FAREHAM COLLEGE CEMAST

1.0 SUMMARY

The new Centre for Excellence in Engineering & Manufacturing Advance Skills Training or CEMAST brings together all the Automotive, Engineering and Manufacturing courses run by Fareham College on a single site at Daedalus airfield in Lee-on-the-Solent. The Centre provides training for over 900 Full Time and Part Time Students, and acts as the main learning centre for students in apprenticeship programmes with partner companies such as – BAE Systems, GE Aviation, Virgin Atlantic, Coopervision, Burgess Marine, Jensen Motorsport.

The training is career led – preparing students for work and/or higher study in their chosen field. The CEMAST curriculum has been created in partnership with local industry leaders to ensure that students gain the most relevant and up to date industry knowledge.

CEMAST opened in September 2014 – the result of a collaborative process that began with funding and consultation and ended with a successful construction project.

The project objectives were:

- A new training centre for advanced engineering skills key to the local economy
- An industry led and enriched curriculum
- The development of existing and new relationships with employers
- A learning environment based on real life working conditions
- The creation of a "community of practice" for staff
- A catalyst for the regeneration of the local economic community

Project facts

- Area: 4,000m²
- Project cost: £12m
- Construction cost: £7.3m
- Start on site: September 2013
- Completion: July 2014 (on time)
- Procurement method: 2 stage D&B through the iESE framework managed by Hampshire County Council

"Whilst it was a huge learning curve by working together as a team we came up with something that exceeded expectations in what it is, what it looks like and what it can do."
Steve Dinsdale, Assistant Principal

2.0 DESCRIPTION AND INFORMATION

Introduction

Fareham College is a very successful general FE college with a broad curriculum offer focused on career development. The College caters for approximately 2,000 full time learners and 1,000 part time learners from Foundation Level to Higher Education and supports a growing number of apprenticeships. Most of the college facilities are located on the main site in the western side of Fareham.

CEMAST (Centre of Excellence for Engineering, Manufacturing and Advanced Skills Training) is located on a separate site - the newly designated Solent Enterprise Zone at Daedalus airfield at Lee-on-Solent in Hampshire, The building offers a broad range of engineering training facilities as well as conference and other facilities to the Zone's business community and beyond.

Purpose of the project

A primary purpose of the project was to provide a supply of future engineering skills vital to the success of the regional economy. In particular advanced manufacturing in the marine, aviation and aerospace sectors. As the first development on the site, it is an anchor project for the new Enterprise Zone and a catalyst for future development and job creation. Regeneration is a key objective.

The College aims to be an OFSTED outstanding college by 2017 and the property strategy has been designed to support that vision through the provision of a range of industry standard learning environments preparing students for work with a series of specialist facilities in dedicated buildings that can also provide access to the community. CEMAST is the first part of the vision to be realised.

The College's existing estate largely comprises of spaces inherited from a technical college and a school that were combined to form the College in 1984. The engineering facilities were spread across the campus in a range of inappropriate spaces. Creating a purpose built centre allowed the College to create a "community of practice" for their staff and to design learning spaces modelled on real working environments.

The vision for the centre was also immensely attractive to the Solent LEP and local employers many of whom were directly involved in the briefing for the workshops.

Funding

The £12m Centre was funded by grants of £3m each from the Skills Funding Agency, the Department for Communities and Local Government's Regional Growth Fund and Hampshire County Council, who also provided initial project support and an ongoing Technical Advisory role for the College. The Solent LEP also provided a short-term interest free loan to complete the funding package. The project was amongst the first to receive this kind of funding collaboration to stimulate local economic growth within an Enterprise Zone via a regional LEP.

