

CAREER REPORT

My career started at the age of 17 at [REDACTED] as an apprentice plumber. After completing my 4 years apprenticeship at [REDACTED] in Bangor North Wales and receiving my NVQ Level 3 in Mechanical Plumbing Services, I went on to obtain my Non-Domestic Gas Pipework Installation and Commissioning, Warm Air Heating, Water Boilers, Oftec Licencing for Oil installations and Servicing, Logic Certification for Solar Thermal and Ground Source Heating Installations and Maintenance.

In March 2014 after 9 years with the company, I started work for [REDACTED] where I am currently a Mechanical & Electrical Building Services Technician. In September 2014 I started my HNC in Building Services in The City of Liverpool College which I am due to complete in July 2016.

The experience from my previous employer I think has helped me in my new role as I can understand and appreciate how everything will work on site whilst during the design stages of a project. The help from my colleagues has been incredible, their knowledge and experience in Mechanical and Electrical services has been a great support for me whilst starting out a new chapter in my career.

Over the next few pages I have detailed some of my projects which I have had the pleasure of working on whilst describing my roles in conjunction with the competence criteria L21.

SYR HUGH OWEN HIGH SCHOOL, CAERNARFON, NORTH WALES- RENEWAL OF LTHW SYSTEMS

This project was for [REDACTED] and consisted of designing 2 new LTHW systems complete with new boiler rooms and connecting existing 5 boiler room controls to a BMS system.

Even though the project was large, the original time schedule was still 6-8 weeks so as to have access to the entire school without the pupils and staff being on site. As a design team, we sat down to discuss options and ideas of how the project was going to progress effectively.

Eventually, as a team we came to the decision that if properly run and planned the main LTHW systems could be installed throughout the building during the 6 weeks summer holidays. This meant we could then give the successful contractor 2-3 weeks during term time to finish the boiler rooms as the pupils and staff would not require access to these areas.

After receiving all building layout drawings, I carried out surveys to confirm the layouts where correct and suitable to use.

Using the drawings I was able to carry out manual heat loss calculations for the building so as to design the new LTHW systems. Upon completion of the calculations, I could then start the LTHW layouts and with manufactures literature specify the equipment ready to collect for the tender process. If I didn't correctly select the radiators, boilers, pumps etc for the installation then the overall performance of the systems could be far from what was needed, this could range from the required temperatures not being reached or from the boilers short cycling. Either outcome would have a detrimental effect on the efficiency and running costs for the end user.

The tender process involved me receiving the contractors list from the clients and sending the tender package out on eTender. This is a new system for us as a consultancy, and eliminates the need of numerous paper copies being sent to contractors. When the tenders were received I collated all the results and produced a tender report which I could then present to the client for their approval.

When the successful contractor was informed, I arranged the pre start meeting with them along with the principle of the school and their business manager. During the project I also ran progress meetings to assess the progress and quality of the project, taking minutes which were then distributed to whoever was unable to attend.

During the project some issues came to light regarding pipe runs, these were overcome by site visits with the contractors foreman and together, coming up with alternative solutions to overcome the problems. Working proactively on such issues, the completion date was not affected.

Upon completion of the project, the contractor handed me all relevant O&M Manuals for the project for me to check the relevant information and certificates were present.

Overall, this project was a great success and gave me valuable experience from the initial client brief stages of the project to handover of the systems to the end users.

BLUE PERIS MOUNTAIN CENTRE, DINORWIC, NORTH WALES – REFERBISHMENT OF BUILDING

This project included the complete refurbishment of a building used by schools and clubs for activity weekends/weeks. My role on this job was supervisor for all mechanical works. This involved overseeing 4 qualified fitters and 2 apprentices.

Due to the busy schedule that the centre has, from the outset it was made clear from the client the proposed work would have to be undertaken following a very strict timescale. Any delays could result in the centre closing for longer than expected and therefore loss of potential income.

During the construction stages of this project, even though I was working on site daily, I would also have to do 'walk through' progress meetings with the client and main contractor. In these meetings, I would be responsible for keeping all parties up to date with our progress with the job, taking instructions for variations, answering any queries/questions and provide information on expected progress and areas of work. All information gathered in these meetings was recorded and noted so as all relevant information could be passed on to my superiors and effected staff on site.

Due to unforeseen circumstances, whilst builders where on site in the early stages of the project, the architect had to make changes to the overall layout in the building. This had an effect on the final pipe runs I was due to install. Between myself, main contractor and the architect we came up with solutions for new runs and positions. Initially, these where discussed on site with verbal conformation given there and then. Later that day, these where backed up from emails between the 3 of us with variation orders attached.

Due to these changes, I had to evaluate the effect this would have on the work programme I had originally set. After careful consideration, I concluded that I would need additional labour on site if we to keep to our strict deadlines. However, with extra labour came extra cost. I calculated the cost implications of the additional labour and emailed to the main contractors who then agreed the additional charges and instructed the extra work to continue. With these issues being found early on, we were able to carry out the rest of the work on time as originally agreed.

Upon completion of the works, I informed the boiler manufactures that their equipment was ready to be commissioned. When these works were completed, and all relevant paperwork including the commissioning certificates where handed over, I was then able to prepare the O&M Manuals ready for handover.

Part of the handover process was giving information and demonstrations to the end users of the building which I undertook myself. This was done over 2 meetings with 2 separate groups.

MY DAY TO DAY LIFE AS A BUILDING SERVICES ENGINEER

As my current role as a building services engineer, I regularly try to better my knowledge in this field, in particular, but not restricted to, M&E. Due to my past experience in mechanical installations I do think I have a good understanding and knowledge in this field. Even with this experience, I know that I still have a lot to learn and take in. This is why that at any chance I get I try and attend CPD's in this area. I think myself lucky to be also carrying out electrical design, all be it on a small scale for the time being. I have tried to throw myself into electrical design by learning how to use Dialux Lighting software and more recently Dialux Evo.

I plan to continue to attend every CPD I can. As I work in a multi discipline consultancy, various CPD's are arranged. These can include new building products, roofing systems, glazing and many more. I find that even though they are not directly involved with M&E, they are still important to attend as it gives me more understanding of what's happening on the sites I visit and work on and helps me understand why certain decisions are made.

During the planning stages of a project, I assess the Health and Safety issues that could arise by means of Risk Assessments. These will then be part of the Health and Safety File which complies with the current CDM Regulations which is then handed to the contractor's. When projects get to the construction stages, I regularly meet with contractors to help advise on health and safety issues by either checking method statements or undertaking walk through visits on site. With my previous experience, and after completing the IOSH-Managing Safely course, I think I have a good understanding and knowledge of what risks are, and how they are able to be controlled.

When I first started my current role, I was advised by colleagues about CIBSE. After first becoming a student member last year I was talked through the CIBSE Code of Conduct, which I abide to at all times.

In every design I work on, one of the main considerations is sustainability of the proposed system. I try thinking of the future impacts of the system. This ranges from the day to day running costs to the maintenance requirements needed for plant. I have found that using Revit modelling, issues around maintenance requirements can be resolved during the design stages much easier than using software such as Auto CAD.

With some designs, I have to think about the environmental impact as some plant has to be installed within close proximity of domestic properties. These mainly occur around AHU units for school canteens. During these design stages, I visit site to evaluate the most suitable locations for plant equipment which will reduce the effect not only around aesthetics but noise pollution as well.