

Section F: - Stage 1 - Educational Standards

The educational experience and underpinning knowledge is based upon CIAT Accredited Honours and Masters Degrees and as such holders of these awards are exempt from this section as having achieved the necessary standard through study. However, those applicants who do not possess an Accredited award must demonstrate how their educational awards and/or experience satisfy the *Educational Standards (Stage 1)* listed **within the Professional Standards Framework**.

The summary should specifically relate to the discipline of Architectural Technology and must consist of at least 3000 words but no more than 5000 words in total and provide references to any relevant supporting evidence that demonstrates your knowledge.

If you have a CIAT Accredited Honours or CIAT Masters degree you are exempt from this section.

My formal education relating to Architectural Technology began with undertaking an apprenticeship at the **XXXX** College of Further Education. The apprenticeship was a 3-year course, on day release from work one day a week to study and resulted in me gaining a BTEC Level 4 HNC Diploma in Construction and the Built Environment (with Distinction). This qualification was started in the academic year of 2012 and completed the end of academic year 2015. The course, whilst not specifically directed at Architectural Technology, covered a wide range of modules that are very applicable to the profession, and gave me robust understanding to the construction industry as a whole.

The course covered the following modules in the syllabus:

- Science and Material for Construction & the Built Environment
- Applied Mathematics for Construction & the Built Environment
- Construction and Maintenance of Buildings
- Environmental Impact of Construction
- Site Surveying Procedures for Construction & the Built Environment
- Design Principles and Application for Construction & the Built Environment
- Group Project in the Construction Industry
- Health, Safety and Welfare for Construction & the Built Environment
- Management Principles and Application for Construction & the Built Environment
- Technology of Complex Buildings
- Law and Contract for Construction & the Built Environment
- Contractual Procedures for Construction & the Built Environment

During my apprenticeship, the knowledge gained at college was reinforced by my work-place experience, which allowed me to practice much of what I had learnt. Over the years I have greatly developed my expertise working as an architectural technologist and through involvement with a varied range of projects.

A systematic understanding and critical awareness of topics which are informed by the subject of Architectural Technology.

Studying for my HNC diploma, gave me a comprehensive understanding of the topics that are informed by the subject of Architectural Technology. Modules covered in the curriculum gave me an awareness of the considerations and methods involved when designing a building, by studying and analysing topics such as economical and environmental design, adapting and conserving buildings, aesthetics, and functional requirements. All these principles were then strengthened with studying the technology of complex buildings. This enhanced what I had learnt regarding how environmental and economical construction can be achieved, in addition to

expanding my understanding of how to meet the requirements of a client brief and technologies that help to achieve the best results.

Throughout my employment I have reinforced these topics of understanding whilst working on many different projects. I am currently involved with a project that required me to adapt an existing house which was thermally inefficient and did not meet the clients 'family home' desired standard and change it into a modern and efficient family dwelling. It was important to consider the existing dwelling and what would be achieved in retaining as much of the original fabric as was reasonably possible, and how modern building regulation standards could be achieved without compromising the client's budget and quality of the overall project. As part of the scope of works the remaining existing structure was upgraded so each element would meet acceptable U-Value standards. This was achieved by applying an insulated render system to the external walls, upgrading the roof insulation including insulated lining board to the ceilings, and installing insulation within the existing dormer. To ensure the new scheme was as simple and economical as possible, the new structural elements were designed in timber. The oil tank and boiler were removed and replaced with an electric system which will run efficiently within the new/upgraded building envelope.

A critical awareness of the history and context, and the political, economic, environmental, social and technological aspects that inform and influence the practice of Architectural Technology nationally and internationally.

Throughout my course I was made aware of the contributions that the construction industry makes to the economy, along with employment figures that the industry generates. A historical review of the background behind the creation of the planning service and building regulations was also taught. In addition, I ensure that I keep myself informed with relevant targets that the local and UK governments set for the construction industry.

Throughout my formal education and workplace experience, the environmental impact of the construction industry is regularly discussed. It is becoming more prevalent to reduce waste during the construction of a project, and ensuring site procedures are in place to help minimise waste and recycle the maximum amount. Not only are site procedures becoming more environmentally conscious, but also the systems that are specified. Clients are more frequently requesting that their house has minimum impact on the environment and uses minimal fossil fuels. As an architectural technologist it is prudent to remain aware of what technologies are influential. The environmental aspect of the industry also ties in with the technological aspect, as technology advances the environmental repercussions should be reduced. Regularly attending CDP seminars is a suitable way to stay up to date with recent products and what standards they are achieving.