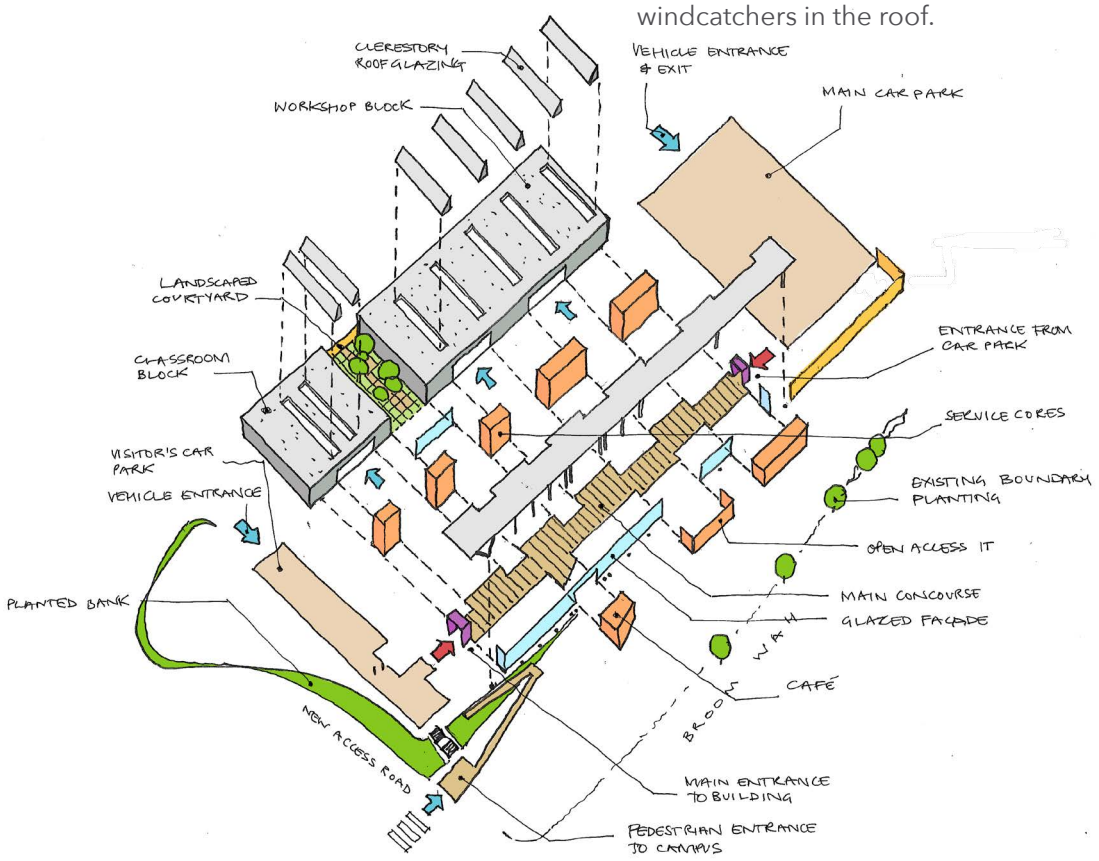
Description

The new self-contained 4,000m^2 building comprises of a series of dedicated engineering workshops, teaching classrooms, a learning resource centre, reception and staff base. The building is also served by an impressive concourse with 6.8m timber clad ceiling which acts as a shop window into the engineering workshops, provides a generous café and drop-in IT space, as well as exhibition and flexible conference facilities to the Zone's business community.

About 850 students study at CEMAST each week with about 450 students at the centre on any one day.

The concourse with its café and informal learning and social spaces links the two main blocks. The larger block is a workshop block providing a range of dedicated engineering spaces including aeronautical, marine, automotive, composites, CNC and manufacturing workshops. The smaller block consists of general teaching spaces which embrace a conference centre, LRC and a staff base. The building is arranged on one level but zoned so that different areas can be used independently.

The clear, diagrammatic arrangement of the spaces which are further defined by their architectural treatment means that the building is extremely legible and welcoming for students and community users. A highly glazed facade to the concourse provides a dynamic frontage to the main road and a simple palette of robust but attractive materials means that the building successfully combines style with good value. Spaces are light and airy and are generally naturally ventilated via the windows and windcatchers in the roof.




