
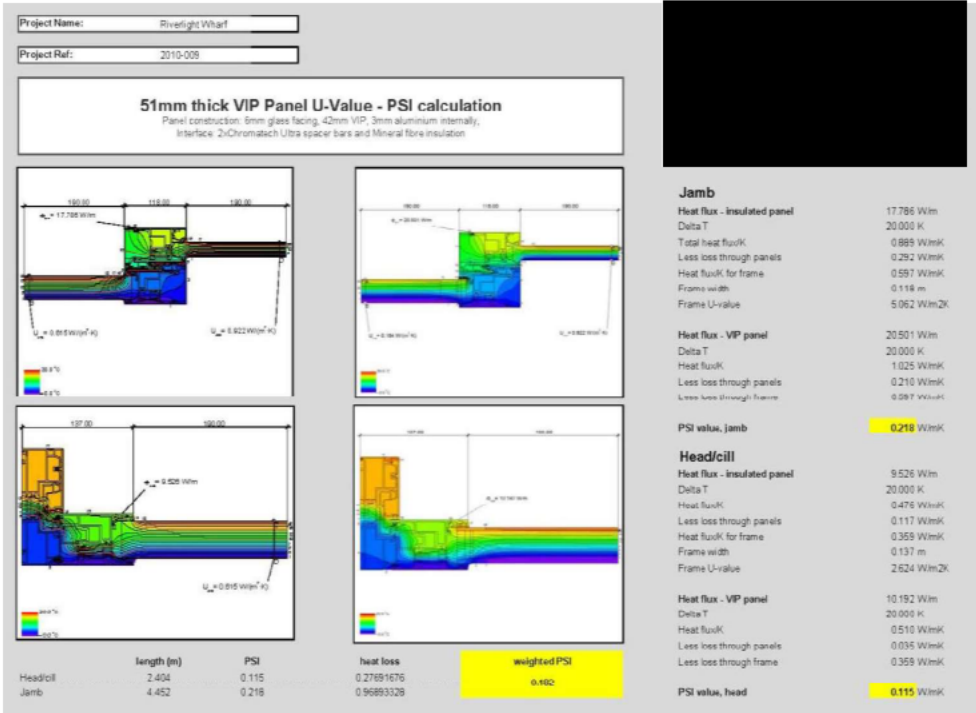


Competence	Evidence
A1	<p>As a façade engineer I need to keep up with the constantly increasing performance requirements for façade systems as regulations become more stringent and the performance requirements of the façade is pushed. This requires me to constantly keep in touch with new products that are on the market, via attending industry shows, such as Bau, in Munich; keeping in touch with new publications and journals, and also attending CPD's by various companies which are arranged by our company to update us on new innovations in the industry.</p> <p>While the façade is often seen as something which is designed to retain heat, the UK is not always as cold as the regulations may suggest. I therefore need to consider ways in which excess heat can be expelled, as well as considering potential ways that the façade can contribute to energy reduction. Some projects have considered integration of solar panels into opaque elements in the vertical façade. While this is of course technically possible, I have found that it is usually 'value engineered' out, due to the costs.</p> <p>Our company also sponsor PhD students and take part in Knowledge Transfer Partnerships with universities to carry out research projects. The findings of these collaborations are shared through our company for our improvement and also allow us to provide practical feedback to the students to aid in their work. A recent example of this is a student at Cambridge who we sponsored to research adaptive facades. This research looks at facades which are able to adapt their performance depending on the internal and external temperatures, so that the internal environment can be moderated without depending on services and energy use. The results of these studies are then shared with us so that I can use the knowledge going forwards on new projects.</p> <p>I have found in the year since the fire at Grenfell Tower, that many of the newer emerging technologies, particularly products such as high performing insulations, have not been used as wide spread, due to the potential fire issues. This is particularly an issue in a building which has a finished floor higher than 18M from ground level and is meaning that the wall depths are becoming much deeper and the thermal performance criteria set by the services engineer is more difficult to achieve.</p>
A2	<p>I was involved in the early development of the façade strategy on Riverlight, a residential development designed by Rogers, Stirk, Harbour and Partners in Nine Elms, London, which was very demanding in terms of façade performance, as it had a large number of penetrations through the façade. The majority of the façade surface area was constructed from sliding doors due to the access requirements. Typically a U value of 1.7W/m²K is possible with usual specification glazing, but in this case there was a requirement of 1.4 W/m²K to meet the energy strategy. I therefore worked with Dow Corning to incorporate their vacuum insulation panels into the cavity of double glazed units, which could be glazed into the doors. This dramatically reduced the performance below what could have been achieved with a typical insulated panel, and therefore meant that no changes were required to either the architectural design or the energy strategy. Part of this development included setting test requirements such as freeze/thaw cyclic testing to help see if it would perform long term and carrying out a thermal analysis to verify its performance.</p> <p>Once a project such as this is complete, and depending upon the type of client we are working for, I am often asked to carry out a return visit to site 12 months after practical completion of the façade. This would be to see that the façade is performing as intended and see whether there are any issues which need to be rectified.</p>



