SUBMISSION

ENERGY TRADES AND WATER CENTRE OF EXCELLENCE
TasTAFE

February 2021

SUBMISSION TO THE PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS

Contents

1. EXECUTIVE SUMMARY

TasTAFE is presenting this submission to the Parliamentary Standing Committee on Public Works for approval to construct the Energy Trades and Water Centre of Excellence (ETW CoE) on vacant land situated at the TasTAFE Clarence Campus, 4 Bounty Street Warrane. The site is currently owned by TasTAFE and the ETW CoE will serve the trades-based industries growing demand for apprentice and short course training into the future.

The objective of the project is to deliver an Energy, Trades and Water Centre of Excellence development at TasTAFE's existing Clarence campus. The Energy, Trades and Water Centre of Excellence is co-sponsored by industry and will deliver an innovative teaching and learning facility that meets the needs of the Plumbing and broader Water industries, together with Electrotechnology training and the merging industries of renewable and alternative energy (such as Hydrogen). The Centre will provide an environment where innovation and latest technologies are showcased and available for teaching, learning, demonstration and applied research.

In this facility, we will provide pre-vocational, apprentice and higher-level vocational education qualifications in line with industry workforce development plans to skill and up-skill new and existing industry participants. Details of what will be delivered are in the attached Education Plan included in Section 8 Attachments of this submission. We will also explore higher education opportunities and develop examples of how applied research can evolve through innovative partnerships with the University of Tasmania (UTAS) with the aim of supporting combined micro-credentials and higher education qualification outcomes. The Centre of Excellence will also ensure there are multi-directional articulation pathways between vocational and higher education qualifications (Developing a Smarter Nation).

The Centre will highlight the latest sustainable water technology, collection techniques, recycling, storage and infrastructure design and use. It will also facilitate the convergence of many of the trades, in particular plumbing with electrotechnology, and water with aquaculture and agriculture as the Clarence Master Plan progresses. These areas will complement the trades already delivered at the Clarence site, including construction and allied trades.

The Centre will deliver training in new technologies such a polymer processing, irrigation scheme design, general water infrastructure design and construction, Hydrogen, and wastewater management.

The Centre aims to be the very best in the nation, attracting students and industry from the southern states to Tasmania to train in water technology, sustainability, and infrastructure development. Southern Australia, with its cooler climate, has a range of specific complexities to manage regarding water and wastewater. Tasmania provides the ideal location for teaching to address these specific issues.

Funding of $21 million has been allocated for the project and covers both the construction and non-construction costs, which includes architectural fees, furniture and equipment and IT plus an $80,000 public art works component. Funding has been allocated across two years 2020-22.

In summary, the Centre will provide additional capacity for the expected growth in plumbing, refrigeration, mechanical services and electrotechnology related trades over the coming years. This facility will achieve this by providing a modern and efficient state of the art building**.**

This new facility will replace TasTAFE's ageing plumbing training centre located at the Claremont College school campus, and the existing aged electrotechnology training facility in TasTAFE's Campbell street campus.

2. INTRODUCTION

2.1. Purpose of this submission

The Commonwealth and Tasmanian Governments have committed $7 million and $14 million respectively to build a contemporary, fit for purpose ETW CoE, that will accommodate the combined training needs of:

- The plumbing and mechanical services industries
- The electrotechnology industry
- The emerging industries of renewable and alternative energy sources

The purpose of this submission is to seek approval from the Parliamentary Standing Committee on Public Works for the development of a ETW CoE located on a greenfield site at TasTAFE's Clarence Campus at 4 Bounty Street, Warrane. The development will see the expansion of the existing campus facilities in expectation of increased apprenticeship intake commencing 2023. This exciting development represents a first in Tasmania to align the changing industry technology into a shared purpose built complex, that will provide access to contemporary educational facilities now and into the future.

The submission is presented at the schematic design phase and illustrates how the functional layout has taken full advantage of the site. The building design framework ensures the ETW CoE is fit for purpose and will cater for the individual and combined needs of apprentices and industry.

3. PROJECT OVERVIEW

3.1. Project Background

Master Plumbers Tasmania and other relevant industry stakeholders identified (through an independent audit) that the current plumbing, air-conditioning and refrigeration, and water training facilities in Tasmania no longer meet the needs of industry or meet the standard industry requires. The existing facility at the Claremont college school campus in Southern Tasmania on the outskirts of Hobart was built in 1980 and has not been updated. The current infrastructure does not provide a contemporary teaching environment, nor does it have the latest industry technology that mirrors innovations within the sector. The Electrotechnology training facilities at TasTAFE's Campbell St campus are similarly over 30 years old, with the equipment well overdue for replacement.

In late 2017, the Master Plumbers Tasmanian Education Committee decided to centralise all apprentice training in the South of the State and to support the concept of a single Energy, Trades and Water Centre of Excellence in a new purpose-built facility at our Clarence campus in Hobart. Master Plumbers sought the support of the other industry stakeholders for this project. A plan was developed and delivered to the State Government for funding. The Minister for Education, Jeremy Rockliff MP was supportive and met with industry and TasTAFE to discuss the vision for the new Centre. After initial discussions, the brief for the new Centre of Excellence was extended to cover other industry areas such as the Aquaculture Industry, Irrigation and a broader approach to water infrastructure management and training. An initial commitment of $7M was made in the 2018/19 Tasmanian State Budget. A further $7M was allocated to the project in the 2019/20 Budget to cover the specialist fit our and equipment requirements.

In July 2020, the Minister for Education together with Senator Jonathan Duniam, visited the Campbell St Campus to announce a further a further $7M as part of the Commonwealth Government's "revitalising TAFE campuses Across Australia" program to incorporate Electrotechnology into the new Centre of Excellence at Clarence. See attached letter from Senator Michaelia Cash in Section 8 Attachments

In October 2020 the ETW CoE Project was declared to the Commonwealth Department of Finance, who advised the project does not require referral to the Commonwealth Parliamentary Standing Committee on Public Works. See Appendix A – Commonwealth PWC Clearance

Consequently, TasTAFE proceeded with the submission to SkillsTas as provided in Section 8 Attachments titled 'REVITALISING TAFE CAMPUSES ACROSS AUSTRALIA_Project Template_v2.pdf'.

The development of the Energy, Trades and Water Centre of Excellence requires the construction of a new building and a full upgrade of teaching technology, resource infrastructure and equipment to showcase the latest industry practices and requirements.

The recent addition of the electrotechnology training has been well supported by National Electrical and Communications Association (NECA).

The initial project cost has been estimated at $22.5M (Clarence Master Plan quantity surveyor estimate). Project funding is made up of $21M in government funding as detailed above, together with $1.5M contribution from industry (through cash and in-kind).

This investment will make the Clarence campus the centre of trades related vocational education in Southern Tasmania, as outlined in the TasTAFE assets and facilities master plan. The co-location of complimentary Trades on one site will enable further collaboration and improved training for all participants.