The social aspects of architectural technology and how the quality and design of buildings can affect their users is ever pertinent. The quality of the space is relevant to the enjoyment for the users. It is important to have a feeling of inclusion within society, emphasising the importance of researching and understanding what exactly need to be achieved from each project to make it as successful as possible. The derelict social housing projects in the UK (e.g. XXX or XXX Gardens) are a stark reminder of the importance of understanding the requirements of the building users, as only now are the failed projects being regenerated to a more effective purpose.

The industry is continually influenced by society and its changing needs. I therefore try to remain up to date on current industry related issues by reading relevant articles and publications, following the news and current events and having discussions with my peers.

An ability to problem-solve and to identify appropriate methodologies to deal with complex problems and realise design into built form through the generation of detailed design solutions that respond to familiar, unfamiliar and unpredictable situations.

Within this profession I feel it is vital to be apt at problem solving. Every project undertaken has different criteria that needs to be met and different issues that need to be resolved. Problems can arise at any stage of a project and it is necessary to work out how best to resolve them without compromising.

An example of problem solving in my current employment at **XXXX** Architects is on the extension and refurbishment of an existing house that I am working on. Once the planning statutory approvals has been obtained by the design architect, I was tasked with creating the technical drawings for the building control package, I had to consider how the existing ground floor construction would be treated in order to bring it up to suitable u-value standards, whilst addressing changes in floor level and tying it into a new extension. I originally thought that specifying insulation board with a ply decking to the top would be sufficient and packing out for extra depth in the areas of a different level to make the floor all one level. However, the change in floor level due to the additional insulation would have resulted in lower head heights to the ceilings and door frames. Connecting the two different floor constructions would have posed an issue also, due to the slabs being at different levels. Further to this, keeping the existing floor construction meant there were issues bringing out the proposed bathroom drainage. The cost associated with connecting the new and old slabs was also deemed very costly considering the size of the proposed footprint.

As a resolution to all these issues, I proposed that it would be more efficient to remove the majority of the existing ground floor structure and construct a new ground floor using beam and block construction, with insulation and screed to finish. This would eliminate the mixture of constructions and create a singular thermally efficient structure. Using beam and block construction also eliminated the drainage issues as all the pipework could be dropped down into the void below and easily connected into the existing drainage run. The new floor construction would also eliminate the reduced ceiling and door heights as it would be constructed to match the existing finished floor level. It was also considered that constructing the floor using this method would be as cost effective as the original method yet yield greater results.

An ability to successfully complete substantial sustainable and inclusive design and research projects, systematic review or systematic case study informed by wider current understandings in the subject.

Whilst at college I was tasked with taking part in a collaborative group project. The brief was to design a new workshop block for the **XXXX** College of Further Education, on an existing site with certain limitations. This project expanded my knowledge on understanding the principles and techniques involved when developing a project. The condition of the existing workshop block on a different campus was condemned and we as a group were to act as a project management team to provide a package for the new workshop.

As part of the project I had to undertake a detailed review of the existing facilities that needed replacing, along with collecting information on what was required for the new building. With this information I was able to create a comprehensive client brief for us to work from. It was also important to analyse the new site where the proposed workshop would be built. I carried out a thorough site survey, to identify potential site restrictions and issues, allowing us to identify the most suitable place for the workshop to be built, and the topography that would affect the design process. We then compiled all our information into a feasibility report that assessed our findings and suggested our best solution for the project. With all our collated data we were able

to create a concept design, detailed drawings, program of works and performance specifications. Being part of the design and research project developed by ability to evaluate and resolve practical problems, as well as strengthen my ability to work as part of a team.

An awareness of building elements, components, systems, and methods used for different building typologies.

My studies at college gave me a well-rounded understanding of typical building elements and methods that are frequently used in the construction industry. In the final year of my time at college I also studied more complex building techniques, including steel frame and concrete frame structures, piled foundations, and basement construction.

Throughout my time working in the industry I have continually progressed my knowledge of building elements, components, systems and methods. From my initial construction and specification documents detailing relatively simple structures, to progressing and expanding my knowledge working on many more complex and unusual projects that require research into alternative or creative methods of construction.

Recently I have been involved in a variety of projects that offer many different elements and methods of construction. One of which involves the refurbishment of a dilapidated barn into habitable accommodation. As part of this project I was tasked with detailing the construction drawings and specification documents for Building Control approval. The construction elements and systems involved included suspended ComFlor construction at first floor level, internal tanking and a 'floating' staircase achieved using a steel frame clad in reclaimed timber, to name a few.

Alternatively, another residential project that I am currently working on involved specifying insulated timber frame construction, beam and block ground floor construction, and an external insulated render system to the existing external walls.

An awareness of current topics and practices which inform the discipline of Architectural Technology including new and emerging technologies.

Since the start of my career I have been attending CPD seminars, which are informative of the latest specifications of products and assist in keeping my knowledge up to date. In addition, many of the projects that I have recently worked on involve the specification and use of new technologies. Researching the correct technologies to use on a project will expand my catalogue of information regarding current topics and practices, and also make me aware of what systems or practices may be useful for future projects also.

