff that we are paying for. You might say it is fair enough that you get a job to build if you bring the costs down, because we are paying for you anyway. The definition of fair is key really. We have a pain gain mechanism on this project which comes in at different percentages. It wasn't a very good clause it was poorly written which takes me back to the 50/50. Do you give 50/50 savings, the way it was defined in the contract? The difference between the target cost at the outset and the one that was agreed would be shared 50/50. Which sounds very fair doesn't it? But when you say I am deleting something, or it was my idea to save money, they haven't done anything to contribute to it. Sometimes you say, you have the opportunity to build something if we can get the price right. We had to come up with a compromise because they could see that it was a poorly written clause. It about having

the right balance. We have a target cost on this job and they get paid what they spend and whatever the gap is between the target and what they spend is what we apply the pain gain mechanism to. If they are more than 10% adrift of the target then that money stays with the client because obviously the target was a bit high at the outset. Between 10% and the actual target cost I think we split it 50/50. Then over, if it is up to 10% over we split it 50/50. If it goes over more than 110% the contractor has to pick it all up so that is the mechanism. The pain share gain share mechanism provides sufficient incentivisation, is a better wording than being fair.

It is difficult to make interim gain share payments now because you can't make a final decision on what they have got until you have got the final figures. You are making interim awards if you like. Nightmare to administer phased works, unless you had partial completion it would be quite difficult to administer. I think you make interim valuations which raises the bar for them or gives them a higher bar. Say they come up with an idea that saves money you reduce the scope using that system but it is a continuous thing under review, it is a difficult thing making an interim payment to them, it would be very tricky. Open book accounting works, I think there are pros and cons. I think you need a contractor who is willing to show you the costs. If the contractor has got his own plant it is very difficult sometimes to get their actual costs off them. They have bought something for £100,000 and all of a sudden they are saying, well this is costing me this much to run and service this and costs and they have borrowed money to pay for it and it's an absolute nightmare. So on some of the plant items we tend to use market rates. It's not easy to get. The contractors here tend to use hired plant, so it is straight forward. But you could have a different contractor who buys it all and to get the transparency needed from their head office in terms of what has it cost to buy is difficult. In terms of staff that are working that works reasonably well because you can narrow down staff costs reasonably well and you can get backing data for that. On plant I would favour using fixed rates for plants or use seeker rates less a discount which is what we tend to do on this job. We would be arguing forever on rates otherwise. Trouble is when you can get plant and market rates that are cheaper than quoted then you say, why don't you use that bit of plant?

### **Respecting the input of other team members**

Very similar to the mutual trust one again really again if you look into trying to narrow it down.

### **Early involvement of key members**

I think that links back to what you said earlier about being familiar with the term and having a degree of trust already on board. What we do as a client is ask for the main contractor to advise us what the supply chain is. We are looking to see that they have worked together in the past. That they collaborate themselves even before they start collaborating on the job. That they have mutual trust and an ability to work together. What we also did on this project was to have 'meet the buyer' events. We are trying to get more and more small and medium enterprises to develop and create jobs in the area so we have 'meet the buyer' events where they come along to say what they can do for the project. We did a 'meet the buyer' and about 100 different companies came along ranging from security to people to run a kitchen. It's important so you are collaborating with the community as well, not just collaborating with your familiar supply chain. So I think if you can get something about collaborating with the community in I think it could be quite valuable.

### **Win/ win**

Yes, this is the one that I said I think is more of a statement as opposed to an action so maybe you should rephrase it. Understanding each other's position is important and that everybody understands what everyone else is trying to achieve. You work towards and respect the contractor's profit. Maybe rephrasing it would just make it clearer. How they achieve it as opposed to the bottom line of getting that win / win.

(Author – Is RIBA a suitable framework?)

I think so. I think it is understanding where procurement comes into it or where the appointment of the contractor comes into it though.

**(Author – Is the model readable enough?)**

Yeah, I think the size of print for an A4 needs to be looked at. Some of these words above each other make it more readable, because you have that large enough but that is too small.

I think the more you can shrink it down the more usable it is. I can understand why it is in there just amalgamate a couple of these. You have client and clients engineer, isn't that the same thing. Well if you are saying that is the lead person within the client then you are saying that is the lead person within the client.

Is client a person or is client's engineer the person because you have the client's representative on site and just stick with that really. The more you can get it down the more friendly it is to use.

**(Author - What is your background?)**

I have worked on collaborative projects for 12 years. I have worked on frameworks, all large scale highway projects all around the 15,000 upwards. Using NEC 3 option C as a procurement but I have also worked on large scale project that used ICE 5<sup>th</sup> which resulted in adjudication.

## **Interview - 1302**

### **Open dialogue**

I agree that it is very important. I was looking through the list of people. I think everyone is there but I am not certain what a collaboration facilitator is. Definitions for some of these would be useful. Yes there are a couple there like advisor which could use a definition.

### **(Author – Is RIBA understandable and are the tools suitable?)**

Yes, I think RIBA is understandable I know that it is more building but I am aware of it. So I don't see a problem with it. The tools, workshops and social events. Social events are very important, yes.

### **Common aim**

I think we came in early onto this project and started talking which worked well. We had a workshop where we discussed the project and the client's requirements. (Author – When was that?) Oh, early in design. Yes, early design. I agree with the KPI's we use surveys here to test that we are meeting the KPI's. Yes this is all fine.

### **Early warning systems**

Yes, early warnings are dealt with here through the contract. We are using NEC 3 option c and early warnings are a big part of the contract. We have regular meetings and any issues get flagged up at those meetings which gives us more time to try to come up with solutions for them. This is the aspects I found, slightly confusing. I expected it to be about the contract and not incentives. How would the incentives work?

### **All team members contribute**

I agree with that statement. I agree with that a lot. Here we had a workshop where everyone got to know one another and find out what role they were to carry out within the project, really. The workshop was useful for that. Then as I said we use surveys. These would identify if there were team members who were not contributing to the

project. I think it is important to monitor that, make use of the information not just put it in a drawer. We deal with problems early before they become issues.

### **Mutual trust**

Mutual trust is a must on this sort of project. If they didn't trust us then we would not have been able to achieve all that we have.

Yes, you have involved everyone as you would expect. We all have to work together. Workshops and social events. Yes, they both help a lot and just talking and keeping everyone else informed.

### **(Author - What do you feel about open book accounting?)**

Yes, here we have open book accounting. The client sees the books as we do. It is important that we don't hide things from the client or them from us.

### **Problem solving environment**

Yes, good. We have an incentivisation scheme here. If someone gets a good idea they put the idea with their name on the board. That is good because people don't have to wait for the next meeting and they don't have to talk about it in a large meeting. If we have the idea / solution then we get credited with that and so we are incentivised. It works well here. I think that is good, no problems at all.

### **Team members understand**

Yes, we went through our roles and responsibilities at a workshop early on. It was a good chance to meet the other members of the team and get to know one another. The only thing I would say is that people do change on the project over time. It says here that they are told at concept design. Often the people involved will change and so it is letting them know what they are supposed to be doing as well.

### **Team spirit**

You can't usually choose your own team. Well you can choose to a certain degree but you usually get whatever is available. I had a luxury because I ended up having to interview people in the Contractors Company for the jobs here, so in a way I could choose who I



wanted and who I thought would best fit in. You don't often get that luxury. Although it is not a luxury for the people being interviewed because some of them may have not ended up with a job at the end of the day. You often end up with the people you have already got or are available and then moulding them into the team or not as you pointed out before. 'Lead by example' yes without a doubt. 'The team leaders ... social events' most definitely. 'Team building training', we didn't do a lot of that here actually but it depends what works in different teams. Social events certainly worked here. I suppose a number of us had been on these workshops in the past and I think probably understood all the tricks that were required with the different scenarios and games. So a lot of it came out of the social events. Also the task of coming up with finding 15 million pounds of savings actually focusses us as teams. We had little working groups focussing in on how we can achieve this. You then get to work with the individuals and get to know the individuals so that certainly builds up that team spirit. The hard thing is keeping it going, it is making sure we do keep on sharing experiences and celebrate our successes. So there is nothing in here that is an issue. Meetings, social events, we have once a month, we have a project brief, so I will give a briefing to the team on how we are performing how we are performing against KPI's etc. and then we will tend to have (not every month) but we will tend to have a buffet lunch. Everyone can switch the computers off for ½ hour and go in and have a bit of a chat maybe go through the partnering performance for that quarter and have a buffet after just to switch off for half an hour or so and that certainly helps.

### **Contract**

The NEC 3 suite of contracts is definitely the way to go because it is non-adversarial. It gets you to focus on what you really trying to deliver as a single team. So the selection of contract is most definitely important. A utilities company I know has it wrong, they had a good contract and they changed it so much it bore no resemblance and it was just the contractor will do this that contractor will do that. I have dealt with ICE and ICAME but most of the stuff has been NEC since say 1997. Most of them have been NEC3 and I have found that most civil engineering projects are on the NEC3. The NEC3 is not bedtime reading but it is easy to understand. Some bits are open to interpretation, but there are lots of people that have done the interpretation and have supplied the feedback on how to, administer certain things. JCT is more on the building side and I must admit I have not been involved in building projects as such. Yeah, you are right the contract does

determine how you perform, but you tend to find that with the NEC, it works the way that people would like to work anyway so you don't have to keep referring to the contract all the time because, it is common sense. Whereas the old contracts are more about what can I do them for now? You know it's that sort of thing and it's very black and white.

### **More effective information sharing**

We have used BIM to a limited extent. There were a couple of bridges that we constructed where the designers, designed it using 3D technology. Really to look at any clashes and any issues with reinforcement but it hasn't gone that next stage. Ideally it's going to be used for asset management really isn't and that's where I think clients need to come more on board. I would say at the moment the designers did their little bits but the rest of the job hasn't used it. But the way it's going now all new jobs will have to follow that BIM model and the sooner it does that better really because it's also the maintenance management documentation for handover. They will produce a model that people will drill into that as much or as little as possible to find out how to maintain various aspects rather than producing umpteen lever arch files that get lost. We use a collaborative Tool it is an intranet tool called 'icosnet' but it is more a filing system to be honest. The client has access to it, our supply chain have access to it and certain 3<sup>rd</sup> parties do as well. It is very important to have that collaborative tool, although I think there has been limited success in that the client finds it difficult because of various firewalls and so on. It becomes a slow process. I know as a company we are looking at other different systems going off the cloud or whatever it is. It's beyond me. We are trying to improve that information sharing but, you have got to have the right tool. We also have a project website as well which we share with the rest of the world, and it gets a lot of hits as well. So people get to know about what the project is all about and feedback as well via twitter and all these other things which is beyond me. I am a bit of a Luddite. The 'sharing open plan' without a doubt helps because you are doing it day in day out without really knowing it really. You are having those old chats and so on. So sometimes you don't need the meetings because you are doing it. Sometimes you have to sit side by side and go through the formal process though. Open book accounting, again we do budgets on a monthly basis. The client does budgets on a monthly basis and we feed into those budgets. Then as a team we go through the budgets so we understand what the client's driver is, what their constraints are and what the issues are. We have a project risk

register so we will have our own internal commercial risk register but we will also have the project one that we feed into that. So again the client understands what we are trying to get out of the job. We understand what they want out of the job and we review that on a monthly basis, so it avoids any last minute surprises coming up. You know 'where did that extra money come from'. It's administered on a monthly basis and they get the information raw as well, so when the costs come out the client gets our costs, so they are as aware of what the costs are that month as we are. So again it is making sure that you are not holding stuff back. If you are start doing that then it certainly breaks down cooperation/collaboration. So whether it is good or bad news it is shared. We can say this is the issue this month, right let's sit down and work out how we are going to manage it. Again it is sort of engineering again. It's always looking for problems to solve. We generate our own problems.