Tasmania, and indeed Australia, faces both a current and future skills crisis. In response to this, the Tasmanian Government has a target of delivering a 40% increase in apprentices and trainees and pre-apprenticeships by 2025. As the largest provider of VET training in Tasmania, TasTAFE is expected to deliver 60% of this growth target.

Tasmania signed the national partnership agreement in June 2018, which will ensure Tasmania, and Australia creates more apprenticeship opportunities.

Plumbing, Refrigeration and Air-conditioning

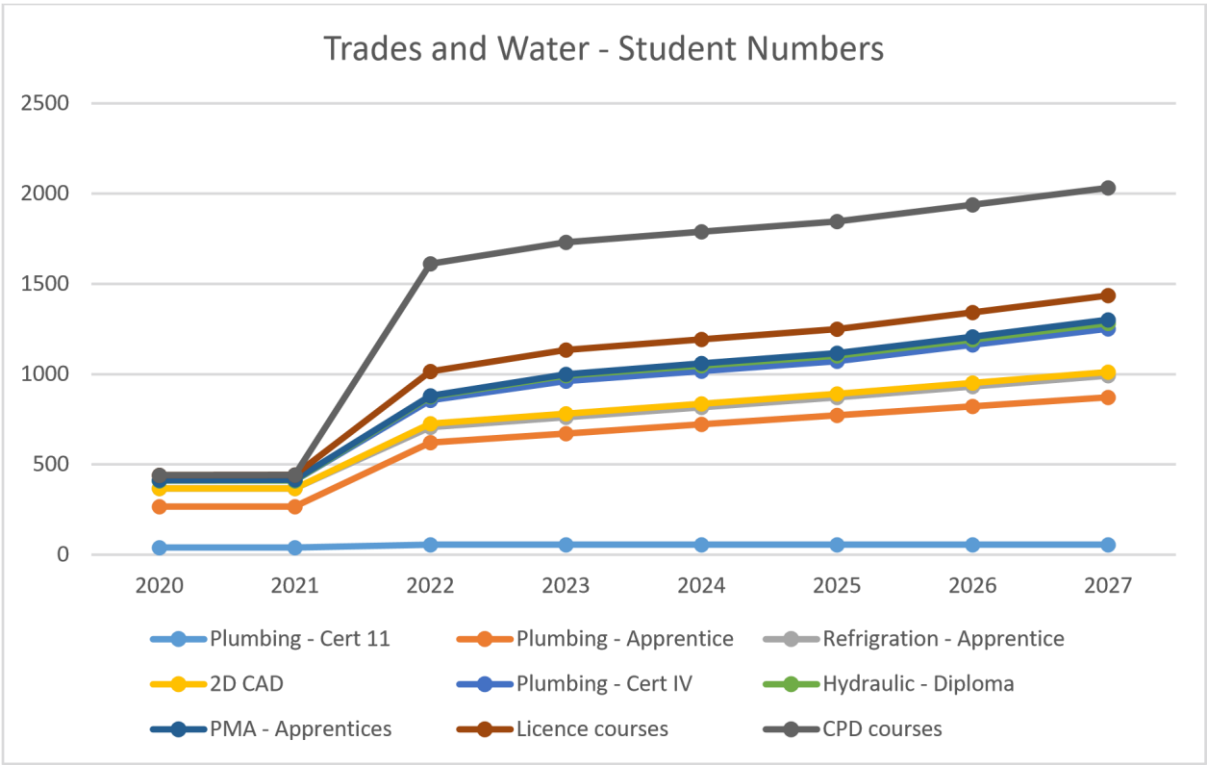
In addition to increased student capacity for existing qualifications, the development of the Centre of Excellence will allow TasTAFE to deliver:

- 3 new units and 6 additional skill sets under the existing plumbing training package, including polymer pipe skill sets to service the aquaculture industry
- Certificate II right through to Diploma level water industry qualifications
- 21 New industry-focused short courses to cater for Continuing Professional Development (CPD) points
- Diploma of Hydraulic services
- Various qualifications in Hydrogen to be developed in consultation with industry
- Tas Fire Service fire hydrant training and CPD

In total, the Centre will provide for a doubling of capacity in certificate and diploma level qualifications, with significantly expanded capacity for short courses to meet the growing continuing professional development market for established trade persons.

Full details of offerings to be delivered will be further developed in consultation with industry in parallel to the physical build of the Centre. Importantly, the design of the centre will cater for changes in technology and training requirements over time.

TasTAFE expects to see a doubling of student numbers per annum from 2019 levels within 5 years of commencement.



Electrotechnology

The electrotechnology discipline continues to be one of TasTAFE's most popular trade offerings, with demand regularly exceeding our capacity to deliver. The need for qualified electrical trade students is expected to continue to grow in line with the predicted boom in construction over the next 10 years.

TasTAFE has not kept pace with changes in technology in this sector. The introduction of extra-low voltage technologies and the prevalence of solar power and remote area power systems are just two examples.

The new facility will provide a doubling of capacity for training in the South of the State, sufficient to cater for expected growth for the next 10 years and beyond.

The water Industry

The water industry is a key component of these strategies.

"Australia's water industry is vital to national prosperity, providing water and sewerage systems to millions of households and businesses across the nation.

The water industry comprises all water capture, storage, treatment, and supply, including the systems that supply water for irrigation. The water sector is expected to generate $24.2 billion worth of revenue in 2017-18, with most of this revenue coming from households. The industry

is also a major employment provider, with 28,700 employees and wages of $3.4 billion according to IBISWorld".[1]

Closely associated with the water industry are the areas of heating, ventilation, air conditioning and refrigeration. This industry area is also experiencing rapid technology changes and increased demand for services.

Locally, TasWater has a 10-year, $1.55 Billion capital plan to address Tasmanian's drinking and wastewater needs. This represents the largest per capita spend on water and sewerage of any state in Australia.

Tasmanian Irrigation is implementing phase 2 of the Tasmanian irrigation plan with projects totalling $156M currently in progress and a further $149.5M of potential projects under investigation.[2]

The aquaculture industry in Tasmania continues to grow with increasing demands for new infrastructure including freshwater supply and advanced polywelding. Since 2002–03, the real gross value of aquaculture production has increased by 12 per cent ($108 million) to over $1 billion. The largest increase over this decade came from the value of production of salmonids (salmon and trout) and edible oysters. In 2012–13, farmed salmonids, almost entirely from Tasmania, were Australia's most valuable fisheries product, worth $497 million. Fish pens and water management are integral components of a rapidly expanding industry. As populations in Australia and around the world grow, so too does the demand for sustainable sources of seafood.

Seafood demand in Australia has increased considerably over the last three decades. Currently, Australia's consumer demand for seafood exceeds the supply from domestic production and continues to grow. Domestic aquaculture has the potential to significantly expand to help meet domestic and international demand.