Competence	Evidence
	<div style="text-align: center;">  <p>Riverlight Blocks A - F</p> </div> <div style="text-align: center;">  <p>Typical Calculations Sheet for thermal analysis</p> </div>
<p>B1</p>	<p>As the Director responsible for liaising with clients to take new enquiries and provide fee proposals/bids for our services I need to be highly aware of the current and long terms objectives for the company. This involves knowing current personnel or departments which require further workload, and areas which we wish to progress further for company growth or increasing knowledge.</p> <p>As part of this role I need to understand where our company may add value to a project or particular client, and to suggest additional services which the client may not have initially been aware is required or would add value.</p>



Competence	Evidence
	<p>My role also requires me to be an ambassador for the company. As part of this role I attend conferences and shows to meet new clients, give presentations to potential clients on our company and its abilities, and also provide initial engineering advice.</p> <p>When I produce a fee proposal I consider the client that we are producing the document for, so that I can include information about the company ad past projects which might be of a similar construction, to demonstrate that we have the required skills and knowledge to help deliver a high quality and affordable solution for the façade.</p> <p>To aid in the flow of knowledge and also 'lessons learnt' throughout the various technical departments in the company we have monthly peer group reviews. Each group has a mix of consultants (senior through to junior), designers, and thermal and structural engineers to help see that a good mix of experience and variation in expertise is spread through each group. We discuss current projects that we are working on, any problems that we have encountered and any innovations or innovative solutions that we have worked on, so that it can be filtered through the group, up to the technical directors and then back down to the wider team as technical notes.</p>
B2	<p>My primary role at [REDACTED] is to receive initial enquiries from clients, discuss their requirements, provide fee proposals and convert them into instructions, to be allocated to engineers. As part of this role I regularly meet with potential clients to understand and interpret their requirements. As part of this process I often need to understand whether there are any other requirements, risks or opportunities in the project which may not have been highlighted in our original brief. I then aim to identify these risks and opportunities to the client, and demonstrate how we as a company would be able to use our key strengths to offer enhanced benefits to the client that our competitors may not have identified or may not be able to provide. This often involves providing early stage engineering and consultancy advice to the client to demonstrate our ability.</p> <p>I am currently providing pre-planning advice to a client who is developing a large residential scheme in South London, which includes a 46 storey high tower, in addition to a number of 6-8 storey mansion blocks and a hotel. I am liaising closely with the services engineer to develop the energy strategy based on the types of façade construction that is being considered. The tower is particularly challenging, because a unitised façade system is being proposed, which is note able to provide the high levels of thermal performance that the services engineer had originally considered. I have therefore had to carry out research into different types of system and what the maximum performance could be achieved, while maintaining the budgetary restraints.</p>
B3	<p>In the early stages of façade design strategies I would typically meet with the architect, building services engineer and structural engineer to discuss the performance requirements for the façade in terms of thermal performance, accommodation of movement and tolerance of the primary structure, acoustic performance etc. One of the main objectives that I am usually set by the client is a value engineering review of the façade. I will need to comment on how it will be possible to still maintain the required levels of performance whilst taking account of the architect's aesthetical requirements and the client's budget. This is a very important stage in the process and it is important to keep the key stakeholders engaged and on-board with the proposals, as if the budget cannot be adhered to then it may have a big impact on whether the project is financially viable.</p> <p>I then discuss these requirements with systems companies to understand whether they can achieve these requirements with their standard offerings, or whether they may need to engineer new solutions.</p>

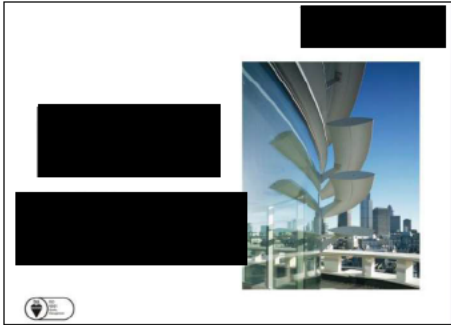
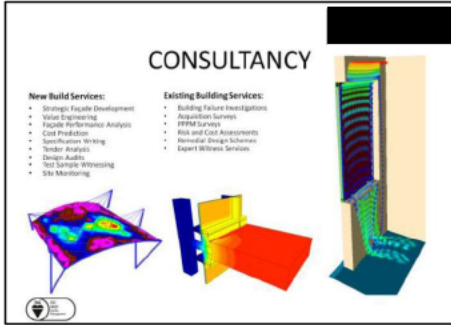