### **Risks are fairly allocated**

It all comes out of the initial risk register and the risk workshop. I would say that the one we had was too early. It took a few months to level out before you had actually had a true working risk register. But then that was managed throughout the job, but it was such a long risk register, it was huge. The trouble is you can get lost, you can't see the woods for the trees sometimes can you. So once you have prioritised them then we said, let's look at the top twenty (ignore the others). Look at the top 20 manage those and then the other ones find their own level, don't they. So you most definitely have to have a live risk register and then that is monitored on a regular basis. As I said we did it on a fortnightly basis and we did that pretty much all the way through the job. Yeah I have no issues with that.

### **Regular meetings**

We certainly will continue to have meetings after construction has finished just a lot more low key. We have various tiers of meetings. The way it started at the beginning was that on a fortnightly basis we would have a progress meeting and we would do like a mop up of the whole thing. That would go on for about 3 hours but we have managed to tame it down to 1 hour/ 1½ hours purely by having stand up meetings. People put the information up on the notice board before the meeting and they talk through what is on the notice board and what the key issues are. Everything just goes onto a white board,

then photograph the white board and the minutes are done. But above that we would have a core team meeting and above that we would have a leadership meeting. But we found that because we were having joint meetings anyway the core team meetings became irrelevant so we ditched it. I would say that in the first 12 months we got rid of quite a few meetings where we were just duplicating ourselves. I think you only find that out once you have got a team running because each job is probably different but we do invite the client to all those meetings with the subcontractors to our internal meetings. We have our safety meetings every night and the client or a representative of the clients team attend that so that they can feed into it as well and every one feels part of the team then and they are having an input into what we are doing on a daily basis. "Team maintaining workshop led by .. held every 6 months" yeah, I suppose it would vary on how the team are performing as a team wouldn't it. If the team were beginning to break apart, it's identifying that and then you may have to get an external advisor in to manage that. Otherwise what we tend to do is have these partnering performance questionnaires. That is on a quarterly basis so if we find that the scores are going down then we know as a team that we have got to repair that part of the relationship and that's what tends to work for us. Same sort of things really, same sort of time periods every 3 months we have our partnering performance reviews, any more frequent than that and it becomes irrelevant . It needs a little bit of time first to get the results, assess results, make the improvements and then reassess it and so if you have it too soon then people will go against it anyway naturally. So no I think that's fine.

### **Non adversarial environment**

Very similar to what you had with the contract really isn't it in. Yeah again no real issues with that you have got the 4-6 months. It is just how you do that whether it is via the workshops or whether you do that via the questionnaire and then you have the workshops afterwards to deal with any resultant issues coming out of it. That's fine. I don't think there is anything to add to that.

### **Relationships are managed**

Very similar again, it's the partnering performance workshops and questionnaire. So we can see how people are performing we also have a client satisfaction questionnaire which is more of an internal procedure. But we do find that they are almost running parallel, it

is a different scoring level but the results that we have got almost mirror what we get from the partnering performance as well. It is asking a very similar sort of question how are we performing, safety and quality programme etc. I think it covers about 10 different aspects and the partnering covers about 7. That is the only way they are managed I suppose. What we tended to do with the clients satisfaction questionnaire was that it was sent to the client for the client to fill it out and send it back and we got a raw score and it went off to head office and it was dealt with there and it was pretty much ignored. What we tend to do here is that I will sit down with the client and go through each of the items. I don't know, maybe on something he would give us an 8 and I say to him okay so you have given us an 8 what do we need in order to get a 9 or a 10. So we would develop an action plan every quarter, in order to try and improve our performance. That works well rather than just sending something out and filling it out. It's of no benefit really so we use it to improve from that so we have an action plan on the bottom and we know what we need to look at before the next meeting to redress it.

### **Pain share / gain share**

It's in the contract isn't it. We have taken pain gain down to some of our subcontractors only if they have got the resources in order to manage that type of contract because you do need quite a bit of a set up in order to manage the target costs project. So with the normal contractors, the smaller contractors, we would be on an option B so it would be a bill of quantities and a price on a remeasure and they like it. That is the way that they do all of their contracts and that is how they are used to pricing things and managing things. With the likes of our earthworks contractor and our designer we tied them down to a target cost contract and they see the benefits, if they are on gain share (which they both are). They get the benefits out of it but also we share those benefits. So if they come up with a good idea on the earthworks which means they perhaps do not have to import so much material they can get it elsewhere on site etc. everyone shares in that. Whereas under the old mechanism if they come up with the idea, they would have had the benefit and no one else. They are quite mature members of our supply chain. They have worked with us for a number of years and want to carry on working with us and they want to feed into and provide those good ideas. The like of the Earthworks Contractor and the designer were involved with us at tender stage, so we brought them along with us because they expended money during the tender and during the ICI stage and they fed

into the development of the scheme to develop savings there. You need to see how far down the line you need to go really, in order to get the best out of the various members of the supply chain. We needed to get them involved early on because if we left it too late we would have lost a lot of the opportunities that we were looking at. If you can see there is a target of a gain share to achieve then people will focus on trying to achieve that.

### **Everyone respects the input**

Yeah, that can be difficult sometimes because you are dealing with individuals. If you have forceful individuals that try to shout above everyone else then some people get lost in the crowd or they feel maybe reserved or they don't want to come up with their ideas in these bigger groups. It's making sure that you are aware of those individuals and they don't get lost, otherwise they just get disgruntled and they don't get involved. Sometimes when the partnering questionnaires comes out people who don't have their shout in the meetings have their shout there. But it's making sure that maybe not just me and the client's engineer but the other line managers feed down as well. That they are looking after their teams and they have their little meetings. So that the more you can drill down so that you have I don't know 4 or 5 people with a group the better. People feel a bit more comfortable in raising their opinions in small groups and then it's making sure that they get raised back up the system. We find that tends to work you. With the partnering questionnaire, what I tend to do is roll that out to my direct line managers for them to then sit down with their individual teams to say right what do you think of that score what is your views and then we get them back together again to go through the output from those individuals meetings. That works a lot better rather than getting everyone into a room, because I have done that in the past. One or two say something but most are a complete blank. But if you break it down and send them out into little groups then it's a lot more beneficial and they will come back with a lot more practical solutions.

### **Early involvement**

It depends on the job doesn't it, but most times you need to get the supply chain involved as soon as possible because they will drive a lot of your savings with specialist contractors. (Author – are we talking early design) Again it would vary with the job but yeah here we needed to get them involved as soon as possible, in fact you could say we should have involved them even earlier than we have. A process type job then yes most

definitely, you need to be involved from the very start. A bog standard road job then maybe not. No need because whatever savings they generate probably won't bring back the cost in generating those savings. But 9 times out of 10 I would say on a job such as this or a fairly complex job then yeah you need to get the supply chain involved as soon as possible. (Author – how far into the supply chain) Again generally just the main suppliers, you may end up having something specialist that you need to drill in and get a one man band out there. That have got all the good ideas. That's often the case you know. There is this mad scientist out there that has got this brilliant idea and you have to grab him but 9 times out of 10 it is getting the main subcontractors on board. The one where the big ticket items are you know, like the earthworks and the design. With a big bridge job you may consider getting the steel manufacturer involved as soon as. It is the big ticket items really that would get involved as soon as possible. The feedback meetings are very important. The feedback meetings and lessons learnt so they do get fed back. We have tended to do so at key milestones, so we open a section of road and we look at what we have learnt there what can we improve for the next opening etc. So you are not actually storing up necessarily for the end of the job. Because you find come the end of the job most people have gone so you haven't got anybody left and you are onto the next job. So it's making sure you do your feedback meetings before the end of the job. So we will have an end of project meeting when about 70% of the job is complete before you start losing all the staff and talking to the walls.

### **Win / win outcome**

Hopefully. Yeah, no issues with that at all. Again you feedback at the end on how the incentives etc. have worked. Sometimes you may think something is an incentive but you can create negative drivers in a way. You can put the focus on the money rather than on what you are getting out of the team. They are doing it for the wrong reason. Okay, definitely.

### **General comment on model**

Some tool you have got here, but again it is fairly straight forward it is common sense and it can be flexible to adapt with the team you are working in. As I was going through it I was writing for this now we do this, for that we do that, it all makes sense. Workshops

can take different guises and we do it in a slightly different way from what is written there but I have no problem with that what so ever. It's good.

## **Interview - 1303**

Can I show you something first on this? We have developed what we call the how 2 guide. I'd like to show you only because there are similarities. I don't think it goes against the grain or anything. That's our website. This is born from a series of workshops about 2 years ago now, which was undertaken I suppose in a similar manner to the interviews you are undertaking, on a workshop basis. The principal being, how do we get value from construction using collaborative techniques? So it was literally people in the industry just dumping down everything they had in terms of how they think things should happen. What you should consider and so on. Then we set it up on a web based thing. Using, I suppose shorter project stages, but again they meet these (RIBA). Concept, planning, design etc. and the idea being then that if you go into a particular stage / so concept stage you are focussing on client customer leadership seen as being an important side of it. Learning from others establishing business cases and securing funding. So there are similarities in terms of some of the things. The idea being, where do we start? If you are a practitioner that has been there for years you might pick up bits from this but if you are starting from scratch completely hopefully you will set a lot more from this. Then you go a little bit deeper into it and these refer to our demonstration projects and exemplar projects. There is a link through to another website; which is our website in this case or could link through to something along the line we can make a link into this. These are not competing things or anything and in fact they are really complementary. So anyway I just wanted to share this with you that it does exist.

My first impression was – maybe because of the how 2 stuff – great nice and simple, very clean, it's got people time and the doing bit. So great from that point of view. I don't know what the front end would be in terms of how you would get from the front end into each of these. Presumably this is something you would consider developing on the website, because I don't think for a second it is right what we are doing there (on their website). To be honest with you, I thought it was nice and simple that was the first thing for me, you know. Using the RIBA phases – I think it's great because it is the current phases. So it's current it ties into so many other things such as BIM and the cycles or stages that that



they use. Engineers tend to think RIBA has nothing to do with me. Surely we can all understand the phases whether you are a civil engineer or an architect or whatever you know. There is a good structure to it in that case. The personnel you can go on forever really you know. You have to focus, we have tended to focussed in on client, consultant, contractor, supply chain and end users. I don't think there is much beyond that. In terms of the way you present it on the web front I suppose you can use icons to reflect some of these, what they are but that is fine. I wouldn't go too far. You hope that most people will see, so I am the site person so that's my bit there in terms of what needs to be carried out. This is the bit I was not 100% sure of. The first bit is highlighting I guess abcd all these people who should be aware of this bit. At the concept design stage and so. I don't know if there is a neater way to do it. You know something a bit more eye catching but I accept that this is the way it is presented at the moment. Then there are some fairly brief comments then about what people need to do at each stage. I wasn't sure if there were any links beyond this. If there is going to be any links to a workshop our communication plan templates, something like that.

I do see a few similarities here, which is good, I think as it shows a number of people are along the same lines. J) should lead the workshop, collaboration facilitator, you know it is not a commonly understood term for me. So I don't know if there is somewhere in there you can clarify what these people are there for. Whether or not you would rationalize that list don't know. Overall the way it is set out I like it I think it's really nice and simple and certainly something I could use with just a little more description of what that is, what that stage means and then the links then added to it.

### **Open dialogue**

Okay so this is focussing very much on open dialogue. It's the social events it's the communication channels and workshops because what they are doing is picking it up at different stages in other words you have to keep doing it. I guess its social events at that stage, social events, social events and social events. You'll be drunk at the end of this project. It's those 2 things it's the social aspect to but there are also the workshops in terms of the more detailed stuff so I suppose they go hand in hand at these key stages. I have no particular problem with that it's suppose (I know you didn't send it to me) but it would be interesting to see what that information is behind and how that links. Because

when you do these workshops on refreshing the communications plans. It is how technical you go into in the guidance but how you could do it may be interesting. I suppose some examples. You could probably do without complicating this flowchart too much because this is quite clear but then have links to the how. Which is probably the bit that this bit gets to (how 2 website) which is why I was keen to show you some links between them. So there is no issue for me I think this reads well, reads simple and yeah I think all the key stages are there its fine.