CEMAST

3.0 THE STORY OF THE PROJECT

Project formation

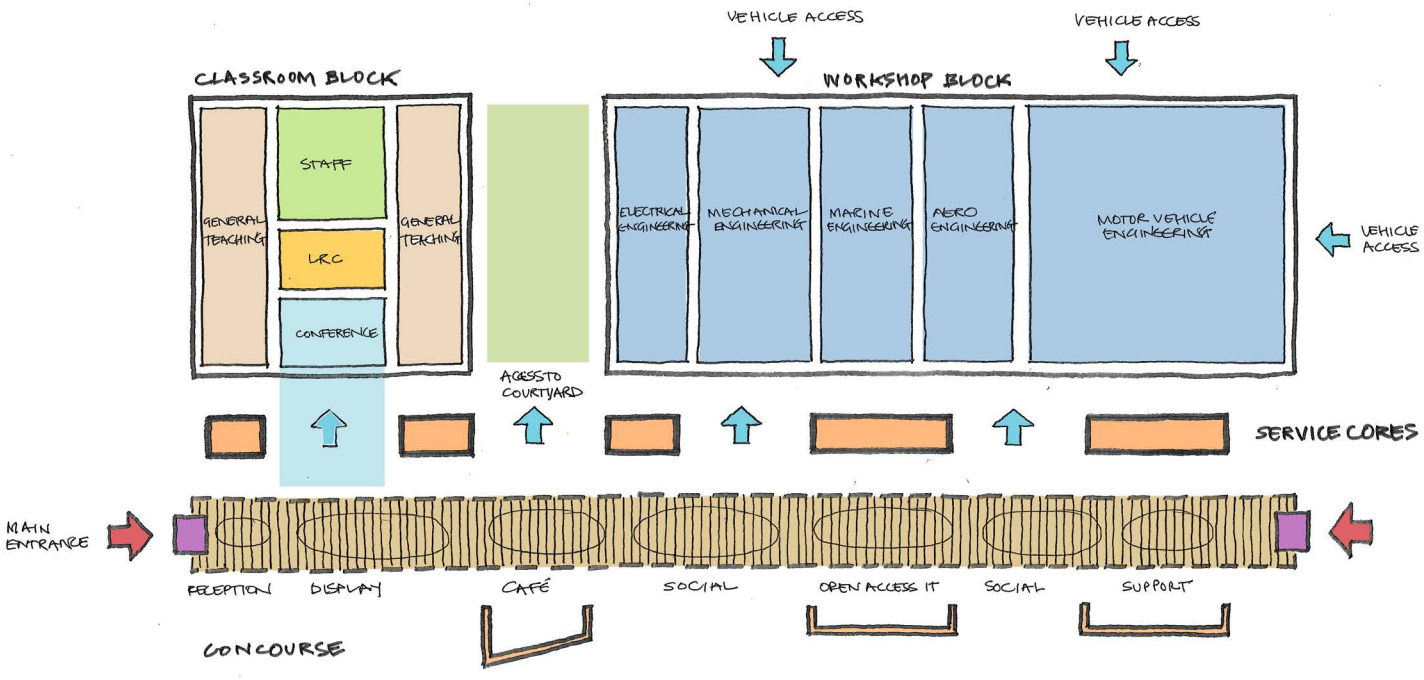
Strategic plan and property strategy

The College's property strategy sets out a phased programme to create a new and revitalised estate. The first phase of which is the relocation of the College's Engineering provision to a new facility at Daedalus airfield, a few miles away from its main campus in central Fareham. The creation of CEMAST has also acted as the catalyst for transformation of the College's existing estate through a second £16m programme that is due to complete in September 2015.