To ensure that I remain aware of current topics and practices, I keep up to date with relevant literature and publications. The CIAT website and newsletters are a useful way to see what current topics are affecting the industry, and also see what new technologies are emerging.

An awareness of project and design management, project procurement and process, construction and contract management.

Whilst at college I studied modules in Management Principles, Law and Contract, and Contractual Procedures and Procurement. The Management Principles module gave me an overview of the RIBA Plan of Works, and also an insight into project management, the role of a project manager, the best type of procurement method for a project, and how the timing of a construction project can be planned.

The Law and Contract module covered the understanding of the principles and procedures of law as applied to the construction and built environment sector. It gave me an insight into the liabilities of different parties to construction contracts, as well as the roles and responsibilities of the parties. It also gave me a foundation knowledge of the legal principles and requirements used when undertaking construction projects.

The Contractual Procedures and Procurement module gave me a knowledge of the roles, responsibilities, and activities of the parties and organisations involved in contractual procedures and procurement of building projects. I learnt an understanding of the various procurement methods, and what circumstances they are used in. The importance of understanding who the client is, and what they want to achieve, and the best methods to use to achieve the desired results. The main elements of a construction project that need to be managed during the contract period. Understanding the tender process and the different types of tendering available. In addition, what types of contract are available and the type of project they are suitable to be used on.

During my previous employment at XXXX Design, I undertook a contract administration project. It was to see through the construction and completion of a small domestic extension, providing a new kitchen. I had produced all the planning and building control drawings to gain the necessary statutory approvals, and the client wished for the project to be carried out with a contract administrator. I produced the tender documents, and used the traditional method of tender, to gain competitive quotes from a selection of different contractors. Once the completed tenders were received back on the deadline date, I carried out a tender analysis to ensure there were no discrepancies, anomalies, and all suitable provisions had been made. I then presented the client with this information, so they could make an informed decision as to which contractor they would like to use. Once a contractor had been selected, I then had to compile all the contract documents, the contract used was a JCT Minor Works Contract.

Throughout the contract period it was my responsibility as contract administrator to carry out monthly valuations, resolve any issues raised, issue extensions of time as was deemed necessary, and add and omit certain elements from the valuations as agreed with the client and contractor. Upon completion of the build I had to issue a practical completion certificate and final valuation. There was a six-month defect liability period, at the end of which I carried out snagging on the construction work and issued a list of items to the contractor that needed to be rectified before the final 2.5% retention money was released.

At my current place of employment, XXXX Architects, I have been involved in assisting with the management of projects on site, my tasks include creating detailed drawing packages as required for the contractors when they need additional detailing, attending monthly progress meetings and taking minutes, being involved with the completion of the interior finishes and organising meetings with the necessary parties to ensure all finishes are completed.

I have also recently created another tender package for an upcoming project and submitted them to four contractors for traditional tendering. Upon receiving the prices back from the contractors, I have carried out a tender analysis and issued the information to the client for them to review.

An ability to identify hazards and risks and develop and maintain safe systems of work and legal and relevant legislation and regulatory frameworks.

During my time at college, I studied a module on Health, Safety and Welfare for Construction and the Built Environment. This module developed my understanding of health, safety and welfare

legislation, and also effective health and safety policies relevant to the industry. In addition, I was brought to my attention the responsibilities of parties for the health safety and welfare of others. Through my studies I learnt how to identify risks and hazards, and how to review, revise and monitor the risks and hazards, in addition to undertaking a risk assessment.

I feel it is very necessary to remain alert and educated on what the latest legislation is regarding health safety and welfare, as the industry can be considered rather hazardous. In addition, new construction technologies and methods will always be creating cause for change in the way we assess risks and hazards, and the way that we respond to them.

An ability to develop critical discussion and analysis of complex concepts and to work independently with some originality and as a member of a team identifying personal development needs and to plan to meet these needs through relevant and appropriate methods.

Throughout my career so far in Architectural Technology, I have been involved in many projects that have required me to work as part of a team, and independently. Currently I am involved in a collaborative project that involves heavy input from both the design team, the structural engineers and the technical team. It is necessary for all teams involved to regularly discuss progress and any potential set-backs in design or detailing, to successfully progress the project and obtain the best results. Working successfully as a team is essential as the thought processes and discussions can lead to the most successful results.

I have also previously worked independently on projects. One of which was the phased planning and building control approvals of a heavily listed farmhouse. It was necessary for me to liaise with the heritage, planning and building control departments frequently to understand what restrictions the dwelling gave and how best to achieve a successful result. In addition, I had to take into account the expectations of what the client wanted to achieve with their home and balance the needs of both parties.