Personally I would underplay the social bit, only because I feel it detracts from the professionalism of the whole thing. I think that they are essential but they need to be referred to rather than be a key bit of it. I think workshops are the place where you develop your stakeholder engagement plan, your communication plan and the management grid with the stakeholders, risks and all the rest of it. You could put that at every single stage but certainly you have the key ones in here. Do you know the bit I am confused about is the abcde. It just feels a little bit cumbersome. I know it is trying to pinpoint who they are in this but very often it is almost all of them. It probably is for this one because you don't want to be excluding anyone you know. So its highlighting the issue what it is they need to consider and it will somewhere presumably refer to how you could do it. I would simplify it slightly and once those links are in there as well it gives you a clear guide right through.

### **Common aim**

Clearly it has got to start with the client. What you are trying to show is how that common aim how is introduced into the project and how it's carried through and how you don't lose it when somebody new ducks in or ducks out of the project. Is there any reason why concept design stage doesn't cover any of this or doesn't include anything on it? It is just about maintaining the continuity as much as anything. what we are saying is obviously the client needs to identify what the aims and objectives are but I suspect that in most projects they change they tweak or they move a little bit as you move as you go through it. I suppose the danger is that you lose the original feel for things. The second bit there that the initial project brief should contain a rank ordered output specification. What do you mean by a prioritised list? Would you have an example of what an output specification is? It is just that it means different things to different clients. Whether it is

a local authority client or a health board client or whatever. The second part, input required especially for less experienced clients from the clients engineer and the collaboration advisor. Will you have a definition of these people? So collaboration advisor would be what? This approach could be applied to both large and small projects in any sector. That's the idea isn't it? It's whether some of these roles roll into one depending on the size of the project doesn't it. Your client sometimes is your engineer as well and you don't have a client's representative but I guess that will be picked up in your definition of what these are. I think that needs to be made clear though. Which is why I think that some of the roles may confuse. If you need the collaboration advisor or not etc. Whether or not that can be brought down in the text there. So for instance input is required for less experienced clients, input from a collaboration advisor may be needed by an inexperienced client or something like that. I just found it was the only criticism that was this constant going back and forth abcd. Some roles are quite well defined but others are a bit grey and if they are not heavily referred to here, maybe they could just not be there. Just be referred to in the right hand side.

So in terms of the output spec and support from somebody who knows what collaboration and KPI's and incentives. That is the right place but maybe just drawn out a little bit more you know in the concept design. Take this as an example. Developed design stage – client and contractor works together to develop output spec that is on the basis that the client has appointed a contractor which you would hope. But you can still collaborate from that point on. Is there anything anywhere that draws the client towards a preferred procurement strategy? Because of the stages here and the references to certain personnel at certain stages, they kind of assume you are following a certain procurement strategy. It's assuming that by then you have appointed a contractor. Whereas some people would not even think about it until quite late on in the process. I know that that is not collaborative but I just wonder if somewhere in your report you pick out what is good collaborative model in terms of procurement. So that when they read this they know that you are thinking. I would have a team appointed right from the start because a lot of these things don't quite work do they otherwise. So whether that can be brought out somewhere.

I suppose this is the other bit then in terms of agreeing a target cost before construction begins that again is assuming that you are using a particular contract strategy you are

using NEC or something like that. I know that some will still adopt the collaborative approach using JCT for instance though it may not quite fit the mould. If you have already specified it up front that this is what I think is the right procurement strategy and this is what I think is the right contract strategy it kind of flows into this. That's obviously the right time to agree the target cost, before construction begins. Then this comes up again and again you constantly reinforcing the aims and objectives from the start and you are managing change as you go from stage to stage you are making sure that though personnel may change the message stays the same throughout. I suppose managing those interfaces, yeah. I suppose you are talking about post project appraisal really and going back to doing that to pick up the lessons learnt. I wouldn't disagree with any of the stages. As I say I think you need something in the concept design stage. I think that it needs to be clear to the reader what kind of procurement strategy and contract strategy you are talking about within certain bounds.

### **Early warning systems**

You are basing this on an incentivisation scheme. What did you have in mind, I mean did you have a particular model of incentivisation. Nobody wants to be pinned. It is trying to provide guidance that is very, very detailed as opposed to telling people what is out there and allowing their professionalism to work out what is the right solution. You always want something that is in between which is a little bit of a guide not an instruction. It is going to be horses for courses. If it is a resurfacing scheme that goes on for 4km realistically it is going to be heavily priced based and shouldn't be that many risks involved. So incentivisation for highlighting problems is probably going to be less useful than if it's a fairly complex building project with lots of risks. So it's back to your procurement strategy to a certain extent. But that is the right time to do it. Whatever that scheme may be. I suppose what we would allude to on the how 2 guide is some incentive schemes, so some examples and some sort of links to it. So yeah that is fine. The concept design - incentives scheme finalised. I guess depends on what stage you have appointed your supply chain but that needs to happen before that supply chain is in place I guess. Then the continuous meetings on that. Meeting regularly, workshop. In terms of the communication plan being designed. I suppose I would have expected to have been back there (earlier) because with a lot of these, if you are going to collaborate, it's heavy up front on effort. Then you keep revisiting whether it is communication plan

procurement strategy or whatever, so meeting regularly has to be constant feature throughout. Is there any reason why it is there? I just think as this particular bit is about early warning systems, you would hope that by the time you got to that point they are in place.

### **All team members contribute**

Yes, I agree with all this. I would include strategic definition though. Also soft landings is very important at the moment and the team should be present for that handover. The government is pushing soft landings especially for buildings. Other than that it's fine.

### **Mutual trust**

I think I would take out those general themes to be honest but put them somewhere else. It's a given in here, workshop/concept design/ looking at all these here they feel in the right place. I think that should continue right through to the in use stage. If you have built up a strong enough team and you have got this environment of mutual trust, when it gets to the in use stage where most people have left by then you have just got the end user. That end user should always feel that they have got that mutual trust and should always feel they can go back to the supply chain or the main contractor or designer to be after care services. If you created the right environment all these guys involved up front should still feel ownership for this at the end. Whereas if you created a poor environment no incentives or disincentives most of these guys can't wait to get out of this job at the end. They don't want to come back to help this guy. So perhaps there should be something in there just to show that it sees it way through to beyond the project end. I think they are all in the right place just pull out the common ones really.

### **Problem solving environment**

Is this a statement rather than a request or a desire? I can understand why there is nothing in strategic definition because it tends to be just the client at that stage on the whole. Again there is going to be a little bit of an overlap here with some of the others

because you know it needs people on the team that will see positive solutions so fine. But if you incentivise them in the wrong way then they won't. Because it means they are cutting their own throat. You are focussing there purely on the client in the first stage in the preparation and brief. What did you have in mind with the incentive scheme?

So for a designer protecting their fee maybe, regardless of the scheme costs coming down. Is that theory behind that somewhere in the main text or being referred to something somewhere else? I would agree with that it's in the right place. Again the same comment about the workshops held throughout that, personally I would take it out and put them as a general comment that the expectation is that you keep this environment alive by doing workshops throughout. The number of workshops will vary with the size of the scheme and you can really wind people up if you have too many workshops. I think you need a workshop at stage one. It would obviously be a workshop to cover a whole host of these issues. These issues that you raise here (in the model). Hence why is there repetition across the different themes, you know? You need one, dependent on the size of the scheme, at every single stage. But within a stage I don't know. You generally have a workshop at the beginning. We used to hold one which was called the last planner session which was approaching construction. You might do one towards the end where you are approaching handover. So for me it is right at the beginning and right at the end of the stage. In the middle I don't think you need workshops. Because if you have got these two bits right or certainly the first one right then you don't need it in the middle because you are firefighting by then, with the proviso that it is horses for courses. If it is a small scheme you are not going to do it. Yeah everything feels in place so just take out some of the common themes there.

### **Everyone understands the other team member's role and responsibilities**

Is there some overlap with some of the statements? Some are similar, but you have been through this and you feel that yes, these are the statements that need to stand alone. First the strategic definition stage, where you are talking about the client and if it exists the collaboration advisor starting to define the roles of their roles as they choose a procurement route and contract strategy. So that is particularly focussed on just these two roles. They are not talking there about how they would build the larger team. Because going back to the bit about Belbin, that's the process, you go through about

thinking at that stage. You know you are thinking about how you are going to procure this, do we need the designer on early, do we need the contractor on early, what type of designer and so on. It has to happen at that stage and its zero and one isn't it. Which is what you have got. Okay, so you have split this by saying effectively at stage zero they are looking at their own roles and stage 1 they are looking at the roles and responsibilities of the others. Then the initial workshop in stage 2. Where you are clarifying the roles and responsibilities, the outcomes and the contract. Yes, that's good. Yes I think that makes sense. The one bit you have got there under the construction phase where it's really reminding revisiting the whole team role and responsibilities, I guess you would need to do that. Whenever you have a change in team don't you which could happen a three and four as well and definitely at six so may be some continuity that keeps reinforcing this. You would expect that if you are doing regular meetings, regular workshops. It's another bit on the agenda I guess isn't it. Just expand that a little bit.

### **Team spirits**

Again it does tie into the selection of your team, you get the right people there you have got about team building workshops. Is there anything in your initial text that talks about the scale of the projects that this is referring to or is this basically saying apply this to all projects.

There's a little bit about how you do it. Yeah, that's fine. There's a theme. There is a fair bit of reputation coming through. So perhaps some of those could come out and be lumped together. Saying – you need to do this all the time. But I wouldn't disagree with anything you have in there in terms of the stages that it comes in at or in terms of team building itself. For me it would just be that one session. Because if you have got your team spirit right and you have got the other incentives right then it kind of generates its own momentum. That's fine.

### **Contract supports collaboration**

I'd say it is under zero you are defining the project really. What project management methodology you are using? If you are preparing your project initiation documents you want to, even at that first stage, when have started to make your business case, you want something in there really about what form of contract what procurement strategy.

Otherwise you are not going to secure the funding and so on for the job. So perhaps a little bit about it is not left until later but then more detailed is going to come in under section one. Okay you refer there obviously to PPC2000, JCT, NEC. You said you have a bit sitting behind this which is the theory bit. I suppose it is getting the balance between what how much detail you put in this, as opposed to just sign posting that. I would be a little bit careful about, not user friendly, because those guys are incredibly sensitive about their particular forms of contract you know. I have used PPC2000 but only once and I found it okay. I found it fine, so maybe just be a little bit cautious there. I suppose it is whether or not it is just for your research purposes or whether it goes to a wider audience.

We have a section on here (website) on the planning stage which goes through the contracts. There is a section here that just takes you to an element of pros and cons of different forms of contract; you may find something along those lines.

That is the right stage to do that in terms of choosing your contract strategy. Was there anything here about procurement routes? I have a fixation about, if you get the procurement strategy right your collaboration will follow. I am just wondering whether elements of procurement can be drawn out in different bits. Even when you are just talking about establishing the right team and team spirit. Just a general comment there about how you want to deal with the detail on different forms of contract but in a small box like that you will probably never do it justice. You will have to have some further reference. I suppose I would add, under the handover and close out bit, that you build in somewhere along the way for an appraisal of contract, procurement strategy and the team everything really. You do it in one, but the way you have it set out you probably need it in everything just to make sure there is closure of this process as well and the lessons learnt. The comment here about it 'needs to be referred to throughout the project' is that the contract needs to be referred to or these people need to be referred to? (Author – The contract). Definitely and if you are experienced then you probably don't need to refer to it very often because you know the process if you are not then you do and that's fine. The worst thing you can have on a collaborative contract is, you establish the form of contract and all the processes at that stage and when it gets to here it is completely different people, different teams you have lost continuity and these guys don't know why you have chosen that form of contract. It is back to thing about communication making



sure everyone is engaged through it and you have the same team. Because if these guys don't agree with the choice of contract, don't like it haven't used it before, a) they probably shouldn't be in the contract and b) they will muck it up and then ignore it. So sometimes put in the drawer means you are going to do something totally different, it is not a good idea, so maybe that just needs to be, just written in a slightly different way so it is clear.