Polymer processing also has significant potential in the mining and irrigation sectors around infrastructure development.

TasTAFE have been working with a local company, Mitchells Plastics, located at Castle Forbes Bay in the Huon Valley to develop their regional workforce and provide apprenticeship pathways for their business. Mitchells Plastics are a plastic welding company specializing in high-density polyethylene products related to the aquaculture industry. They are based in southern Tasmanian – servicing the aquaculture industry in Tasmania, mainland Australia and international locations.

They build waterlines, fish pens, bird net stands, pontoons, custom tanks, polyethylene boats, stunning tables and all aquaculture needs.

[1] *AWA and Arup, Australian Water Outlook 2016*

[2] *Tasmanian Future Irrigation Project, report to the Tasmanian Government, May 2016*

The current and future needs of these industries can no longer be achieved using the outdated 1980 TasTAFE facility at Claremont.

The development of a new Centre of Excellence at TasTAFE's Clarence Campus, on the Eastern Shore of Hobart, will provide the following benefits and outcomes:

- Provide state of the art facilities and increase capacity for students
- Meet the increasing demand for higher-skilled trades graduates
- Provide specialist cool climate training not currently available anywhere in Australia
- Partnership with tertiary
- Consolidate trades training in one location

3.2. Project Site

Site Analysis
Address 4a Bounty Street, Warrane
Area 152791m2 (**15.27 Hectares**)

The site is cleared with clusters of buildings, carparking and larger cleared, flattened outdoor spaces. The site slopes moderately from the north-east down towards the gully on its western border. Existing access is off Bounty Street at the far southern end of the site via a long two-way road. The road branches off to several parking locations along the main road before terminating at the main carpark located up on the north-east side of the site behind the main cluster of buildings. A public bus route travels the main road and bus stops are in key positions. Pedestrian access is via established footpaths alongside the road.

Existing Buildings and facilities at Clarence (Warrane) Campus

- Administration/Library
- Student Recreation
- Business Classrooms and Facilities
- Childcare
- Nursing/Aged Care teaching facilities
- Glazing and Painting
- Construction – with associated external training zones

Existing Plumbing, Gas, Refrigeration and Air-Conditioning Analysis

- Currently operates from the Claremont Campus
- Gross Floor Area 2876m2 (including draining workshop shed)
- Useable Floor Area 2735.8m2 (including draining workshop shed)
- Delivers critical training not offered elsewhere in the State

- Existing spaces too small or configured poorly for student numbers and optimum training methods
- Inadequate storage
- Current design limited supervision across areas
- No on-site or nearby TasTAFE accommodation for out of area students

Existing Electrotechnology Analysis

- Currently operates from the Campbell St Campus
- Gross Floor Area 2647.75m2
- Usable Floor Area 2558.54m2
- Utilising not-fit for purpose spaces
- Existing spaces too small or configured poorly for student numbers and optimum training methods
- Inadequate storage
- Current design limited supervision across areas
- No on-site or nearby TasTAFE accommodation for out of area students (limited number of out of area students)

3.2.1 Student Accommodation

A critical requirement for modern training delivery is on-site accommodation for students from Around Tasmania. The TasTAFE clarence campus already has on-site accommodation for up to 60 students. The site also has room for further expansion of student accommodation as required.

It is the only TasTAFE facility in Southern Tasmania with student accommodation.

Figure 1 The proposed site for this development at Clarence Campus.

Figure 2 The proposed building envelope – Southeast Oblique Aerial View.

Figure 3 The proposed building envelope – Northwest Oblique Aerial View.

3.5. Project Objectives

TasTAFE has a vision to strengthen the delivery of their trade training through the development of a Tasmanian Centre of Excellence for Trades and Water located on their Clarence Campus.

Currently trades offered at Clarence include Construction, Plastering, Bricklaying, Wall and Floor Tiling, Painting and Decorating and Glazing. These trades would be supported by the relocation of Plumbing, Gas, Refrigeration and Air-Conditioning and Electrotechnology. Traditionally the delivery of these trades has operated independently and TasTAFE looks to promote the interaction and co-support between trades, fostering an ongoing relationship into the workplace.

3.6. Value for Money Statement

The ETW CoE has been designed to ensure that public funds are well spent on the facility from the project's inception. The facility will support both the individual and collective needs of industry and TasTAFE now and into the future.

Whilst each of the trade learning areas have individual requirements, the building incorporates shared facilities throughout, telecommunications, IT services, and other facilities, which will reduce overall operating and maintenance costs.

4. CONSULTATION AND DESIGN BRIEF

During the early concept phase in 2019, Philp Lighton Architects Pty Ltd were engaged and prepared a Master Plan in November 2019.

The functional design brief was developed based on the Master Plan above and formed the starting point for the design.

In line with the State Government's procurement guidelines, following a procurement process for architectural services, in July 2020 ARTAS Architects (ARTAS) was awarded the contract to design a contemporary, fit for purpose, Centre of Excellence to accommodate the relocation of plumbing trades from Claremont to Clarence Campus. Subsequently, because of additional State Government funding, a contract variation to include Electrotechnology into the scope of the project was duly executed between ARTAS and TasTAFE in September 2020.

The project team worked with ARTAS regularly over a six-month period from July 2020 to January 2021, and the draft schematic design was developed.

The key features of the initial schematic design shown in figure 4, incorporated:

- suitable shared learning, facilities for plumbing and electrical trades, with capability to support future site expansion
- use of mobile learning equipment to maximise learning space and maintain currency with contemporary industry technologies
- use of operable walls to enable adjustable room configuration to suit purpose
- location on build envelope to advantage existing campus facilities and services

4.1. Site Selection and Appropriateness

The TasTAFE Clarence campus has been selected as the site for the ETW CoE for a number of reasons. These Include:

- Access to existing on campus facilities such as Library Services, computer rooms, onsite accommodation and student parking
- Available vacant land owned by TasTAFE
- Excellent public transport links
- Co-location and alignment with other trades training already on site including construction, allied trades, building design

The TasTAFE site master plan for Clarence includes future stages of development to accommodate other training such as Automotive (subject to funding). This will ensure that Clarence emulates the comprehensive training campus model already in existence at Alanvale in Launceston. Centralisation of training facilities on site delivers many advantages in efficiency and effectiveness. The site master plan confirms there is sufficient capacity at the campus to relocate other training services in the future