Competence	Evidence
	<p>As the project progresses a specification is written which outlines all of the performance requirements, and typically includes some systems that are able to achieve these requirements.</p> <p>I would then be involved in the review of the tender proposals made by the façade contractors to help see that the façade proposals that they have allowed for meet the project requirements. I provide feedback to the client via a report and also attend tender interviews with other members of the team to initially answer any questions they have about the project pre tender and post tender. I ask them about their allowances, and any questions related to their technical ability, programme etc.</p> <p>Once the façade contractor has been appointed I would usually be instructed to carry out a design review of the façade contractors detailed design. This involves reviewing the façade design against the specification in terms of weather and air tightness, thermal performance and condensation risks, as well as the structural integrity of the façade. We have engineers within our team that specialise in the thermal performance and structural engineering of facades, so typically they would carry out a detailed review of the reports and provide their comments for me to take into account alongside my general comments on the design to feed back into the professional team.</p>
C1	<p>Since the fire at Grenfell Tower we have been asked to carry out surveys of existing buildings to check their compliance with applicable standards and regulations, which often involves carrying out intrusive surveys of façade systems, to check the whole construction. Because I am involved in the very early stages of each project I need to be very aware of the processes that take place and regulations which need to be considered to carry out these investigations, both to make allowances in terms of costs, but also in terms of safety of our engineers. This will often involve engaging with contractors to carry out the removal of components, and also access companies to provide the required equipment. I need to be aware of the processes that will be carried out so that I can arrange for risk assessments and method statements to be produced and engage with the various stakeholders to ensure that the investigations are carried out efficiently and safely.</p> <p>In larger new build projects we are often employed directly by the developer and therefore I will need to understand the requirements set out in appointment documents to make sure that we have allowed for the works required in our proposal to enable us to meet them, while at the same time making sure that we meet the requirements of our PI insurer. This will often involve engaging with our legal department to understand any potential issues with appointment documents and then agreeing scope with the client to mitigate this risk.</p> <p>I am also heavily involved in the allocation of work to engineers within the company. I will therefore often take into account the ability of individual engineers when allocating the project, both to help see that they are able to carry out the required work effectively, but also to further develop their individual ability. As part of the allocation of new projects I would have a handover discussion/meeting with the engineer(s) to make sure that they understand the scope of the project, any key risks that have been identified, and any project specific issues that need to be understood.</p> <p>Once a project has been allocated to an engineer, I arrange for the project to be loaded onto our workload system. We use a system called Sage Construct, which allows the engineer to see what tasks are currently instructed and how much time in total is allocated for completing the task. As I or other members of the team complete elements of work, we can use an online timesheet system which updates Sage Construct with the time spent on each task/project. At the end of each month I can then inform our accounts department which elements of works are complete and they can issue invoices accordingly.</p>