### **Effective information sharing**

I think certainly the preparation and brief should set out obviously what you are intending to do. You refer to workshops you have got the social events and you have got the shared computer network. Probably, I would turn them round the other way so effective information sharing is first. If you have got some form of intranet you are using, I phones or whatever you are using at the moment to transfer data then that's great. Yeah you have got BIM in here as well. I personally wouldn't put social events in there. You don't need them to communicate effective contractual information, you should be doing that day to day really. I know its all part of that relationship building but I think you would have that somewhere else you know. I wouldn't cloud it. I think workshops are fine for establishing the communication strategy and the plan but in terms of information sharing I would put it down below some of the other things.

### **(Author - What do you think of open book?)**

If you are going to be truly collaborative you should. But it doesn't always lend itself to certain forms of contract. Personally I would have open book accounting on certain forms of contract, schemes of a certain type and value because it avoids duplication. You get transparency if you have got that mutual trust in each other. I was always told I have got two sets of accounts one for the client and one for me. Okay, that probably does happen. Even under collaborative contracts, you can't really completely wind open you never will but you should be as much as possible. Compensation events under NEC, you should have transparency over that over the costs. You have got to have that otherwise you wouldn't

authorise the compensation event. I would just have it early because I think you have to establish the principal of open book accounting before this stage. You need to be establishing it here, as part of the procurement strategy, really.

### **Risks are fairly allocated**

This one for me is a really key one on collaborative contracts because unless you can share information on risks you will never transfer them properly. You will just put your head in the sand and wait for them to bite you. I agree with preparation and brief, that stage and with the workshop regular workshops. Somewhere in there you do say about passing on the risk to those best able to deal with it. It ties into the incentives and the motivations. If you are looking for cost certainty, somewhere in here I would expect to see something about, 'well if I am the contractor and I am expected to take all the ground risks then I want some stuff in here about who's going to pay me to do more site investigations, so I can better understand those risks and what happens to those risks'. So perhaps be just a little bit more precise, in terms of when you start assessing them what you do and then the regular reviews. I agree that you have got that. Just pick that up in the post project appraisal as well.

### **Regular meetings between various parties**

Again I think there is a fair bit here on this issue of interaction isn't there both socially and business wise. Somewhere along the way you have to be clear about regular meetings are great for. So building up a relationship etc. Actually it can be counterproductive as well, depending on what the relationship is. A lot of that should come through the social side. The regular meetings between the various parties needs to be clear and defined in the contract. You just need clarity on what those meetings are for. What the agenda is and to hold them as regular as you need to. Sharing information electronically yes, but you need the face to face stuff as well to really travel things forward. Whether you want to be specific here about needing to do a workshop within three weeks, I don't know. Contract procurement strategy that may start to happen there. I would look at that preparation and brief stage where you are setting down the ground rules. As the client I would be expecting regular meetings. I am expecting the agenda to go over these kind of things, you know. The rest is there as continuity. What is a team repairing workshop? Is that when a team has gone a little bit wrong.

## **Non adversarial**

I would say it is a priority. Again it is a statement. I suspect though with in terms of the 'how you do this' though you have already covered this in a lot of the other actions. You should try to select the team. You are looking at the interaction between team players aren't you if your contract strategy is or procurement strategy is for early contractor involvement. Design and Build, two stage maybe, where the design team is engaged by the contractor then you want to see in your selection process that a) they have met before b) you see a bit of a rapport in there. For me that is down to the selection process. I think when we talk about team spirit it's that selection process. So you can probably do with something in there along the lines of just basically have a dam good selection process. With, sound criteria based on what you want and not something off the shelf that somebody else did. If collaboration is what you want you need to be able to tease out from that team how they do it. So, yeah, we are going into specifics on specific sections here but there are cross themes here you know. They will keep cropping up. Again you are using the workshop. Personally I wouldn't have anything about adjudication and arbitration at this stage for me it would be something that you probably need somewhere in your literature as in a back stop if it all goes horribly wrong. It just doesn't feel as if it sits right in what is essentially a collaborative working flow chart. What I thought you would be saying here is it operates in an on-adversarial environment. How do we generate that non- adversarial environment? Which is similar I think to your bit about team spirit and collaborative environment. I think it is one and the same to be quite honest with you. So again it picks up the social events the team workshops. So picking out those generals and probably just linking between the two as well you know non – adversarial in other words collaborative, so it should be similar I think.

## **Relationships between the parties is managed**

I think it is quite similar to the non – Adversarial, collaborative team spirit. This is for me why motivations is a better word than incentives. I thinks it's proven that unless you are doing widgets you know then it is all about behaviours. Behavioural management rather than provision of incentives to be honest with you with people. Again I would take out adjudication and maybe just juggle around some of the others. I personally wouldn't be prescriptive on the workshops other than just to say you need the workshops. Then to

reference to good practice on to running a workshop. Shared office space, I wouldn't disagree with it. I would just extended it a little bit further to be honest with you, the same for a few of the others. You start the process early but you do need to make sure that the process continues into that handover stage. For me that is critical area where things go wrong.

### **Pain gain**

Again it depends upon your form of contract really. Ties into risk. There is literature out there that and studies that gives you an idea of what is fair. Pain / gain share for different types of project, for different types of risks there is obviously going to be some bespoke nature to it if there are some specific peculiarities on the job. If you've appointed your team very early on then you will need this at the same time as you are developing your initial risk assessment. Otherwise you have not linked risk to the financial incentive. You need to agree the target price before you, start on site. Personally I would just make that link to risk and the risk management process. Really absolutely clear right from the outset you know.

### **Everyone respects input**

Yes, so you are using workshops and social events. These can merged into one statement somewhere else, maybe. You are reinforcing the idea of roles as people may change. Yes I think that is fine. The only thing I would say is that I would like to see it carried through to handover. To see that team be there to the end.

### **Early involvement**

Is there any reason why there is nothing in strategic definition? I think I would expect to see the client in there starting to talk to the engineers and the end-users. This is nice and simple with the client in at the beginning it is fine.

### **Win / win**

Open book accounting again. Well I think it should be possible if you are truly collaborating. Incentives, yes. Do you have some examples you can link to on the

website? Again I would like to see this continue into the handover stage. Otherwise this is good.

**(Author - Is the model generally okay?)**

What's good for me is just picking up these statements they reflect a great deal of similarities with what we have through the interview sessions or workshops. I would say that is good. Whether or not you find any benefit from any of the links or any of the stuff that sits behind this you may do. Certainly for the contracts we got solicitors to put something together for us.

## Interview - 1304

### **(Author – What is your background?)**

My role is projects and procurements manager so I am in charge of setting up framework agreements locally and regionally and contractor and consultant agreements. All based on the NEC option A activity schedules obviously based on collaboration but the smaller contractors are not au fait with the NEC but they seem to be working okay. Some we let as a single stage tender, the simpler ones. The more complicated that we do, we base it on a two stage and we get the contractor on board early using option A. We don't use any incentivisation as such. We just work together. We engage the design team and we have got internal PM's that monitor and work with them so there is no incentivisation as such. Hence I was looking at collaboration advisor and collaboration facilitator. We don't do that. We just sit in a room and go, 'well we want to work together fellas and hopefully put the contract in the drawer as such'. We do have quite a lot of projects like that. We have just finished phase 1 of a 20 million pound contract, and to be fair that has gone very well. We used NEC with early warning notices. It worked so well we have dealt with compensation events which to be fair there were not many. They have got the design team which worked quite well. When I saw incentivisation I thought I bet a contractor has been involved in this. When I look at client, we have got an education client and they look at the concept stage, just talking to the school about class sizes, that's with the design team and obviously then they work with us through the process and we report to the cost programme etc. Then they get more involved in the handover process. We have got an internal client but also we call ourselves clients PM's but from a technical perspective. The boys in the office do it from the more technical side, mostly QS's. So I looked at client there and the client engineer as part of our design team or whatever or so, and then facilitator and advisor. We don't tend to use that to be honest. We probably haven't got the money to do it to be honest with you. Somebody would say that will cost you a few bob. I think there are enough people who work in here with enough experience in the collaborative process. Touch wood it's worked so far. There have been no major hiccups. Subcontractor and supply chain is a bit confusing, I thought of them as one.

**(Author - Do you think RIBA works okay as the framework?)**

RIBA is fine, that is how we work. Not on the new one. I am stuck on the old one. I don't know why they changed it but there we are. So that is fine. The base of it seemed very good that was fine I think. Virtually all of these would be involved in a collaborative process whether it is mutual trust etc. It is worth you carrying on with this model.

**Open dialogue**

I sort of went back a bit. A lot of these fellas start off concept design if you like. I went back a bit to look at strategic definition and preparation and brief I included A) as the client and E) as the end user. We possibly wouldn't have a contractor on board at that stage. We may have an in house technical advisor. The rest seems fine because everyone is just getting involved in the process at whatever stage. Some dip in and out. Sometimes you have the end user all the time (and sometimes I try and keep them away), but no that's fine. I did chuckle at the social events. Actually as you came in I was engaged with the consultant design team plus the contractor although it was separate design team and contractor it was worked as a collaborative approach. Although the contract didn't say that, we had sat down and said look it's a two or 3 phase development in a busy building. As soon as you start to hammer it reverberates around, so I said 'let's work together'. I was involved in procurement and looking after the consultants, well we had a PM. So think at the end of the project the contractor took everyone out. We do go out occasionally. Apart from that, that seemed fine all of that. I sort of looked at the handover and close out again there has got to be collaboration between I would suggest with the client, contractor and I would say subcontractor, agent, site manager and the end user. Just to say let's put a pre programme in place 2 months prior to the project finishing so we can have a handover. Especially with phased projects where they have to get from the old building and into the new, which is quite a complex programme in which the client and end users are heavily involved. Again that open dialogue needs to be taken through. We use workshops obviously when the contractor comes on board. He likes risk workshops. To be fair, we all seem to work in this together and that is emphasised by both parties to be fair. There are workshops along the line especially with the end user, especially early doors. As I said we come in at stage A or B where you are working to get the footprint agreed. There are a lot of workshops going on there.

## **Common aim**

Again I went back a bit rather than forwards in the common aim. Initially I would suggest is between the client and the end user. Again depending on the form of contract we are using. Where we get the contractor in at that stage. There would be a lot of shared contribution. I would put in d) as the contractor in there and possibly your main sub-contractors perhaps. Then at the concept design where you have a contractor and design team on board I put in a)d) contractor and then probably g) for your main subcontractors. Again you are all working together. We have workshops, there are regular meetings to progress the scheme to that stage so it is costed and problems dealt with. Development design I have just put in the way we work to be honest with you. I have put in g) main sub-contractors would be involved but maybe not so heavily. They could be in there in the working together. Similarly with the technical design you have got the contractor in there and the main sub-contractors. Then on the construction it is all common. I have put in the client and g) and h) because he is on site and sometimes the site manager. He forms part of the client team meetings as well because he has the day to day knowledge on stuff like that. Similarly with the handover we have got g) and h) as the site manager and the end user. It is similar theme throughout really for everyone you can see a constant cycle, okay. People procure in different ways don't they.