Figure 4: *Proposed ground floor concept design layout*

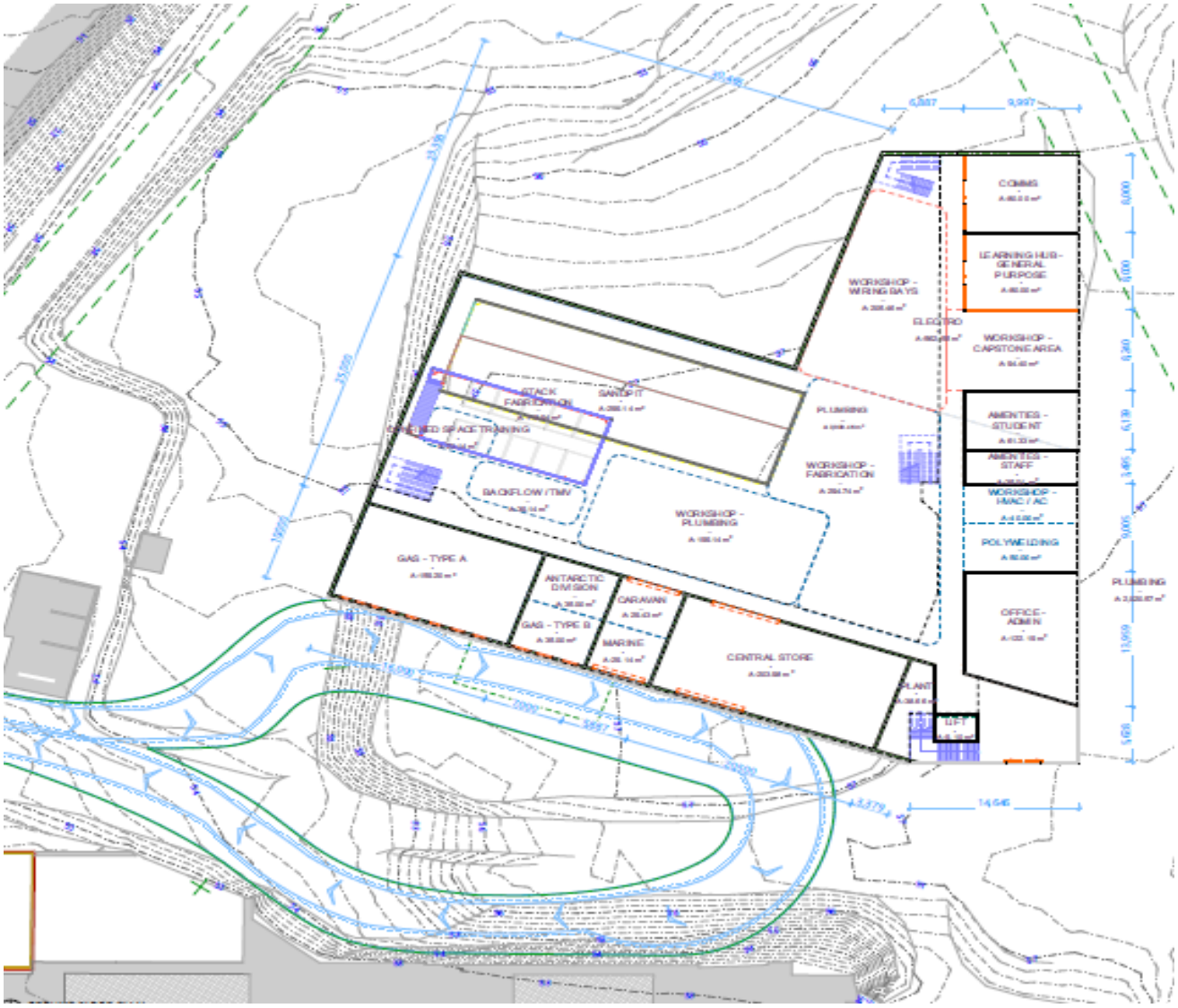
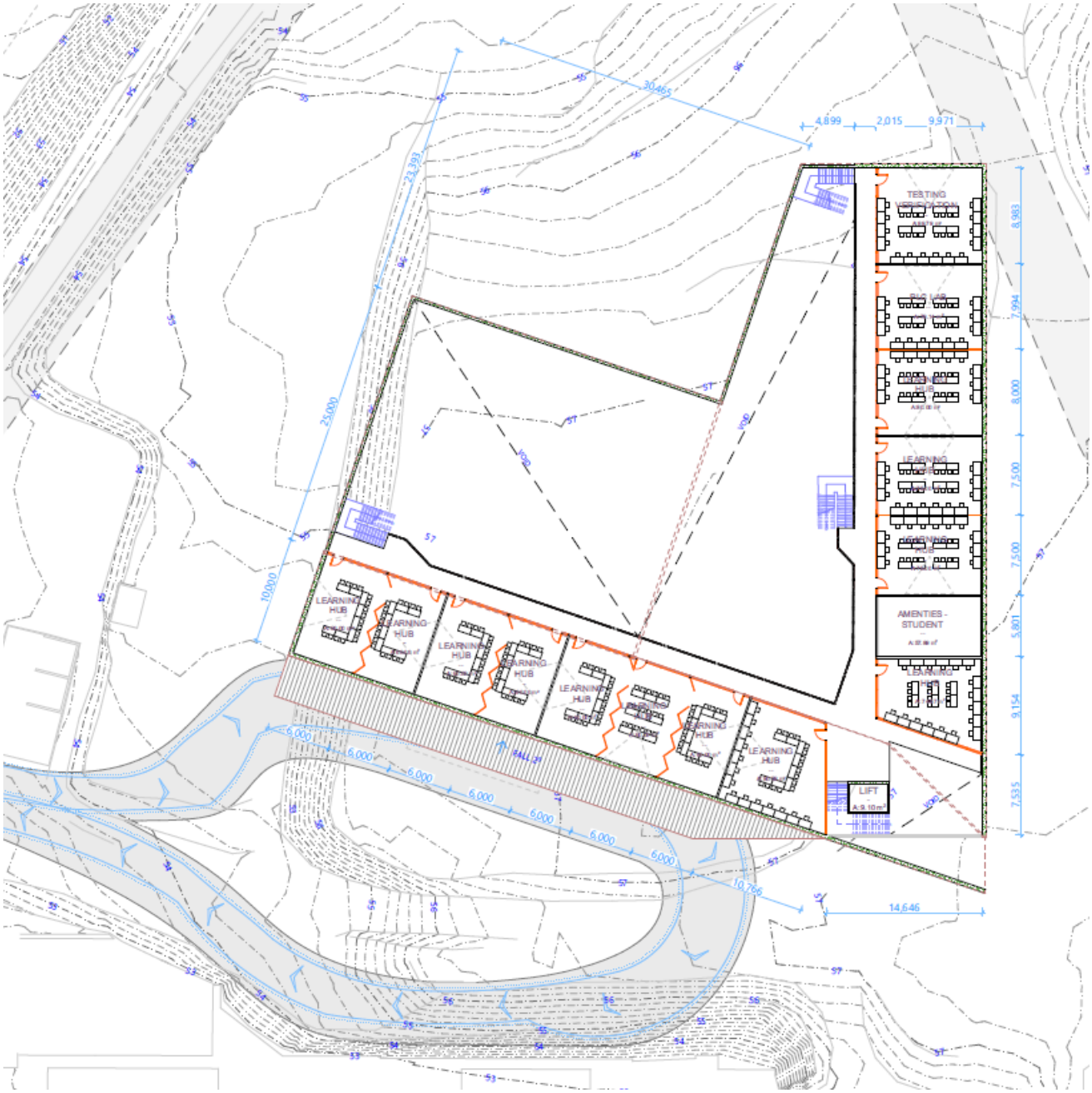


Figure 4: *Proposed first floor concept design layout*



4.3. Design Review

The ETW CoE will provide TasTAFE with a unique opportunity to significantly increase training activity in the sector and to attract new clients to undertake workforce development at the Centre. It will also provide an opportunity to partner with industry, other training providers and the University of Tasmania to provide effective pathways for lifelong learning.