Competence	Evidence
	<p>I am also often asked by other members of the team, particularly more junior staff, for opinions on technical problems or potential solutions, based on past experience or knowledge of a particular façade system.</p> <p>If there is an issue on the project, such as a problem with some of the work carried out by one of our engineers, or an issue on the project which cannot easily be resolved, I am usually the person that the client would call to speak to discuss the issue and resolve it as soon as possible. I will then very quickly review what the issues are, potential solutions and implement them so that the client is reassured.</p>
C4	<p>All of the work that comes into our business is based on repeat business and word of mouth. To ensure that we can maintain workload and also grow in line with our plan we need to ensure that we provide a consistently high level of quality.</p> <p>We have achieved ISO 9001 quality management with BSI, which includes a quality manual to set out procedures for all elements of our business. For enquiries it sets out how I should arrange for them to be recorded on our system, provide fee proposals and allocate for engineers to ensure that they are all actioned correctly and in an acceptable timeframe.</p> <p>The quality manual also sets out the procedure for carrying out our consultancy work including requirements for peer reviews by a senior staff member, and issuing to admin for formatting and providing document references. This all helps to see that we provide a consistent quality throughout the business. As I am the person primarily responsible for technical sales, I was heavily involved in the production of this section of the quality manual when it was originally produced, and I continue to provide input into the procedures as it is updated. I have set out the procedures so that they are easy to follow and therefore we do not need to stray from.</p> <p>As new issues are incurred by staff they are encouraged to discuss these in peer group meetings, so that they can be distributed through the company as a whole to further educate the team.</p>
D1	<p>My role is very client facing and therefore I need to be very efficient in my communications to demonstrate the benefit in using [REDACTED] for façade engineering services. Usually an initial enquiry will be via telephone call or an email, either directly to myself or through our enquiries page on the website. I speak to the client directly on the phone to initially discuss their requirements and request further information to aid in the production of a fee proposal.</p> <p>On many projects, particularly if they are of a large size and need to be discussed further I will arrange to meet with the client at a suitable time and location. I would typically send a meeting invite via email so that we have firm plans set. I will set an agenda to discuss the project as well as discussing the requirements of the project or the services that the company is able to offer.</p> <p>Upon my return to the office I will provide any initial feedback and commentary that we may have made with regards to the technical performance of the façade and then issue a formal fee proposal. This is issued either in letter format or a full fee proposal document, including supporting information, such as the proposed team, PI insurance certificates etc., depending upon the project size and requirements.</p> <p>Once the proposal has been issued I will liaise with the client to see that the proposal meets their requirements and make any clarifications or adjustments that may be required. I then enter into any negotiations regarding costs or allowances, and agree our final scope.</p>



Competence	Evidence
	<p>Once the project has been allocated to an engineer I will arrange a handover meeting with them so that they can understand what the project requirements are, the services that we are delivering and any immediate deadlines that there may be. On larger projects I will also usually attend the first meeting to introduce our engineer to the team and be on hand to address any initial comments.</p>
D2	<p>As part of my role in the early stages of enquiries and projects I will often provide presentations to companies, either project specific teams or companywide. This will usually involve discussing the experience and ability of [REDACTED], which is often customised to suit the particular project or company that we are presenting to. When we are presenting to a team for a particular project we will often have carried out an initial review of the façade and identify key risks and opportunities that the project faces. We will therefore include these in our presentation and discuss with the team how we could enhance the project.</p> <p>Once I have issued proposals for various projects we have a process for following up on our proposals. If we are unsuccessful with our bids we will ask for feedback so that we can further improve our future fee proposals.</p> <div style="display: flex; justify-content: space-around; align-items: center;">   </div> <p style="text-align: center;">Typical Slide From Presentation</p>
D3	<p>Much of the success that I have in the commercial element of my work is being personable and being able to understand and communicate with the client effectively to demonstrate that we will be able to provide the required services in a professional but approachable manner.</p> <p>When we discuss a new project and the challenges that it faces I need to be able to listen to concerns and the services or solutions they believe will be required. I then very quickly need to react to reassure them that I appreciate and understand any issues that there may be, and be able to discuss and demonstrate how we are able to provide services to meet their needs.</p> <p>In the early stages of a project I will usually write a letter to the client which outlines a summary of their requirements or concerns and then demonstrate in a clear and concise way how we will achieve this.</p> <p>Once we are engaged in the project, and as I work with other members of the team, I will often correspond with them via email and provide memos and reports based on the findings of our engineering work.</p>
E1	<p>As an engineer providing consultancy services to clients I need to be fully aware of and comply with all of the relevant codes of conduct. Many of the codes of conduct as set out by CIBSE are relevant throughout the construction industry as a whole.</p>