## **Early warning systems**

Again that probably relates back to NEC a little bit. They are an integral part. To be fair the schemes we have worked on the contractors have been great. We work so closely with them in the concept stage and the development design stage. We work so closely with the design team, all be it sometimes, it is with the contractor and sometimes it is with us. There really is integration between all parties so any problems are flagged up at an early stage between all parties. So that does work and then on site, because you have built up the relationship at the preconstruction stage, which could be a 9, 10 month period, you get to know the personalities. Even on site then, it is flagged up pretty early. It is all transparent to be fair its worked quite well. So again I suppose that the preparation stage will be the client, the client being the technical and non-technical people and the end user. Moving down into design you have the client, contractor, sub-contractors and then you have got, meets regularly. Again that is fine. We probably have



meetings over kill but I think it's worth it. We have that constant dialogue and obviously everything is minuted and agreed so that is fine. Similarly with the rest of them I would suggest that is fine. I did circle the technical design stage because you probably don't need the end user. We use the end user at early doors with what do you want. Can we do it? Obviously when the footprint is agreed there is probably no need for the end user. Although we keep them informed anyway to be honest, especially post contract. When we are on site what we tend to do is not to involve them in any site progress meetings. We will however have a meeting separate from that just with the education PM our client PM and the end user. Rather than sitting there and it is all technical and they are bored. So we will tend to do that. We have project board meetings so everything is over kill. The rest is fine to be honest with you. Into handover I have put in the client, the contractor and obviously the end user, schedule pre-hand over meetings. You can have a schedule of meetings regularly before hand over.

### **All team members contribute**

Yeah, which they do, that is very true. Again I have gone backwards a little bit obviously contractor and end user at the very start of the project. Preparation and brief again you have a) which is fine and probably end user as well in there. Then obviously on the concept design you have used Belbin but I am not 100% certain. Again I think you have got it spot on with the people involved the roles and responsibilities decided early doors. You can do it there or there but at least everyone is aware of what their role is and there is no duplication. Again what we tend to do is once we have got the contractor engaged. Whether it is at an early stage there or stage 3 we have a governance chart. So everyone is aware of the governance of the project team. Meetings (the project board meetings), so everyone works to that and works up that way. That is all fine. I have just added in there client to development phase more of a technical role from our client PM as opposed to the educational client. Although they do step in and out of each other's role. I have sort of called the client both roles really in my world, so I have put the client in there. Similarly again in 4 and 5 as well just to say we would be involved heavily in there as well. You have got the handover. I would suggest a), d) e) and probably h) in that.

## **Mutual trust**

It really is critical that you need that, in the way we work in the collaborative process. So again at the start you have got the client who would definitely need to be there and the end user but we would not have a contractor at that stage (0). You have to have the trust or you can't go on can you? It's impossible.

I think that is critical that everyone has got to work together irrespective of what contract you use. It is about the people really. (Author- Do you select a team?) The way we work at the moment we have let the contractor engage their own design team. So he has control of his design team in the programme. It is part of the tender process. They have to provide us details of their proposed design team qualifications, experience of all the disciplines, architect, M and E, structures, and cost manager. So we have got that to look at we can score it accordingly. You find that it is such a small market that everybody uses the same, you could pick 10, not even that 5 or 6 consultants that they tend to use. It does help because they are all brought in to the process you know. They tend to know each other these days. Preparation of brief I would look at client and end user in that respect. Plenty of meetings. You say professional behaviour which is hopefully is a given. Concept stage, again that is fine. Set up the team, at concept stage. We do tend to get our design team and contractor on board a), d) end user, sub-contractor perhaps not site manager at that stage. It is those that run through our design stage. The site manager would nip in at the construction stage. I think is fine you have workshops, early doors design process and risk workshops. It is just a common goal of working because if there is a problem, just raise it. If it is going to be a major problem then you need to raise it early to the client. We have monthly project team meetings. Obviously we have got the design team meetings which could weekly or 2 weekly. There is a set project team meeting, prior to the project board meeting where any major issues can be raised up to director level. Although the director sits on the project board anyway. Saying that if anything major cropped up (they are monthly anyway) you won't wait you would be straight on the phone. So you have the mechanism. It is quite flexible and it works to be fair, because we do highlight reports. We take up it through P and FM meeting so everything is there, it goes through green, amber and red. Anything major is raised ASAP. Handover process is good because of course you need it. The contractor should be around for any defects but usually they are off site. Obviously we implement soft landing programmes as they are

called, with zero defects, so they have a dedicated defects person who is on call all the time.

### **Problem solving environment**

Again, yes, from number 1 you have clients and possibly end user, early doors. Concept is fine. All the personnel there is fine and you have the workshops. Whether they are held every 4 weeks or 2 weeks or 6 weeks it is really up to the people involved isn't it and the problems that they have got. So that is fine. Development stage, again similar process because you are just working through. The people are fine. Whether you would have your end user at that stage maybe or maybe not. Their work is done by that stage but there is not a problem in involving them. Some stakeholders or end users or heads like to be in there or their representatives. Same with technical design because I think those 3 mirror each other a little bit. Again on the construction stage whether you would have workshops, we tend not to just regular meetings. As I said there is so much integration between us and the contractor there is no need for workshops. Any issues are flagged very early, especially major ones. Small ones, not so much. You treat it as 'this may not be a major compensation event and so you treat it and price it up and agree it as you go along. So that's fine. Whether you want something in the hand over? Again you could put client, contractor, end user possibly site manager in there as well.

### **Roles and responsibilities**

Yes it is critical. I think strategic is fine. Possibly you could put the end user in there and similarly with preparation and brief, put in the end user. I think at the concept stage we tend to get the contractor on board. You have your pre start meetings and you have your governance charts. We go through the roles and responsibilities of who sits where. I think everyone on that list should be involved in that and should be at that stage. Those roles will run on and even at consultation stage everyone in there should know what their role is at the construction phase and even at handover. If you have got a programme with your client and end user and site manager, they should know their roles from early doors anyway. The handover you are looking at defects and snagging or you are looking at the phased physicality of getting equipment in there. Under NEC people should be aware of their roles like the supervisor and defects manager etc.

## **Team spirit**

Team spirit is fine all the way though isn't it! It does help team spirit; everyone should be working towards the same goal. Hardest thing when things go wrong it does tend to get a little spiky. I think it is critical because I mean you are bound to get disagreements and arguments, but it is not making it personal. That's where your professionalism comes in. So I think team spirit is critical really to any collaborative process, though very difficult. I think it depends on the people. I am pretty happy chappy, but I have worked with people who have the weight of the world on their shoulders from day 1. Even good news weighs heavily on them and they are hard work. Really, really difficult people. One person can bring down the whole team just with their attitude and negativity. It is difficult to manage. I have not removed anyone but I have had discussions with people about it. It is just the nature of the beast. Unfortunately it could be that if it gets that bad you will have to take them out of the team. Team spirit you try and select your best team, but that is not always possible. You can have a really good architect and a fantastic designer, really good at his job but he could be the most grumpiest, onerous... so you are stuck with him and you have to manage the situation. It is only the client and the end user but you could have a grumpy head (never seen it!). Concept design you could do allsorts there team building training. But some people may not even respond to that. I am cynical about team building; to me if you want to bond you go to the pub. Team building exercises are not my forte, to be honest. I have been to teambuilding exercises. You have got to get involved in it. There is no point in sitting there; you have to have a go. But all the people here they have to be involved there at team building haven't they. Social events are the way to go. Some people may not like that. But for me you get to know people, I think that is fine. How often you do that down the chain, I wouldn't like to say. You can team build through every point of the design process perhaps. I think you do it there and then you have the odd social event if people get on. Say if you do a good job, let's go and enjoy the success. If we hit a milestone then celebrate. Rather than team build, team build. But again I wouldn't disagree with the personnel involved or the principles behind any of that. People differ don't they. I think that is the hardest part of collaboration isn't it.

### **Contract supports collaboration**

Well they all do these days don't they. NEC, JCT there's PPC2000. I haven't used PPC2000 but other people have found it fine. The contract certainly supports it. We probably get involved as the client and advise the education client or whoever with the form of procurement and type of contract and stuff like that. Again we work it to support collaboration. As I said we use a framework anyway which is NEC based, so they would be happy with that. So that's fine. Concept design (b, c, d)). We tend to discuss contractual details as part of our tender document. If it is NEC we would put all the standard clauses in and we would explain in the preamble that it is to work as collaborative partnership. Which off the framework they know anyway. But if you went out to open advertisement all the contract details are in the tender documents. So when you get the contractor on board, we possibly wouldn't discuss the details of the contract as such but we start looking at the programme (that is part of the NEC). So in a roundabout way you are talking about the detail aren't you? So early doors, we will look at the programme which is critical for NEC. So we definitely start at that stage. Obviously you have to deal with you preconstruction details etc. Not certain what c) is, we don't use a facilitator, we discuss it with the contractor and the client anyway. The contractor tends to use their website is it 3p's or 4p's they use, so we tend to use that as part of our information sharing strategy. Ourselves and the contractor and possibly g) as well because we do have the main sub-contractors in their helping us as well. Yeah the rest is fine. Should be party to the contract apart from Mr end user. The critical thing is when you are designing it is programme and budget really isn't it so that links in with the NEC contract doesn't it. So that is fine and again, construction programme is key isn't it and the costs so again that's fine in there. Take it into handover.

### **Information sharing**

Yes, which is right. Because a lot of people in the old days used to hold on to information. Knowledge is power. The whole point of this is about transparency and sharing isn't it at the end of the day. Yeah, it's fine there, just whether you want to put the end user in there just from my perspective. Workshops are fine there are social events and the BIM. Yeah exactly. We don't use it in house we only have a small team but when we work with the

consultants we ask for BIM on stuff like that. Some people say it's good. It is good for designers, especially for the M and E boys as they can see pipe routes and stuff like that. So you have clash detection. People have used it for quite a few years with Revit and stuff like that. That's fine, everyone involved in the design process needs to be involved at construction phase and handover they have got to share all the information. That should be a given anyway, even on any contract, but I think as you have said everyone should be there. I think that covers everything. (Author – Do they use the same room?) It's not achievable. We have 4P's mechanism but we don't find it's a problem. All the consultants we use now are fully up to speed with the software and can zip down the line to the contractors. I have never found a problem with CAD or Revit which they send to the contractor. So that it is resolved early doors as soon as we have got the contractor on board and the design team. We sit down and discuss that sort of detail, can we have access to this and can we open it through the software so it is resolved pretty early on in the process. But again it is critical because if you want to put something down the line you need to open it straight away, not have it delayed. Never had a problem, but that is fine. At handover you need to have a phased approach there has to be information sharing about programme.

### **Risks**

A favourite one risk. Preparation of the budget again as the client we probably work with the education people and work on a high level budget. Whatever sketch plan at that stage but a high level budget as usual with a Q.S. You put a whole host of caveats of risks in, which we like to do. Obviously when we get the contractor on board everyone is involved risks workshops are critical. They are required at the start so you can define your risks. So you can apportion your risks to clients, contractor or whoever and have can timed workshop really throughout the course of the process so really you can knock all the risks off. It works really well, because that is your information sharing isn't it. You're working together. You do get some risk that is grey and you have to park it because you don't know if it is client or contractor as such but they usually get resolved as you go down the line. Any risks of high monetary value or have an impact on programme, you put those in your reports to project board. It goes upstairs and hopefully through the process they minimise. Obviously early doors there will be a whole host but then as the design develops you start knocking the off. Sometimes at a cost. Obviously as part of the tender

process we ask the contractor to highlight risks and price them as part of his risk analysis. On risk which we perceive to be his risk. I mean the ground is always an interesting one isn't it. We tend to take that risk although we do tend to do a full ground investigation. It covers everything in the ground so it is unfair for the contractor to take that risk even asbestos. If you can't get in to do a full survey, perhaps it's just a type 2 (just visual) inspection we can't expect the contractor to take that. Different if it was part of their remit to do a full invasive and do a report on it. Then that would be their risk so again it is about apportioning risk. I think all of these people perhaps not the end user as such, should be involved throughout with regular workshops and meetings and things.

### **Regular meetings**

Again I think it is critical that there are meetings between everybody otherwise you would not have a collaborative process. So again really from early doors you have the client and end users in 0 and 1 definitely. As concept moves on you have the whole team in the concept whereby you can have regular workshops / meetings at whatever intervals they need, as and when required. Again developed design you have the whole team perhaps not the end user in some of those. Which you haven't got which is good. Again you have got the same process working all the way through where you have got the design team and contractor working together having regular meetings. Obviously you have your monthly progress meetings but if you feel there needs to be more meetings or workshops in between that is fine. It just covers it all.