The site was formerly a base for the Fleet Air Arm and headquarters for Coastal Command. The base eventually became HMS Daedalus and played a key role as a centre for naval aviation. Following the closure of the base in 1996, the airfield site was earmarked for redevelopment and was acquired in 2006 by South East England Development Agency (SEEDA) and the Maritime and Coastal Agency (MCA).

The business case and securing funding

The regeneration of Daedalus is key to the growth of the local and regional economy and so the project was extremely attractive as an anchor development for the site. It helped create and sustain over 150 direct jobs during the course of construction. The purchase of the 3 acre site by the College helped set land values for the HCA. There was also a good match with the objectives of the LEP and Hampshire County Council – to provide much needed engineering skills – with the College's own objectives for centralizing and modernising their existing engineering facilities. Representatives of the LEP and Hampshire County Council were members of the College Governing body which helped communication and alignment of objectives. The SFA completed the funding package with a grant of £3m.



Teaching and learning objectives

The learning environment of the new centre is intended to replicate as closely as possible a typical working environment – albeit one that anticipates future developments in the engineering industries. Whilst a need for formal learning spaces was identified, it was felt that wherever possible learning should be "in the moment" and take place in the workshops. Students would wear uniforms to reinforce the sense of a "real world setting" and a "conference area" provided to add to the business like ethos.

The formal learning spaces were briefed as straightforward classroom spaces designed for groups of 18 students. Flexibility and adaptability so that spaces could respond to different teaching styles and developing needs were guiding principles in thinking about the spaces themselves. It was decided that each classroom should be capable of being reconfigured to provide 4 different layouts with the ability to combine these spaces to increase capacity to 80 (two classrooms) or 120 (when joined with the conference space).

Similar ideas about flexibility were brought to the IT strategy and although a dedicated LRC formed part of the brief all other spaces would use the wifi system and laptops.

The desire to create a collaborative community of practice led to the decision to provide a single space shared by all staff. Like the students staff use laptops and a hot desk system is in operation.

How to engender a high level of commitment and good behaviour from the students was debated and a requirement for good visibility across all spaces formed part of the brief. Similarly it was decided that no separate social or refreshment facilities would be provided for staff - again underpinning the idea of a real working environment and providing a very subtle but effective form of passive supervision.

Preparation for the process

At the start of the project a small Property Strategy Group, drawn from the governing body, was set up to oversee the governance of the project which met each month. The group consisted of The Principal, Deputy Principal and the Assistant Principal responsible for the Engineering department, plus members who were from the LEP and Local Authority Governors. The Deputy Principal, responsible for property and estates acted as the College's Project manager and worked closely with the "Client" Assistant Principal. This executive group met monthly through the life of the project and reported to the Board.

Some visits were made to other Engineering centres but the primary external influencers on the project were local employers and helped the College develop the curriculum offer that defined the brief. A series of employer meetings was held during the design phase to develop an understanding of employer needs and to ensure the CEMAST curriculum offer was designed to maximise the potential for employer use of the building. These links and partnerships with local, national and multinational businesses and partner companies have continued to thrive.

Appointing a consultant team

The consultant team was appointed through Hampshire County Council's iESE framework. A single appointment was made that encompassed Project Management, Architect, Engineering Services, Cost consultant and CDM Coordinator.

Delivery team

- Architect: Perkins Ogden Architects
- Project manager (cost advice and engineering services): Jacobs
- Contractor: Leadbitter (part of Bouygue UK).

Design briefing and pre-construction

Briefing and design development

The College's Deputy Principal who was recruited to bring his substantial experience of leading a £64 million development at City & Islington College acted as the key 'Client' with the Assistant Principal assisting in the detailed briefing process with a wide range of his staff and the Architects. There were interviews and workshops with each curriculum leader through the design phases with the key design and cost decisions being made by the fortnightly client led meetings.

During the design phase two or three forums were held with students and some useful suggestions emerged from these.