Competence	Evidence
	<p>As a key person in our company who meets decision makers in large companies I need to conduct myself in a professional manner. One of the very important points that I need to consider is that we always need to provide fully independent advice to our clients, and cannot be influenced in the opinion or advice that we provide. This can sometimes be due to not wanting to provide bad news to a client, but also can sometimes be due to pressure from other team members who do not want an issue to be raised and will try to suppress this.</p> <p>When I discuss new projects with a client I always consider whether we are honestly able to provide the required services to the best of our ability, or whether the services are outside of the company's field of knowledge. There is of course some occasions when there are particular tasks which we have not completed before, but I need to assure myself that we will be able to diligently research the requirements and procedures and then carry it out with all the skill and care that is expected of us. If there is an instance where I do not believe that our team is able to carry out the works to this high level then I will need to inform the client so that they can arrange for the task to be completed by a more fitting engineer/company.</p> <p>As the façade engineering community is still relatively small when compared to other areas of the construction industry I use my position in the company to promote façade engineering as a discipline in its own right. I am heavily involved in promoting the façade engineering industry through my Membership in the Society of Façade Engineering within CIBSE, and being a board member with a key role in promoting the aims of the society to members of the façade community.</p>
E2	<p>Many of the façade engineering services that our company carry out can put a higher amount of health and safety risk on our staff, as we are often asked to visit active factories and building sites. I therefore have to consider the safety of our staff as our main priority when I provide fee proposal to clients.</p> <p>When buildings are under construction there are of course many safety precautions that are taken by the main contractor to protect workers and visitors to site. However, we also attend a number of occupied buildings to carry out condition surveys, water ingress and detachment investigations. These very often involve using access equipment that we need to arrange ourselves as well as sometimes using contractors to aid in removing components. Therefore I need to be very aware of what we are allowed to safely do, and therefore what services I can offer to clients.</p> <p>All of the works that I would arrange in these circumstances would have a risk assessment and method statement produced prior to arranging for an engineer to visit site. If required, I would arrange for the access company to visit site and carry out a review of the building and the company before they confirm the equipment that they plan to use and this would be issued to the client along with safety records for lanyards. While we have a dedicated person within the admin team in [REDACTED] who produces the RAMS for all of our projects, it is key that I provide input into any initial concerns or risks that I have determined during my involvement in the early stages. I will relay this to the member of our team, so that they can incorporate the these risks and note any PPE or other requirements.</p>
E3	<p>The vacuum insulated panels integrated into glazing units which I played a key role in developing for the Riverlight project greatly reduced the energy load on the building, by increasing the U value to a level which previously had not been possible with the type of doors which were required to meet other performance requirements, such as weather tightness and access. To camouflage the vacuum insulation panels, a ceramic frit was applied to the inner face of each of the panes of glass.</p>



Competence	Evidence
	<p>The opaqueness of the unit reduced the solar gain into individual apartments, which helped to reduce the risk of overheating and therefore negated the requirement for any comfort cooling. This in term reduced the energy requirements of individual apartments further.</p> <p>The cost and programme time for developing the new panels in time to meet the project deadlines needed to be considered and therefore I had to discuss with the developer the costs and risks that would be involved in progressing this solution, against other potential solutions which may have had a negative impact in terms of aesthetics or additional performance requirements on the M&E equipment.</p>
E4	<p>As the technology in facades is constantly changing, and the performance requirements increase (particularly thermal performance), we constantly need to keep in touch with developments in the construction industry.</p> <p>Our company provides lunchtime CPD sessions most weeks, which are used by companies to present their new products, experts providing presentations on a particular topic, or even internal staff giving presentations on past projects, lessons learnt etc.</p> <p>I read industry publications to keep in touch with news, and also attend seminars and exhibitions to see what is new.</p> <p>I am a Member of the Society of Façade Engineering within CIBSE, being a board member who looks after the other regions outside the UK (mainly Hong Kong and Dubai, currently). I use this position to promote façade engineering as a whole to other engineers and clients that I meet.</p>
E5	<p>As a company who provide independent technical advice to clients there are a number of situations when I need to be aware of our ethical duties. When I or other members of the team are carrying out reviews of façade contractors works we can be pressured by the main contractor to not provide our honest opinion.</p> <p>There have also been situations where we as a company have been involved in the original construction of a project and I am asked to provide services such as condition surveys or fault diagnosis on the building after it has been commissioned.</p> <p>I therefore have to carry out conflict checks on our system and make clients aware of any previous involvement so that this does not cause issues later on.</p>



Short Term Goals

My short term goals are to become a Fellow within the society of Façade Engineering, as well as achieving MCIBSE and Chartered Engineer status, as I believe that this will show demonstrable status alongside my recent promotion to Director at [REDACTED]. Once I have achieved this I plan to help other Façade Engineers to achieve Chartered Engineer status, through my involvement in the Society of Façade Engineering. This has been a goal of the board for a number of years, which has not progressed much until my involvement.

Medium Term Goals

My medium term goals are to become more involved in working on live façade engineering projects past the initial involvement. In recent years, with the company growing and becoming busier, much of my time has been dedicated to the early stage commercial side of the business, which has not allowed me to stay as involved with the projects as much as I would have liked. Now that I have another person supporting me in this role it should allow me to become more involved and keep up to date with current façade engineering practices.

Long Term Goals

My longer term goals are to become more involved with the Society of Façade Engineering and help to publicise the works that they do. All of the current board members dedicate their personal time to helping support the society, which can often have obvious effects in terms of timeframes. As the board member who looks after the regions (particularly Dubai and Hong Kong), I would hope to be able to visit these areas, as well as help to develop further chapters in other countries, to help grow our membership.