### **Non-adversarial**

It should be non-adversarial, that is the whole point of it. But you do get little pinch points in any contract. I think with the contract as such the NEC and the JCT and PPC as Egan said I think it is about being a bit more professional I suppose and contractors not trying to pinch sub-contractors and squeezing them not paying them. That's what they probably mean as opposed to being open with each other. It's being transparent and stop getting the legal boys involved. Let's work it out ourselves. That's all you want at the end of the day. Say on a 2 stage we work on the first stage tender is really just based on prelim, overhead and profit and so we can actually see the profit the contractor is making. Whether it is the cheapest way of working, I don't think it is. You are going lowest cost sometimes. You have that mechanism, you are getting the right contract for the right

price. Preparation and brief, we tend to pick our team at 2 but that is fine. Again you have the same process of everyone should be involved again perhaps not the end users in some of these. Which you haven't got. It's just working together and being open and transparent and workshops / risk workshops which stops all these problems doesn't it really. So I think you have covered it all.

### **Relationships between parties managed**

From our perspective we work with a contractor PM and we have our own PM so they tend to work together and they possibly should manage all relationships down the line. We have never had a problem to be fair. The contractors and consultants that we work with are all very professional and they know their roles and responsibilities because they are defined. I think that stops a lot of problems within the team. The people we tend to work with are highly experienced anyway. So they have done it for years and years so everyone is aware of their roles. Obviously when you have an end user you can say what do you want? They say they want the 'works' oh we want everything, so you have to manage the end user and really tender their expectations. I think in there you would have A) and E) saying look you can't have everything. So you have to tinker with things. You have this budget, you have to lose some and gain some. So again that is an expectation in there. It follows the same theme that everyone in here has to work together. You are looking down at workshops and meetings and that is how relationships are managed within the teams. I think if there are problems you have the meetings more regularly you have the workshops more regularly. If there is a problem then you have to take your monthly meetings elsewhere. Hopefully through the workshop and meetings and people acting as professionals there shouldn't be a problem. But that should be dealt with in the workshops and meetings. I think that covers it all there. We use arbitration as part of the contract. We have never used it though to be fair. Not even in the old days. We always managed to sort things out and it is down to the people, the contractor. If they feel you are being fair and reasonable as the old JCT describes. Again it depends on the contractor and person but all the contracts I have been involved with we always come to an agreement.

### **Pain gain**



I have never used pain share gain share. Is it fair to both the client and the contractor? Well that depends on how it is set up isn't it? Because you need the client and the contractor to agree to a set up. So you think if they have agreed to this then it should be fair from the outset, up there really isn't it. I think it should possibly be that if we engage a contractor at an early stage it should be up there. The mechanism should be in the tender. If they think it is not fair they may not tender unless they needed the work. Then you have an argument at the pre-meeting. Well that's not a fair mechanism. It is a problem. If there is a pain gain share mechanism then it should be up front and agreed by both parties. So it should be fair by agreement you would suggest. I suppose it doesn't work like that. But I have never used it so I am struggling to answer that one. We would struggle especially in the current climate to say we are going to give the contractor £x. It would be a difficulty.

### **Everyone respects input**

I think it all integrates, all of this doesn't it. Everyone should be there involved signed up to the agreement. It all rolls through and comes out of your initial workshop and your risk workshops and your team meetings and your design meetings with the contractor. It wouldn't work wouldn't it I suppose if some people don't respect some views or they disagree with it. Again it is like team spirit. We are all professional people and you have got respect. Whether I like your view or not I have to respect your view and what you said. Whether I agree with it we can have a discussion. A decision is made, but you also have to respect that decision. It's no good sulking and sitting in a corner because they haven't had their way. In life you win some you lose some and you have to be pragmatic about that. I would probably put the end user in the top 2 and then you have your common theme, that everyone is involved in the process. Social events and workshop is there, but everything should be teased out and again the respect should come in at concept stage, if you have everyone on board at that stage. You shouldn't have to say it, it should be a given as part of your chartered background. I think you have covered all the bases there to be fair.

### **Early involvement**

Definitely an advantage. Obviously a), end user in there as well. Then as you go through design you definitely need your client / engineer contractor and end user and supply

chain and sub-contractor. Everyone has to be involved in that supply chain because you are trying to utilise the contractor's knowledge of his buildability and the supply chain and he can offer. The product which would help in that particular design situation. Nobody knows everything do they, so it's about pooling that knowledge and getting the best result for your client at the end of the day. Again it runs all the way through. You know you have got your workshops your team meetings, your design meetings which everyone should be involved in. Though maybe not at the same time. I think that is key to the process though definitely. We have a project now which is going to have to be a phased development on an existing site. To get the contractor in early as part of the process and get them to say how they are going to phase it I good. Rather than us having a stab with the design team and the contractor saying you can't do that it's not economical because of a, b, c. Get them in and say work with us. How are we going to phase this project? But that is critical to the whole element. It is so interlinked all this.

### **Win / win outcome**

It should be you finish your projects on time and on budget. That is not withstanding at concept stage or development stage where you have a budget, but that budget may not be sufficient to meet the brief anyway. So you could get development stage scope creep and the budget may exceed what you have got so you may have to go elsewhere for funding if you can't do your value engineering. But once you have got that set hopefully from development stage through to construction, unless you have problems (you have got your contingency) really at the end of the collaborative process you should come out with a building that the end user wants but for the budget that was put in place and was built on time. It should work and it should minimise any claim situation which is the whole point isn't it and any disputes. You have the end user that wants everything and you have to say you can't have it you have to compromise and that takes time but you are working together to achieve a goal. I know you have incentivisation but even collaboration without that it has got to be better than it used to be. It should be a win, win. I have heard of instances where it is not a win / win.

### **(Author - What is your background?)**

Q.S. by profession which I have done for 20 years more recently in an in-house multi discipline group for the last 10 years working on frameworks and schools.



## Interview - 1305

On these particular projects it is slightly different to usual tendering because it is a framework. It is a two stage tendering process, so we get our prequalification bid in first and once we become a selected / preferred contractor then we work on the phase 2 together with the client's design team and some of the end users, to get cost certainty, to get Welsh Government funding. So that is really at the point that collaboration starts as far as we are concerned. We need to understand what the end users want to get out of it and what the architect's interpretation has been. Which 9 times out of 10 is his vision, his concept really. It is getting him to buy into what we are trying to achieve. Driving down cost and trying to build it is a different way, a cheaper way and in a more buildability way without upsetting him really. It is his design at the end of the day and rather than saying, no we are not going to do that, you don't have a say in it. It is the way that collaboration works. Right from the point when we are awarded, we are saying well that's quite a difficult façade to build. It is not cost effective what if we build it this way. Because we have got the experience, 10 years building educational facilities under Welsh Government funding. It is tried and tested meets the U value, BREEAM betterment about 25% when we were only supposed to about 20%. So we have the evidence. What do you think? It starts right at that point I think. Driving down that cost to get down to the target cost so we can go forward with the project. They always start off about 25-30% over budget. When we get to financial close we have got then got a huge task of value engineering down even further to get a viable project. You can't do that single handed you have got to do that as a full team, client and end user on board. So they may have asked for plasma TV's in every room. It maybe that you can only have them in standard teaching rooms and other rooms may need to have some sort of other facility. They will say "oh that is what I want, that was my aspiration". I have to say, okay, what else can I do? It's a total different outlook on working. The contract sits away there but these contracts are on NEC option C and option A. Which does lend itself to the partnering ethos. And works quite well. Option A gives us more comfort and more control. We control the pennies because on option A we are on fixed price lump sum. Option C, we have got more comfort in the costing. We have got the pain gain mechanism and we use it to our advantage and for the end users really because we generate savings throughout the project by doing things a different way or substituting materials. The end users

normally end up with better facilities for teaching. So we encourage the client body, the managers and the designers to buy into that. We get huge benefits at the end from option C and the end users get more equipment, more enhancements in rooms that they never thought they would have. Rather than just spending on the building. The building still performs it meets BREEAM. It's just having that experience and knowledge which has been built up over 10 years to give the benefits back really. I think that collaborative working is about that and we are winning awards on the back of that and more work which is what it is all about. If you go in with a blinkered approach 'that's the contract and we won't do that until you tell us this' then you come between a rock and a hard place and you get nowhere.

I think the other side of that is trying to maintain the supply chain that we started off with because they have been learning with us. We all have the lessons learnt, to take from project to project trying to introduce a new member into the supply chain could cause us a problem because they don't understand the full ethos of working together and getting the ultimate goal at the end. They are on back to back contracts with us. If they can generate savings as well then it goes back into their pot. So we share. It's open book both up and down the supply chain. By partnering especially on the major packages you get the benefits up front so we have got cost certainty going forward. On this project the M and E package is 5 ½ million. You couldn't just go out to open tender with that. There is too much uncertainty at the end of stage 1. These guys have up to 6 year's knowledge, they just know what goes into these buildings and they know they can do things slightly differently. They more or less know cost per square meter. It is just the fitting out at the end and they can give samples and have that type of cubical or that type of sanitary ware you know the finishing touches that is uncertain.

We normally get the information at stage E but the contract documents say it should be at stage F. I think that it is the fault of the design team in their programme. They never seem to get it right at stage F. When we go to the bid stage it is always a grey area which we have to fill the gaps. Basically if we stuck to the contract we would say, hold on we are not doing it until we get to stage F, and that could delay the process and it is not really what we are about working as a team. There is a lot of collaboration that goes on with the design team, the client and the end users well in advance, to build up that initial design. It starts then and then we get on board very early and develop that further. Yeah

that is a good guide to use, because all the clients work on that anyway with the architects (RIBA). The architect being the lead consultant and they bring the M and E and the structures, landscape, architect and specialists underneath then, contractor.

### **Open dialogue**

There is an element of open dialogue starting at the concept design stage. But what we have discovered over the years is that the architects tend to be in the driving seat during the early stages, doing the concept design. Concept design is more of what they want to see than the end user. The practicalities of it whether they are given the right budget at the time is a bit of a grey area because the concept designs always come in way over budget. That could be a fault on the client's engineer of not giving them the right information up front. Saying, that is your budget, you have to design within that. It is a common trend that whenever we get to cost certainty, trying to price the design information it is always over budget. Then we have to claw it back in. We value engineering very, very quickly and then the design team are lost because they are going "oh, we can't accommodate that". Normally four weeks after we get to cost certainty we are starting on site, so it gives us a huge problem up front. We are going into a contract without the steel being redesigned to take elements out of it. We just hit the ground running and that's why we end up with a huge team on the contractor's side. 9 times out of 10 we have 2 maybe 3 design managers full time on it to fill in the gap. The other fault that we find are the client's design team which are novated to us, have expended 80% of their fees up front so they haven't got enough fees to give us the service that we want, to go through the project. That's something we are trying to get to get the client and the clients agent to deal with. But then the architects are saying no we want that up front and it does give us real problems.

The way you have laid it out is fine. We have regular design team meetings, user group meetings, client meetings and on top of that we have specific workshops with the supply chains and ourselves and the designers, the designers client and end users on board really so its fine tuning everything that is in that document. Technical design a lot of the time is open ended, we find with a performance specification. So it's up to us and our supply chain to ensure that, what we put into that building meets that performance criteria. We have got packages out there which have several of our design proportions in them.