Industry involvement will be essential in maintaining the ongoing viability of the ETW CoE in relation to sector utilisation of the centre and ensuring technologies and equipment are up to date and cutting edge.

Innovative products and the capability of staff will also be a crucial factors in ensuring the success of the centre.

The Education Plan outlines the strategies that will ensure that TasTAFE creates a digitally literate, resilient and effective industry workforce for the future, to sustain the sector and the broader Tasmanian economy.

Key project objectives

- To meet the workforce needs,
- Create, support, and maintain an internal culture of excellence for all,
- Increase student participation and engagement,
- Increase participation and engagement or rural and remote students,
- Work collaboratively with stakeholders and partners,
- 360 degree learning - contemporary and innovative approaches to curriculum and learning spaces,
- Provide opportunities and training pathways for learners,
- Create a positive environment for learning,
- Promote and market products, and
- Incorporate Green Initiatives (in Energy, onsite Water/Stormwater recycling, and wastewater treatment system).

4.4. Tasmanian Government Art Scheme

The development creates an opportunity for significant artwork to be incorporated into either the building's fabric or landscape. The artist's brief has not yet been developed, however representatives from TasTAFE have met with Arts Tasmania to discuss suitable ideas for the site's art component.

5. PROPOSED WORKS

5.1. Architectural Statement

The proposed ETW CoE will provide a state-of-the-art facility specialising in water industry sustainability and training for specialties including Plumbing, Refrigeration, Air-conditioning, and Electrotechnology, and in the future polymer plastics and Hydrogen gas.

By relocating these courses from the existing Claremont and Campbell Street Campus to the Clarence Campus, TasTAFE can capitalise on the synergies with the existing construction industry courses offered at Clarence to create an integrated industry training campus.

The delivery of the training programs will utilise a combination of practical and theoretical training spaces including:

- Classroom facilities which are suited to both traditional teaching methods, AV, and online supported approaches.
- Workshops for tool skill development, fitting, welding, and fabricating.
- Simulated work environments (e.g., demonstration house and foundations, sandpit, water room, plant room).
- A reconfigurable training facility learning space that considers acoustic, colour, light, layout, materials, interactivity, graphics, inspiration, technology.
- A functional and flexible learning space providing student and industry with a practical 'state of the art facility'.
- Showcase a Centre of Excellence for Tasmania.

It is intended that the Energy, Trades and Water Centre of Excellence Training facility will amalgamate and expand current confined uses into a more holistic and integrated facility thus removing current inefficiencies and restrictions by strategically planning cost effective and better educational outcomes for the foreseeable future.

A key challenge to the development and design of the TasTAFE Energy, Trades and Water Centre of Excellence is designing a facility that adapts to future skills required by the local workforce to support new job opportunities, industries and technologies.

5.2. Design Considerations

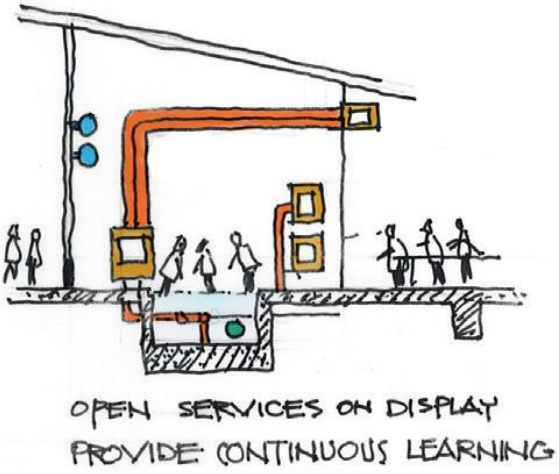
The Building as a tool for learning.

As a concept the TasTAFE Energy, Trades and Water Centre of Excellence training facility presents the opportunity to integrate and expose the building services and technologies which are normally hidden away, not dissimilar to concept of the Pompidou Centre in France.

By seeking every opportunity to expose selected hidden services and technologies we can create passive and active display and demonstration opportunities to reflect the activity inside to students and the public. These not only demonstrate the principles, layout and interface of systems but also if executed well, give a cue to quality workmanship.

In exposing the structure, technologies and moving parts' the building becomes an expression of the trades themselves and provides opportunity for the industry to market their products.

FMSA has realised this concept to great effect at the PICAC trade development campuses including exposing plumbing, pipework and machinery in the floors, walls and ceilings of trafficable areas such as the reception, bathrooms and training spaces.



Adaptable Training Spaces

Training spaces should promote innovation, flexibility, and adaptability. Given the rapid changes in industry and technology, the development of an adaptable training space model is pivotal to the longevity of the Energy, Trades and Water Centre of Excellence as a leading training facility.

The design of open spaces provides flexibility to change how teaching is delivered depending on the curriculum, demonstration requirements, and class size.

Additionally, delivering adaptable spaces will provide TasTAFE with the flexibility to use the spaces for open days, as well as industry and trade demonstrations, and employer exhibitions.

In the design of the PICAC Trade Development Campuses, FMSA has developed several adaptable training spaces that support the delivery of training across several education streams simultaneously.

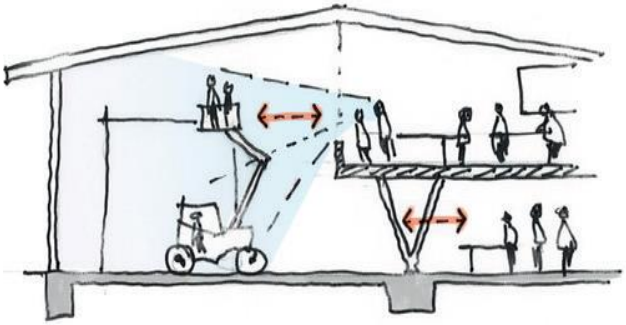
Strategies such as elevating practical teaching spaces or learning platforms above the open floor space creates an opportunity to maintain an open floor plan within less building volume.