There were also consultations with external stakeholders - local employers, Fareham Borough Council, Gosport Borough Council, Homes and Communities Agency, Hampshire County Council, Solent Local Enterprise Partnership, all local schools the Education Funding Agency, the Skills Funding Agency and local communities which were critical in ensuring the building met local needs.

Management process and project reviews

In addition to the all encompassing fortnightly Project Review Meetings and monthly governance meetings of the Property Strategy Group, regular design review meetings were held during the design phase with Hampshire County Council (HCC) architects department under their dual role of Technical Advisors to Fareham College and part scheme funder. HCC used the design parameters developed by CABE for education projects to formally assess the scheme.

Despite a demanding timetable, a series of formal gateways were set up to ensure that all issues had been dealt with before moving to the next stage. These reviews were held at the following stages:

- Concept
- Pre-planning
- Pre-construction
- Mid Construction
- Post project

There was one round of value engineering in order to meet the construction budget. Although there were some changes to finishes, the primary area for value engineering was the Mechanical and Electrical design which had become over complex. Rather than a simple cost cutting exercise this was a genuine case of re-visiting the provision against the brief and requiring the M&E designers to deliver the simple systems the College preferred.

The College policy was to maximise the engagement with staff during the design phases of the project to build a sense of ownership and enthusiasm and to ensure that all requirements were captured. Once the designs were finalised and the project moved into the construction phase, the College were determined to minimise and changes to the design and so minimise any additional costs or risk to the delivery programme: the project completion date was critical. They therefore instituted a successful policy of no design changes unless absolutely essential.

Recognising that some amendments might nonetheless be required, a sum of £200,000 was set aside for dealing with issues that emerged construction phase but which could safely be dealt with post handover.

Consents and approvals

Regular pre-planning application meetings were held with Fareham Borough Council planning department. Specific events were arranged to increase the breadth of public consultation for the project. A well-attended public exhibition was held.

A planning application was made after a gateway review when the concept design was well established and key aspects of the detailed design complete so that there was good cost certainty about the proposals being submitted.

Procurement strategy

The Contractor was appointed soon after the planning application was submitted.
The Improvement and Efficiency South East (iESE) framework, created and managed by Hampshire County Council, was employed to procure and deliver the project within the exceptionally tight timescales demanded of the funding bodies. The iESE procurement method has preset scoring criteria which prioritise quality over price. Bidders were asked to bring their proposed team to an interview and the quality of the team was scored. Bidders who proposed an open, honest and collaborative approach scored most highly.

The Contractor was appointed using a 2 stage Design and Build contract (JCT 98) which allowed the Contractor to work with the Project Team to develop the technical design, consider buildability issues and to de-risk the project before agreeing the final contract sum and starting on site.

The design team were not formally novated but the Contractor chose to employ the team to complete the design and through to the construction and handover phase.

At the end of the pre-construction phase, the developed design became the contract proposals - they were both the Employer's Requirements and the Contractor's Proposals so that there was no possibility of conflict between the two.

IT and FF&E were managed separately with the College designing and managing their own IT installation and furniture procurement using specialist consultants as required.

Construction

During construction, progress was monitored and the project managed in much the same way as during the design phase with the original project team still attending meetings and reporting freely to College and Contractor in the open and collaborative manner established at tender stage.

The construction programme was very demanding as the College required the building for the start of the Autumn term in 2014. Staff visits were discouraged until the project neared completion but a CEMAST section on the College website kept the staff in touch with and enthused about progress on site.

Project completion was achieved on time in July allowing time for the IT and FF&E installation before the staff moved in at the end of the summer term.

Handover and commissioning

The handover process went smoothly with the Contractor also handling the refurbishment and move of the existing equipment being transferred to the new building. The curriculum was managed so that the equipment was not needed in the preceding term. Whilst the College managed the actual move themselves they employed a move management consultant to help them plan which was very helpful.