Causes some hiccups along the way sometimes because people's preconception of what they are going to get are not always what they end up with. It's for us to make it work within the budget we have got to meet that performance. They may come in and say 'oh I didn't expect 17 vents in the lecture theatre', you know, but that is what we need to do because it is integral to opening windows. It is getting them to buy into that right from day one. Not just putting them in at the end of the job. (Author – do you use BIM?) We have had some issues with BIM it has been a nightmare. Especially on this project as the consultants use different versions of it. Instead of using the architectural one the structures use the structural version and the MEP use a different version and the three don't talk and that is where we found difficulty. Whereas it should iron out all the problems about coordination we found it made it worse. Because the 3 systems are separate and can't be linked and they don't talk to each other. So we had to go back to the architects to try to incorporate the things into their model which has taken them more time and you have got clashes. It should avoid clashes. I think it has a long way to go on BIM unless somebody says, "you will use" (probably the client body) "this particular system" all fed through the architect you are not going to meet in the middle. But that's the way we are going. Shall we work our way down this. We carry open dialogue further we work right up to hand over and we have a lot of training end users. Familiarisation and post-handover we have a specific team that stays with the school for 4 weeks just to ease them in because it is all new to them. They are probably coming from a dated facility where there has been water dripping from the ceiling. If you want the heating on you go an push a switch or something and these are high spec high tech energy efficient buildings and its all run off a computer. They have to understand that to cool the building down you have to open a window and that brings in natural ventilation and it goes out through the stack. There are roof lights in the classroom and if it gets too hot the roof lights open. If the CO<sub>2</sub> emissions increase then the roof lights will open because of natural ventilation. It is educating the end users, because they go 'oh' and you get a phone call. Instead of getting a phone call to customer care team saying the window is open and everyone is freezing. They are on site because there is a lot of fine tuning afterwards. Some classrooms will generate a more heat and more CO<sub>2</sub> than others. So you have got to fine tune the sensors to claw them back a little bit. You might have a roof light or a vent open when it starts to rain and by the time the rain sensor activates and it shuts sufficiently there may be a little bit of splashing that comes in. It's looking at positioning those so you

are away from the prevailing wind, but the architects don't think of that do they. The speed time on the activators, so we have had to do a lot of redesign on the natural ventilation just fine tuning it but it goes on beyond that. Events with the school we have got extracurricular activities where the school has adopted this as one of their projects. We do science, history, geography and maths. Members of the team will go in and on maths; they calculate the numbers of bricks in the building, how many blocks. Sciences, because we had a cut and fill exercise on this project, we split level and had a huge retaining wall so the students come out and had a look at the makeup of the ground and how we stabilised the ground to build the levels up with lime stabilisation so you could see through all the different layers, strata. Geography built onto that, we have done some hedge translocation so the pupils were brought into that. Rain water harvesting and all the green codes on the building the environmental friendly issues. That's all part of the curriculum, which they didn't have before the project and that's okay. Construction wise it is more than a building to us. The way we look at it, it's a way of life and all the team buy into that so we just go that extra step. We do two sample rooms because it is split into main stream school and SEN and the expectations of both end users are completely different. So rather than doing one sample classroom we do one SEN and one mainstream and they are ready fairly early on in the building. What we find is there are a lot of people in construction that can't read 2D drawings let alone an end user. They can't interpret off a drawing what something is going to look like. So we do these sample classrooms and everyone from teaching staff to pupils trawl into the building and they go into the finished classroom. You get 'wow, oh I don't quite like that over there, could it go over there' and we say 'well we have to have some standardisation but we understand that some departments have different ways of teaching. We take it from there. So it's hard work sometimes. Post occupation is unbelievable when you have got 70+ education staff coming in. They are asking for individual things. Most of them are based on a teaching wall over there, which they have seen in the standard classroom. They have approved the standard classroom. But you still get 'could you move the shelves'. If it is on option C where there is money you could move the classroom around. But if not then it is a no and that is why we need a very strong client's project manager. The clients representatives have offices on site here and are very much part of the process. They are here full time and involving the end user on the approval of samples signing off change control. It goes both ways as well, you know it they want to change something, we go through that or if



we want to change something it goes back up the line so they are important part of the team. What is a collaboration facilitator? We tend to have those (just not called that), we have three reviews on the project, before we start, ½ way through and towards the end with a facilitator. That is normally wrapped around risk and then ½ way through we use the traffic light system when risk is reduced and then at the end we review the risk. How did we deal with it and what it has cost? That is using an external facilitator. So we do those specifically wrapped around risk. There are a number of topics on there really, we have the risk, cost certainty, partnering so they are reviewed. We find them useful because you have got the end users there the council's maintenance team. Once they take the building over they need to have an understanding of things. How and where the information is and that should be the role of BIM. But it doesn't get that far. What we find is that the local Authority hasn't got the money to spend out on the software or the hardware to read BIM to use it as a maintenance facility. Rather than going halfway they would have to put all of their educational facilities on that system and the cost is just too great at the moment.

### **Common aim**

Yeah, our goals are to deliver the project on time to the required quality, safely. No accidents to reportables at all, within the budget and meeting all the requirements that are set out in the contract for target training and recruitment, local employment and spend. We have a graph of local employment which we try to get it within a 30 mile radius of the project. It is all these steers that come down from Welsh Government as part of the procurement chain. There is a lot more to building schools than there used to be. Well building anything nowadays. You have the BREAAAM rating, this one is excellent. We just got our 1<sup>st</sup> educational facility secondary high school in the country with BREAAAM outstanding. But it is wrapped around, responsible sourcing of materials, recycle content and all that so it all adds a spin. Another control measure onto how you do things really. The supply chain have to buy into that as well and trying to explain that to the end user that we have to do these things. It's an energy efficient building everything is done on sensors. So the old days of turn a switch on to get heat and then switch off doesn't exist anymore. The caretakers can be the worst. Especially because most of these buildings have underfloor heating and that generates heat through the night and gets to temperature and is really low energy just maintaining that heat in the screed. The

caretakers came along and think oh the boiler is running through the night and switch it off. So it is educating them, as what happens is you come in in the morning and you have a cold school and all four boilers are on full maximum heat trying to put heat back into the building through the floor. Using more energy than it was 1<sup>st</sup> designed for. So it is educating that end user and how that end user uses the facility is a big part of that collaborative working as we see it. The client and end user told us in workshops what they expected, because what we find is that they steer more towards their education needs and the pupil's needs and then the maintenance on the client's side. How they maintain the building and what energy efficiency measures are in there to drive down cost. So you have got two steers really. The headmasters and needs of the department are really focussed on what are we getting for our children in terms of facilities, nice building yeah, but how do you get from there to there? How far are the toilets? And actually using the building rather than the function of the building. I suppose a better word is and energy efficient unit really, that is what it is designed to do.

### **Early warning systems**

Right we use the NEC so we have early warning notices. From that we have an early warning review meeting if it can be resolved there and then great. If it affects the cost or time then we issue a compensation event. There could be a nil compensation event when you just get time or it could be an increase in cost or a decrease in cost. We do use the early warning system and it is quite a good mechanism. (Author – Incentivised?) We have 3 controlling documents, which is the programme, the IRS and the design information programme. We ask for information by specific dates and they are traffic linked. So when we have clients meeting they are on red and we are saying, 'so we need to get this information by then otherwise it will affect things' if it goes past that red then we have got early warning. We just escalate it and try and deal with it in a different way. We have also got the 2 tier management line where if things can't be resolved at my level, which is corporate director, from the clients side and MD, from the contractors side, which is called a principals meeting and then you have got the directors, the architects practice and the structural engineers. So it is my job really to keep it at this tier of management. But if something does go up a bit further it goes up to the next level and they try and sort it out there. Touch wood apart from highway issues which are the bane of my life, we have never had to go up to that level. Highways are a law unto themselves.

The only reason we have had to go up to that level on, is on highways because of cost. They have an education budget which should be there for education. Highway departments try to manoeuvre funds onto their section to have road enhancements. Something they haven't got a budget for. They think well we can have a part of this with some section 111 works or Section 278 or something. We will have it and we will have improvements on top of that and the debates that go on are unbelievable. We have got it on this project. The country lane on this has got to be upgraded and enhanced. We started off at A and we are probably at Y now and it's still going on and on. It's all the same authority but until one department talks to the other department. It is envy of funding, education has funding and highways don't have funding. So it's a difficult one and I have found it quite challenging to manage the process. We have got our own little education team, end users and then stuck away there is there is the highway doing their own thing. Trying to get the education side to understand that we have to do this it as part of planning it is part of access transport surveys and everything to get the building functional means taking some money off them. There is a lot of resistance to that. We have community engagement as well. We have meetings even before we start on site with the community. Invite them in for a meeting to explain what the scheme is, how we manage the process and how we deal with dust, noise, mud on the road and disruption and try and alleviate their worries. Then we have follow on meetings monthly where we have an open. The very last Thursday of the month open to the public. They can come in and talk to us to voice their concerns, have a cup of coffee with us. We have community managers to deal with that. Any member of the team can go and speak with them. So community benefits involving the community because they don't know they just see contractors are going to come in here and it is going to be a right state. That is all part of it as well really. Regular meetings and design. The design is coming to the end on this one. We are about half way through. I think the design is on finishes, ff and E, colour schemes, carpets and all that type, the main bulk of the work has been done but they are still there. The architect might want a certain colour and the end user do we know you are having blush pink in this corridor and then it goes to a green and then as it comes around it goes to yellow. The end user is saying 'I don't want that I will have three colours to touch up when everyone goes down the corridor dragging their bag down it, it's not practical'. The architect is saying 'I thought it would look nice'. That is the process we are going through now. It is getting the architect to understand the end user and the

practicalities and that's not easy at all. Periodic workshops every 4-6 months, I think there would be more, on the construction side. We meet every month to review the project and if there is anything warrants an early warning it would be dealt with.

### **All team members contribute**

Well as the director responsible, ultimately responsible for the business unit, it's down to me to try and steer the ship. Get all the team going in the same direction, not always easy. You get some resistance and some people think they know it all and want to do it there way. We have got certain controls and certain parameters which we try to stick by. That's the way we operate, but everyone buys into that. As I said we have got dedicated schools and community managers so the construction team have to listen to their views and concerns. If we do get any concerns they go straight to those and that is how we deal with the public and the end user, through that mechanism. But everyone has to buy into that. It is getting the message down. We have some new staff here which haven't worked on a NEC partnering scheme before. They are on a steep learning curve. But once they get into it, once they see the disabled children coming down for visits. Then taking a group of children to see the new classrooms they will be 'wow, I didn't appreciate the buzz you get out of that'. Down the bottom we have a training facility where we have some pupils in wheel chairs laying bricks and we have ramps and we can take them into the actual building. We can take their wheel chairs into the building to see their new school, so everyone is agog saying 'wow, it's great'. Personnel are key and everyone that doesn't come up to the mark I tend to move them out of the business unit. It does take a dedicated person to work on these types of project and you have to respect everyone. We are working right in three schools back yard. Out back there, we are only 2.5 meters from the teaching facility and down the bottom we have 2 SENs, high dependency units. We just can't have a ground worker bowling through there in his dumper, mud going everywhere, shouting and swearing with a cigarette hanging out of his mouth, abusing kids. So personnel are very key and on the clients side as well they have got to select the right agent to as a go between. Because if he is in the wrong frame of mind it can cause no end of problems and it is not contractor, end user, clients, we are very much a team. We do KPI's monthly. Scoring KPI's where every member of the team feeds in electronically and we review it on a spider graph or a pie chart to see where we are, we

just look at the percentages where we are failing and improve on that. There are no names. Personnel are very keen on it even down to the person sweeping the building.

### **Mutual trust**

KPI measuring helps and acting in an open and honest approach. Doing what you say and completing on time and being fair. They are all measured on a KPI payment on time, resolving disputes, it is all measured and I think mutual trust comes into that. Just doing what we say we are doing. We set out a number of pledges and promises at the beginning. At the interview stage and I think we have fulfilled those. We have just had a second considerate constructors visit and we have got the highest score in the company. In the whole of the Group, which means we should be going up for an award next year. Which is great for me and great for the team. The new scoring regime is out of 50. They have 5 main controlling topics for 10 and twice this year we have scored a 10 on collaborative working. Respect for end user and everyone else is important. But to get a 10 considerate contractors actually have to go to the organisers with a report to say why this particular scheme warrants a 10 in that category. It all helps in this particular environment. Totally different to what I was brought up with. I used to work for the big McAlpine, so transforming from that to the new way of partnering open honest approach not hiding anything and sharing problems is totally different. Some people can't get into it at all and it causes animosity and friction and they just have to go somewhere else. We do tend to do what we say on the tin.