The use of flexible elements such as module training units, transforms the adaptable training spaces to provide realistic interactive demonstrations of common plumbing scenarios for the domestic, commercial, and industrial environments.

Modules should reflect industry standards and current technologies and thus it will be important to have direct industry involvement and support where possible.

Advantages of the adaptable training space concept are:

- Provides multi-functional and flexible learning spaces that are adaptable to changes in course delivery and practical training requirements.
- Opportunities to occupy less floor area by elevating classrooms or learning platforms above open spaces and using modular units to adapt the training space.
- Creates space that can accommodate multiple training and demonstrations by eliminating wasted space occupied by equipment not required for the current training module.
- Enhances students experience in learning and training space as it can explore and demonstrate the current technologies and job requirements.
- Provides a medium for industry involvement to develop a dynamic and appropriately skilled workforce.

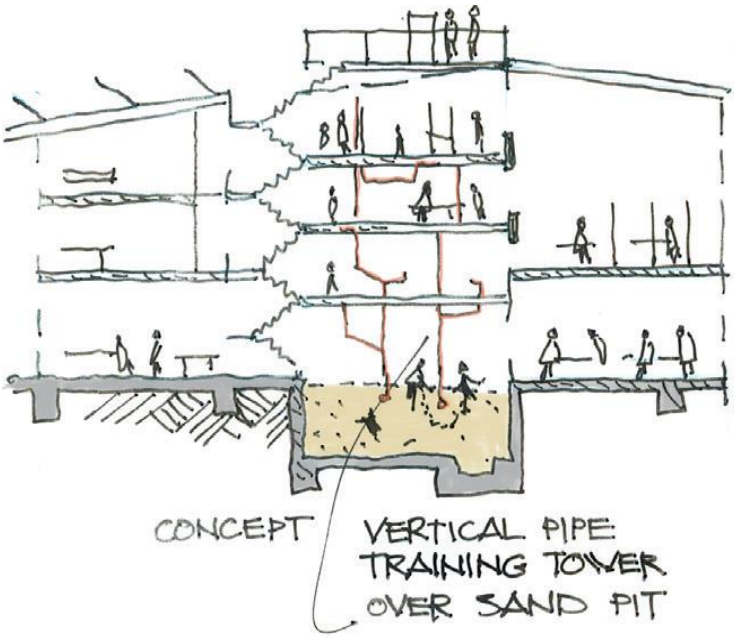


- Potential ability to integrate moveable modular units with new and emerging technologies such as augmented reality.

Passive & Interactive Learning

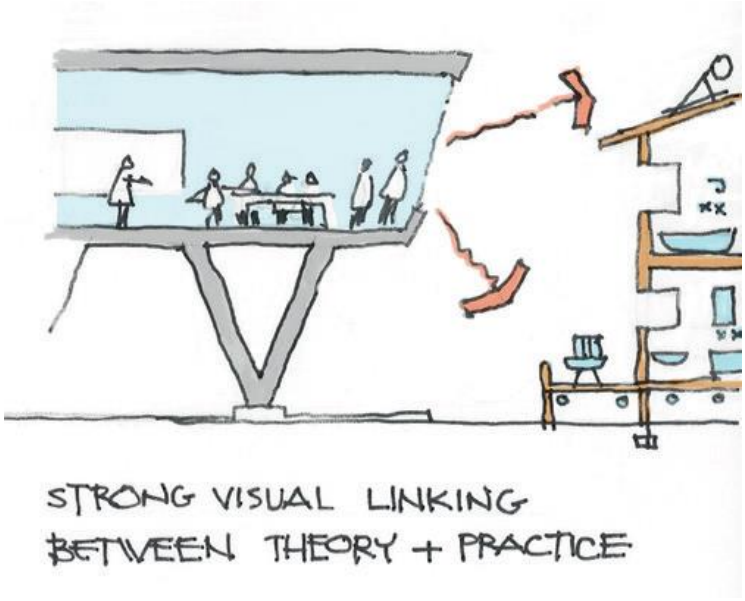
Concept: Vertical pipe training tower over sandpit.

The tower training space requires a central location and combination with other trade training spaces. This can be achieved by careful planning of the excavation pit with appropriate adjacencies such as the house frame and confined space training. Its height can also be used for innovative ESD initiatives.



Concept: Creating strong visual links between theory and practice

In addition to situating theory and practice spaces to maximise interaction, there are opportunities to create strong visual links between theory and practice spaces. By doing so occupants observe the displays and practical demonstration spaces through passive engagement as they move through the building.



Concept: Creating real world best practice working conditions.

Teaching best practice skills that are reflective of the real-world scenarios trades persons will encounter will lead to the development of skilled professionals who are conscious of best practices in site safety. Opportunities include confined space training and demonstrating safe ventilation in all workspaces by using fixed and moveable modular units adjacent to outdoor training spaces.

5.3. Site Investigation Summary

Geotech Summary

Construction contractors should be made aware of the fill that covers much of the site. Soil dermal contact, ingestion and dust inhalation health risks have not been identified at the site. The majority of the material is classified as clean fill, with only two samples with heavy metals classified as level 2 – low level contaminated soil. Stockpiling and testing of excavated fill is recommended as part of site earthworks.

Excavation of natural soil/fill material to required depths at all locations is likely to be achieved with relative ease with conventional hydraulic excavation machinery. Based upon the excavation depths seasonal groundwater infiltration may be encountered following extended wet periods.

The following recommendations have been made by GES for construction:

• GES does not recommend placing footings within the site fill or the shallow clay-rich material

• It is recommended for the proposed development to be founded in the underlying sandstone bedrock using pad footings excavated to sufficient depth

• Excavation of all soil material across the site to required depths at all locations is likely to be achieved with ease with conventional hydraulic excavation machinery

• Due to the variable distribution of reactive alluvial clays on site careful attention should be paid to drainage design on site to ensure adequate long-term foundation and pavement performance.

Existing Site Services Summary

Existing site hydraulic capacity

Based on desktop study undertaken by Gandy and Roberts (Hydraulic Engineer), it's established that the water, fire & sewer are going to be adequate to service the new development.

Under the masterplanning report, Engineering Solutions Tasmania (EST) have stated that the stormwater will need to be upgraded for the proposed development. It would be recommended to have an additional stormwater system for the new development and leaving the current system to serve the existing buildings.

The proposed development will require stormwater detention so that there is not an increase in the discharge between pre and post development flows. We will also require stormwater treatment to meet the specified targets in the interim planning scheme of 80% reduction of total suspended solids, 45% reduction of total phosphorus, and 45% reduction of total nitrogen. This can be achieved with several methods such as a vegetated swale, or products like enviroceptors / humeceptors, depending on site constraints.

Existing site hydraulic capacity

Based on desktop study and site investigation undertaken by CES (Building Services Engineer), we found that the existing substation has an adequate capacity to service the new development. However, major modification on the existing switchboard will be required.