Staff expectations were carefully managed over the handover period. A user guide and a celebratory move in pack (mugs and chocolate) were given to everyone moving in. The College ensured any emerging issues were dealt with swiftly. There were also student inductions which emphasised the standards of behaviour and commitment expected of them.

4.0 LESSONS LEARNT

Teaching and Learning

Standards of behaviour are excellent and students are very engaged. The employer led enrichment of the curriculum works extremely well. The use of the building as a training facility for employers has also taken off and full cost paid training is a significant growth area.

The College has run a series of taster days and these have been very popular. The building copes with approximately 850 students every week: 400 full time learners funded through the EFA/SFA with another 500 or so students coming from the HE sector, part time learners and apprenticeships with varying patterns - from full time to 1 day a week with assessment in the workplace. There are also approximately 70 14-16 students. The maximum occupancy (excluding social areas) is 460 so the take up and utilisation is high.

"We love this building it is outstanding and so we need to have an outstanding delivery. It has raised our game - the same teaching staff are now prepared to go the extra mile."
Steve Dinsdale Assistant Principal

The single shared staff room has also been a great success due to the ease of collaboration and social engagement. The volume of email traffic significantly reduced

Within the workshops the generosity and flexibility of the space is paying off and staff have already begun to take advantage of this. "Pop up" informal learning areas have appeared in the workshops where need arises created from the movable FF&E. Some of the fixed barriers protecting anticipated learning zones in the workshops will, as a consequence, be removed.

Design, Architecture and Quality

The College's aspiration for a simple, striking, high quality building has been achieved. It has been well received by students, staff and public alike.

The building has achieved a BREEAM Very Good rating. Funds were deliberately focused on low energy design and passive environmental features rather than complex systems and a higher BREEAM rating. This has paid off and good value for money has been achieved. Straightforward robust and inexpensive materials have generally been used but money spent in a few key areas that have maximum impact for example the generous glazing to the street facade which provides a fantastic, welcoming, shop window for the centre and the timber soffits which run the length of the internal street. Bold colours and graphics also contribute to the stylish quality of the whole for relatively modest cost.

"We planned it to within an inch of its life and it was worth it - it has been great for our future developments because we have built real trust in our ability to deliver."
Peter Marsh, Deputy Principal

Management and Process

The College were an experienced client and so planned the project carefully: setting up a small executive team that could keep the project on track with clear briefing and swift decision-making. This Project Strategy team included representatives from both the LEP and the Local Authority who were part funding the project. Client management levels were unusually high with the Deputy Principal effectively directing the project.

"This was a fantastically collaborative project - not just because of the high levels of staff engagement but through a genuine partnership between the College, our funders and the contractor who really embraced our design vision."
Peter Marsh, Deputy Principal

The collaborative team working that was key to the success of the project was a key factor in the appointment of the contractor, through IESE framework for the next phase of development at the College.

Planning the engagement of the staff with heavy input during the briefing but minimal exposure during the construction stage to minimise the temptation to request changes also contributed to the effective delivery of the project in terms of time and budget.

Top tips

Three pieces of advice to another college about to begin a similar project:

1. When it comes to M&E apply the keep it simple stupid philosophy. Chasing BREEAM points can result in systems that are too complex to maintain and operate. Opening windows and wind catchers work really well for us at CEMAST.
2. Use the Gateways effectively. Make them hard gates and in the nicest possible way ensure everyone understands that there are other contractors and designers ready to step in if cost, quality and time are not aligned at each Gateway.
3. Keep a contingency on the contingency fund for post project changes. For the majority of the time changes will be cheaper post occupation and change can lead to reasons to delay which can, again, prove too costly.

"CEMAST is the most striking piece of modern architecture in our part of Hampshire, its stunning concourse not only offers a highly attractive, flexible learning and social space, but acts as a shop window straight through to the fabulous workshops which has helped elevate the importance of high-level technical education to the future of our regional economy."
Peter Marsh, Client and Deputy Principal