Mutual trust definitely, not hiding anything.

### **Problem solving environment**

Definitely the way we work and the systems we have in place with that approach. We can more or less handle any challenge that comes up. We have got a tracker, which tracks virtually all the main controlling factors on the project. So if we are waiting for instruction, clarification, change and control things it is all on the tracker and that is reviewed every month and it changes from red, amber, green and closure. Nearly

everything, even the highway issues that we have got and even down to doing things in a different way, it's all discussed in the tracking meeting. We are always trying to solve things as a team. It can go on all day sometimes, believe it or not. People go away from there with actions and the next time we should have closure. Something's could evolve into an early warning meeting but we try to head it off at the pass. The tracker meetings are held with the client, cost manager and the project manager so he knows where his costs are going from his budget. We know where ours are going and if we are generating savings. It's easy if it is option A, but it's a different take on option A because we have provisional sums in there. There's a lot of work in there to expend those provisional sums and trying to maximise the benefit of them without compromising them which is a bit of a challenge in itself.

### **Team members understand**

The client wouldn't have any influence on the contractor's team, but under the measures they would say that they would need someone to fulfil a, b, c and d and you can only do that with evidence. With the individuals obviously and fulfilling those challenges throughout the project.

A workshop was held with all the framework members which is 4 contractors and client body prior to the tender process to explain how roles would work. To get selected for preferred contractor you had to attend. I can remember it well, the design team were there as well. I think we were actually scored on that workshop on how we came across as well as a brainstorming session at the end. It is difficult when you have competitors in there with you as well. You try to be open and honest but not give too much away. It's a bit like Constructing Excellence Wales when you have got one of their exemplar events here and we give a talk here and a tour and you have got competitors there. It is about learning from an exemplar and raising the bar and giving the information out but you don't want to give too many secrets away to the competitors because they soon jump on the band wagon.

Role and responsibilities I think are defined to a degree but it is subjective how far do you go because you can have your measuring points. But it is individuals and how they interpret that and deal with and is a big part of it I think.

### **Team spirits**

Definitely. We have certain milestone events through the project. The turf cutting ceremony when we started. Which is a lot of publicity and a little get together afterwards. We just had the topping out ceremony. All the work force were treated to a hog roast. We stopped the job for 1 ½ hours while we did the hoisting the spruce over the building, to ward off evil spirits and the children took part and had a concert in the building and speeches. While the work force were stood down, rather than just sitting there twiddling their thumbs, we gave them a hog roast. Which boosted their spirits and they all felt part of it rather than just being the contractor. They thought, we can have some more of this and that will be seen on the handover for those that are still part of it. We were definitely selected on the way we came across in interview and our experience in these projects and the evidence of what we do. Also the supply chain as I said we have got our specific supply chain just because we have comfort there, they are part of the team. They do sublet some of the packages and they do bring in new people and I think they go on a steep learning curve to understand the way we work. But we haven't had too many issues. We have had a couple of people we have had to remove from site. Goes with the territory I think in the construction industry. They just don't stop when there are a group of kids coming through. They don't respect them, they are still using bad language, they are not respecting the site you know dropping litter and things like that. It is just some people never listen so they have to be dealt with. It's just ironing those out. The majority on this project, a 280 workforce have been fine.

### **Contract supports collaboration**

Yeah, it's the type of contract that lends itself to it to that especially the NEC 3. (Author – Have you used PPC2000?) It's been talked about. We are on a 21 century schools framework agreement and so I think the clients and project managers tend to like / prefer the NEC route. Because of the mechanisms in there I think. There are other spins offs you know there is private finance and PPC 2000 with stakeholder involvement and they are full stakeholders instead of at the moment where we are stakeholder in name only in this NEC. I have yet to work on one of those but I think it has got advantages as well target cost and risk inclusion in contract development design. We get involved very early on in technical design. Construction they all go together. Handover and close out, not part of

the contract that. Things we have developed so we do really, but there is no contractual obligation to stay post contract. I don't know how you would put that into a contract. Unless you put them in as specific personnel / role as a FM manager to hand over for a specific period of time, it's not written in there but it could be written into there.

### **Effective information sharing**

We use intranet based 4 projects so everything is uploaded onto 4P specification and drawings wise. We don't use it for all the records and there is a protocol so the client and the designers know that they have 14 days to log on and comment before it goes to construction phase drawing. So we do use the intranet based 4 project and its good. (Author - is concept design the right stage?) It has to be to get that target cost. Understanding what the architects, structural designers etc., thought processes were and intentions and then turn it on its head and saying how do you put it together (Author - Do you think it should carry on after construction?) Information sharing, oh definitely more so really on the handover all the information on how these systems work and these building functions have to go over to the end user for them to use it properly. I think it definitely needs to come down to information sharing to that in use to a certain degree.

### **Risks**

That is what we have the risk review meetings for. We have got a risk register and we have got specific owners of the risk and how they are dealt with. There are risks for the client, there are risks for the client's agent and for the contractor and there are risks with funding stream. So it's quite detailed and it works quite well. There are risk workshops and risk reviews and its managing those risks and eliminating them, by a specific period in the process. When you get your financial close a lot of them go anyway. Another one is planning, when another lot go. Using that risk register facility and being owners of it and then reviewing it regularly is a good tool.

### **Regular meetings**

Well we have regular internal meetings. We have design team meetings, end user meetings and client supply chain meetings. It is constant, it is all recorded minuted, sent out and reviewed. Part of the course really goes right through and even in use we still



have seasonal commissioning tweaks. Then we have a post occupancy review. Two really the 6 months one and the 12 months one just to see how the building is functioning and to see what the end users expectations were and did we meet those expectations. So post occupancy reviews to learn from that and then move forward.

### **Non adversarial**

We try not to be contractual if we can sort something out, round the table we will and deal with it that way. (Author – Do you have repair workshop mechanisms?) Having not experienced it going to that stage, I am not sure there is a mechanism for how to deal with it. It could go up to the next tier of management to a principal meeting. If it wasn't resolved at my level. But with the early warning notice and the constant meetings and communicating, I think it is difficult to get into a conflict situation. It could happen but it is my job I think to head it off at the pass and not get into that sort of situation. All your collaboration and working as a team could go out of the window at that point. I think you would see it in our measuring tools and your KPI's. If everything suddenly went into the Spirograph as a zero it would be flagged up. What is going on, let's deal with this as a team. It's having and understanding on both sides. We tend to get a lot of misunderstanding when we have gone from the end user because they don't understand what they have got. So I think that is why we have adopted the staying for 4 weeks sort of thing. To give them that easing them in soft landings approach then we do get calls after that saying why isn't this working and what is going on with this and a lot of it is to do with maintenance. They don't have maintenance agreements. They think the 12 months defects covers the full maintenance agreement, but it doesn't. So it is educating, and we do get complaints from people outside the team post contract but that is an education thing. It is educating them to understand what they have got and how to use it. We find when they come from an education background it is difficult to get the across.

### **Relationships managed**

You have got KPI monitoring and feedback and I report into the board. There is a section in there on collaboration and supply chain relationships so it is monitored and it is all about being open and honest and being a friendly contractor. I like to pride myself on very good relationships with everyone. Decamping from old buildings and helping with that at hand over. Understanding how long it takes and you don't leave anything behind.

When we did the first one we took possession of the building and it was just stacked full of furniture, boxes, they hadn't cleared out anything even chemicals left from the science lab which is specialist based. They need to understand that when we take that building that it has got to be completely empty. It affects our waste stream because we operate a zero waste to landfill. We have a relationship with the end user and don't walk away and leave them to it really.

### **Pain gain**

It is our intention from day one to maximise it for our own benefit. To generate more profit obviously and on the clients side to give more backing to the project. So they get the benefit right off the end and we monitor it right throughout and if we feel we have got comfort at the end of the structure well we can start releasing some money back in 9 times out of 10 the client will want to spend it. So it generates more revenue for us and contract value goes up, it is a win, win. The forefront of what we do is maximising that gain. Obviously get some pain on the way on something's that are wrong but it is taking money from the one pot and putting it into another. Dealing with it and still protecting that pot in the end because most times it is a 60/40 split. Where we get 40%, the client gets 60 anything above that is all the client. So if we can get to it quickly by this water tight date they have got comfort in there. They like us because they can start spending it on new sound systems or more equipment that they didn't think that they would have the budget for initially. So it is a very important part of collaborative working I think (Author - When was the target cost set?) It was set as part of the funding stream. Welsh Government and Local Authority, they know what their budget is. We try to get down to the target cost by the end of stage 2 before the financial report goes to the Welsh Government. 9 times out of 10 it is over and then we have to have a crisis meeting quickly with client and think what can we strip out what can we change so the report can go. They won't have contingencies in it you see. When they do their financial report there won't be any contingency. It has to be spread across that packages the risk element. Our board directors say the framework only has a certain percentage of margin in it so we have to generate more margin out of that pain gain mechanism or it is not worth us being

in business. So it is the fore front of everything we do. In use I wouldn't have thought because by the time you get to that point any gain has been used before they move into that.

### **Everyone respects input**

It goes without saying right down from our supply chain, main suppliers feeding back up. Selecting the right iron monger, fit for purpose, duty of care, we don't try to tuck people up anywhere along the line because it's not what we are about. It would just back fire on you and they do respect everyone's input. Again down here going into 6 and 7 just in the way we work and what they expect from us as well.

### **Early involvement**

Yes, definitely we involve our supply chain to get the target cost cause without them we would never get there. (Author – Is it key suppliers?) Key, yes, we tender the key packages with elements of the design in. Then there is the risk. Then the lower packages we just put a price per square meter in because we know roughly what we can get it done for. But MEP definitely structures and ground work we involve them really early to see if we can do something with remodelling the ground to save generating waste to go off site. Using and keeping everything generated within the footprint which takes a bit of doing. But we have got ground work contractors who are willing to do that, trying to drive down cost. I think in use we do build in the maintenance factor for the first 12 months. Specific things especially ME and P, Kitchen equipment and the like because the school won't get their heads around it. The ongoing maintenance comes out of the schools budget now you know. They are business units themselves now schools.

### **Win / win**

I think so from my point of view, profit, repeat business, winning awards and happy client they are my ultimate goals. If I was doing something wrong, I wouldn't be winning awards and our reputation would be tarnished. That's what I have got to protect and down there (6 and 7) I think they are as important as these up here of understanding. (Author – Are there incentive schemes here?) Apart from the pain gain I would say no. The only incentive is getting more work with the council and with the Welsh Government by doing

what we do. There are no bonus schemes or reward if you complete early. What we find is education projects are so tight on programme anyway and they all revolve around term times so we must have the school ready for either a summer term an extended half term or an Easter. All the education projects fit around that and they all start in the autumn you go into the winter months in the ground all the structures, when all the elements are being thrown at you, but that's just the way they are.

**Author- Do you think the model subject to modifications is useful?**

Yes I would think so. It is worth while carrying on. It doesn't exist does it something like that, there may be some papers on it or somebodies written something on it but if you put it like that it is good definitely.

**Author - What is your background?**

I was taken on 6 years ago specifically for the framework and it has just developed from there. I won construction manager of the year for a project which was very much collaborative working. There been elements right throughout my career. I have done a lot of PFI hospitals. In hospitals you have to understand every working room, every nut and bolt. Especially operating theatres and things like that. There is a huge learning curve on them and what goes into make them function and hygiene and germ free environments and negative air pressure and all things like that. I think it is in my background. I am a fully chartered builder and I was started in the industry at 16. A trade background and it took me 8 years to get my degree distance learning. I was working full time. I worked for 17 years with special projects before getting head hunted for these sort of projects.