Summary of Pre-planning assessment with Clarence City Council

The planning application falls under a discretionary application. This is due to the tower's height will be exceeding 8.5m height boundary restriction.

Parking requirements

A further assessment will be covered in TIA (Traffic Impact Assessment) report. However, based on the preliminary calculation we found that we do not require additional car parking to accommodate increased number of students and staff associated with the proposed Centre.

Clarence City Council lists parking rates for TasTafe under the land use "Tertiary Education" and is at a rate of 0.5 parking spaces per staff and 0.1 parking spaces per student. Based on the parking count on Monday 14th September, we currently have 432 parking spaces (exc. 9 disabled, 21 motorbike and 9 others).

The average daily number of students and staff for TasTAFE Clarence is as below:

• Existing number: 180 students/day and 119 staff/day on their busiest days.

• Additional number: 140 students/day and 34 staff/day on their busiest days.

According to the above rate, we are only required to provide 110 car parking spaces. TasTAFE Clarence campus have 432 existing parking spaces, therefore there is no requirement to provide additional carparks for the proposed development.

Traffic count (on the busiest day) is required to be undertaken for TIA report to accompany the Planning Application.

8.5m Height restrictions

Our stack fabrication tower will exceed the 8.5m height boundary. In this matter, we will address and satisfy their performance criteria by:

- Be consistent with any desired future character statements provided for the area (in line with Clarence City Council's planning scheme).
- Be compatible with the scale of nearby buildings (will incorporate this into our design consideration on Schematic Design).
- Not unreasonably overshadow adjacent public space (unlikely to be an issue with this criterion as there are no public spaces nearby that this development could overshadow).
- Provide for a transition in height between adjoining buildings (will incorporate this into the design consideration on Schematic Design).

Overlays

- Waterway and Coastal Protection Area

The existing stormwater is connected to council stormwater system, water and sewage are also connected to TasWater so TasTAFE are exempted from this code. Based on EST and Gandy & Roberts, the stormwater will need to be upgraded for the proposed development. If the additional stormwater system will be on site, TasTAFE may need to provide Council with a SWMP (Soil & Water Management Plan).

- Biodiversity Protection Area

The link road is now excluded out of the scope therefore this code should not apply. However, this depends on the design location for Stormwater Management Plan. If there are no work will be done on that part of site where the biodiversity overlay is the Natural Assets Code should not apply.

- Landslide Hazard Area

The proposed work is outside of this overlay so the landslide code should not apply.

Sustainable Design

Where possible, sustainable design principles will be adopted. These Include:

- Minimisation of operational energy use and therefore environmental impact and operational costs, by splitting internal spaces into zones that require similar heating and cooling requirements and minimal energy use
- Minimising potable water consumption in the building and the broader site
- Taking maximum advantage of passive design principles, such as solar access and natural ventilation

- Minimising potential negative stormwater runoff impacts on the local environment from the building and broader site
- Material selections that have a minimal impact on the environment over the life of the building, such as low volatile organic compounds (VOC) products
- Providing a building that is designed for future flexibility and longevity to minimise additional costs and resource use over the life of the building
- Employing energy saving devices such as low energy efficient appliances /equipment, building energy management systems and using renewable energy sources where possible
- Harvesting rainwater from roofs for reuse in the flushing of toilets and irrigation of gardens.

6. PROJECT MANAGEMENT

6.1. Funding and Budget Estimates

The allocated funding for the ETW CoE development provided by the Tasmanian State and Commonwealth Governments is $21 million. This funding covers both the construction and non-construction costs, which includes architectural fees, furniture and IT plus an $80,000 public art works component. Funding has been allocated across four years 2019-22.

As is best practice, a contingency amount is included in the quantity estimate to allow for any cost creep, as well as design variations and unforeseen construction costs. The percentage allowance included in the current cost estimate is 5%, providing a suitable amount for the schematic design phase.

Throughout the detailed design phase, further work will be undertaken with key stakeholders to refine the scope and identify further cost savings as the details of the ETW CoE design are developed.

The following figure is a summary of the initial stage of Value Management process undertaken from 7th October to 5th November 2020. ARTAS have realigned the scope of works against the project budget. In result of this, we defined a targeted floor area to develop in the Schematic Design. The holistic design approach will be implemented to allow for future provision as detailed in the Master Planning Report.

VM summary					
Project budget					$ 21,000,000.00
Design Contingency				5.00%	$ 1,050,000.00
Arts Tasmania legislated expenditure					$ 80,000.00
Wages & Salaries and oncosts					$ 1,000,000.00
	Sub-total				$ 2,130,000.00
Project Budget minus TasTAFE cost					$ 18,870,000.00
Design fees					$ 1,830,600.00
Local Council Fees & Charges					$ 90,000.00
Construction budget minus fees and charges					$ 16,949,400.00
Design Contingency				5.00%	$ 847,470.00
Construction Contingency				10.00%	$ 1,694,940.00
FFE	100%	$ 1,500,000.00			$ 1,500,000.00
	Sub-total				$ 4,042,410.00
Construction budget					$ 12,906,990.00

	Area % remaining	Quantity	Rate	Cost	Comment	
Communal	8%	5.04	$ 2,063	$ 10,397.52		
Electrotechnology	60%	1001.4	$ 2,500	$ 2,503,500.00		28.88%
Plumbing / Gas / Refrigeration	45%	2461.05	$ 2,500	$ 6,152,625.00		70.97%
		3467.49	Sub-total	$ 8,666,522.52		48.15%
Engineering Services						
Electrical Services	45%	$ 693,000.00		$ 693,000.00	Prorata	
Electrical Intrastructure						
Existing Switchboard Upgrade	100%	$ 50,000.00		$ 50,000.00	Fixed	
Submains from existing switchboard	100%	$ 30,000.00		$ 30,000.00	Fixed	
Optical fibre infrastructure - 2 diverse paths	100%	$ 25,000.00		$ 25,000.00	Fixed	
PV array 250 kW	0%	$ -		$ -	Option	
Battery storage 40 kWhr	0%	$ -		$ -	Option	
24V/48V reticulation to 13 Labs	100%	$ 90,000.00		$ 90,000.00	Fixed	
Building E services upgrade	100%	$ 70,000.00		$ 70,000.00	Fixed	
CCTV System - 40 cameras/local storage	100%	$ 60,000.00		$ 60,000.00	Fixed	
Access control system - 20 doors	100%	$ 60,000.00		$ 60,000.00	Fixed	
Dry Fire Services	100%	$ 20,000.00		$ 20,000.00	Fixed	
Dry Fire Services	45%	$ 81,000.00		$ 81,000.00	Prorata	
Mechanical Services	100%	$ 200,000.00		$ 200,000.00	Fixed	
Mechanical Services	45%	$ 630,000.00		$ 630,000.00	Prorata	
General Requirements	45%	$ 335,700.00		$ 335,700.00	Prorata	
Siteworks	75%	$ 1,065,000.00		$ 1,065,000.00	Prorata	
Site Services	75%	$ 704,250.00		$ 704,250.00	Prorata	
			Sub-total	$ 4,113,950.00		
			Total	$ 12,780,472.52		

Funding Allocation Process

The provision of funds will be upon approval of the Sponsor and / or Owner and / or Steering Committee for release by the Commonwealth and State Government's respective custodians. For the State Government that will be the Department of State Growth, Skills Tasmania.

Procurement Strategy

Must comply with the TasTAFE procurement policy and procedures. This will ensure adherence to all Government procurement requirements.

6.2. Risks and Potential Project Constraints

The ETW CoE is the first of its kind for TasTAFE. If the purpose-built facility is not undertaken, the key operational risks include, but are not limited to:

- Inability to meet increasing plumbing and electrotechnology resource expectations
- Inability to meet existing and future industry service demands from an increasing population base
- Inability to meet and promote state government initiatives around qualified tradespersons for Hydrogen Gas, Battery of the Nation initiatives.

Additionally, there are critical external factors that have the potential to affect the budget, time, scope and quality as outlined in the table below:

Identified Risk	Risk Mitigation Strategy
Impact Covid-19 will have on the construction industry particularly with respect to the project timeline, available resourcing, material supply and cost is unknown.	This will be closely monitored and reported to key stakeholders throughout the project, with the scope of works and timeline managed according to identified risks, considering but limited to: • Suspend project until distancing regulations are relaxed or removed. Do not appoint builders. (short term) • Maintain progress on rudimentary industry compliance tasks, such as soil testing, site permits, etc. (short term) • Re-issue tender for builder at resolve of COVID-19. (Long term – some businesses may not survive lock down laws) • Close project. Re-evaluate "new world" of education delivery in line with need for CoE design

Pre-tender estimate will exceed the total available budget	Cost reviews will be undertaken throughout the detailed design phase and key stakeholder meetings held regarding scope refinement and assuring: • Competitive tender processes • Minimal deviation from standard form contracts • Architect's project management estimates • Estimates are based on quantity surveyor advice
Planning approval will not be forthcoming to meet the time frame for tender issue.	The planning application has already commenced and is scheduled to be submitted in February 2020 to ensure approval is received prior to proceeding to tender.
Delays occur during construction	Fortnightly site meetings will be held throughout the construction phase, to allow for continued review of progress against the construction program and to allow for appropriate forward planning in relation to identified issues on site. Adequate programming will allow full documentation of the construction package, to minimise the risk of technical difficulties arising during construction.
Design does not meet the requirements of contemporary educational and operational requirements.	Regular project working group meetings with key representatives from all stakeholder groups, will continue to be held throughout the detailed design phase.
Community concern over design solution	Considerable community engagement is planned by the Clarence City Council, as part of the planning approvals, and by TasTAFE around the site works for the general locality.

7. CONCLUSION

The provision of ETW CoE located at the TasTAFE Clarence Campus, will have significant benefits for the local Tasmanian and interstate regions. The proposed development will ensure that TasTAFE are ready to train apprentice plumbers and electricians to the most contemporary standards and technologies. This facility will achieve this by providing a modern and efficient state of the art building for employees and students.

Whilst the need to proceed with this development is high, it should be noted that the construction phase will generate significant employment with flow-on benefits to the broader Tasmanian community.

It is therefore recommended to the Parliamentary Standing Committee for Public Works that approval be granted for the major development works proposed for the ETW CoE to proceed as detailed in this submission.

8. ATTACHMENTS

- Commonwealth submission


MS20-001620 - TAS.pdf


Project Agreement - Revitalising TAFE Ca


Revitalising TAFE Campuses - Project S

- TasTAFE SkillsTas Submission


REVITALISING TAFE CAMPUSES ACROSS

- TasTAFE Education Plan


Final Draft Education Plan 29.0

9. APPENDIX A – Commonwealth PWC Clearance

From: Apps, Belinda <Belinda.Apps@finance.gov.au>
Sent: Monday, 26 October 2020 8:58 AM
To: Eaves, James P <james.eaves@TasTAFE.tas.edu.au>; Public Works <PublicWorks@finance.gov.au>
Cc: Lewis, Deb <Deb.Lewis@finance.gov.au>
Subject: RE: Energy, Trades and Water Centre of Excellence Project - Referral of a proposal [SEC=UNOFFICIAL]

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SEC=UNOFFICIAL

Hi James

Thanks for forwarding the relevant information on the above Project.

Based on the information you have provided, the Project does not require referral to the Parliamentary Standing Committee on Public Works.

Please let us know if you have any further queries.

Regards

Belinda Apps
Portfolio Management and Land Administration Branch
Department of Finance
T: 02 6215 3237 – **E:** Belinda.apps@finance.gov.au

Team inbox: publicworks@finance.gov.au

A: One Canberra Avenue, Forrest ACT 2603

SEC=UNOFFICIAL

From: Eaves, James P <james.eaves@TasTAFE.tas.edu.au>
Sent: Tuesday, 20 October 2020 12:25 PM
To: Public Works <PublicWorks@finance.gov.au>
Subject: RE: Energy, Trades and Water Centre of Excellence Project - Referral of a proposal

Hi Belinda,

Thanks for taking my call this afternoon.

As discussed, I have attached some relevant information around the project.

Looking forward to hearing if this project needs to be put through the PWC processes.

Regards,

James Eaves
Senior Project Manager
Energy, Trades and Water Centre of Excellence Project
P: 03 616 58030 (ext 58030)
M: 0404 341 533

From: Eaves, James P
Sent: Monday, 19 October 2020 4:05 PM
To: publicworks@finance.gov.au
Subject: Energy, Trades and Water Centre of Excellence Project - Referral of a proposal

To Whom it may concern,

TasTAFE have a $21M project ($14M State & $7M Commonwealth funded) underway for the construction of a Energy, Trades and Water Centre of Excellence on vacant crown land situated with the existing Clarence Campus at Warrane.

I understand that this referral is the first of six steps in the referring to the PWC and to seek approval of medium works notification.

Welcome any additional instruction needed to satisfy the PWC requirements.

Looking forward to working with the PWC on this.

Regards,

James Eaves

Senior Project Manager

Energy, Trades and Water Centre of Excellence Project

4A Bounty St, Warrane TAS 7018

P 03 6165 8030 (**ext** 58030) | **m** 0404 341 533|**e** james.eaves@tastafe.tas.edu.au

Website www.tastafe.tas.edu.au | RTO 60142 | CRICOS 03041M

We acknowledge the palawa people as the traditional custodians of the land on which we learn and work together and are committed to building relationships and opportunities for all Aboriginal people in our region.

Finance Australian Business Number (ABN): 61 970 632 495

Finance Web Site: www.finance.gov.au

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