DORSET
Local Enterprise Partnership

Innovation Studio

End of Project Report

March 2021

PROJECT SUMMARY

Arts University Bournemouth (AUB) is a world-class arts, design, performance and media university. AUB is committed to supporting local growth and regeneration through working with start-ups and Small Medium Enterprises (SMEs) and developing entrepreneurial behaviours and future skills capabilities in our students and graduates.

Over the last four years AUB have invested our own resources and attracted investments from the European Regional Development Agency (ERDF) and the Dorset Local Enterprise Partnership (DLEP) to grow our support for local business. We have worked with over 250 SMEs to develop new skills and prototype and test new products and services.

This project has created a state-of-the-art incubation facility (innovation studio) to support start-up businesses across the whole of Dorset. This Innovation Studio will be an investment in unique and specialist incubation facilities that will act as a catalyst for economic development locally and regionally.

The £1.58m Local Growth Fund funding has been combined with significant investment from AUB to create the Studio building, designed by the renowned architect Sir Peter Cook on the AUB campus. The building is co-located with the Innovation Suite and attaches to the existing digital fabrication workshop, allowing residents and visitors easy access to a unique resource for rapid prototyping.

The creation of the Innovation Studios will support the positioning of Dorset as a growing centre for the creative and digital industries, enhancing the regional skills base and leveraging investment from public and private sources. A key objective of the Innovation Studio is to create a 'collaborative space' for students, academics and local businesses to work together to develop products and processes to respond to market opportunities.

It is intended that the Innovation Studio will support several groups. There will be the proposed MA Design and Innovation which will support the development of creative businesses.

A proportion of the funding was used to develop a sector leading flexible and experimental additive manufacturing resource. This extends the research, prototyping and manufacturing capabilities of Dorset and the design and manufacturing skills of students and SMEs. This additional futures orientated equipment will have a monumental impact on local industry and graduate start-ups in supporting essential R&D.

This has been a long process. Initial designs had to be rethought and reworked due to revisions to guidance on cladding, the increasing costs of Cross-Laminated Timber and the complexity of the build. The revised designs were hit by delays due to lockdown. However, AUB have now created a truly excellent creative facility which can act as an incubation hub and will attract wider talent and investment. The facility includes an additive manufacturing hub with a combination of resources unparalleled in the South which will extend the R&D, prototyping and innovation capabilities of the region.

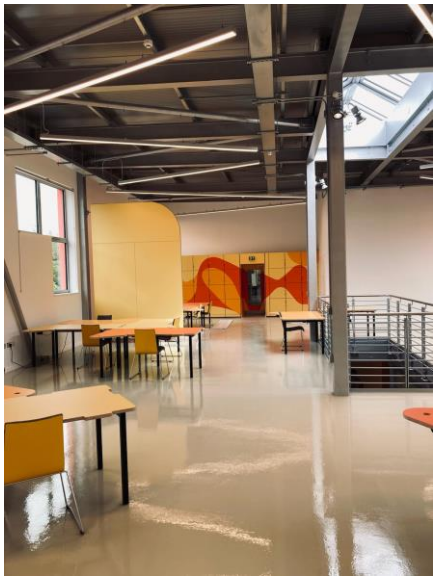
While the building work has continued, AUB have been piloting and testing the support programme to enable participants in the studio to develop working prototypes and robust business plans. This has included; Employability and Entrepreneurship Weeks bringing in external companies to deliver workshops on everything from Intellectual property to pricing work to finding clients, and AUB Advantage, an upskilling and work readiness programme, mentoring, entrepreneurial behaviours and design thinking. The support programme is ready to begin once the Studio officially opens in September.

Project start date	1st April 2017
Project completion date	5th March 2021

OUTPUTS AND OUTCOMES:

Outputs:

Outputs were the creation of the Innovation Studio. An innovative co-working space to incubate start-up businesses and deliver collaborative research and innovation projects. This project unlocked 0.16 HA of land and created 502 sq m of Learning Space.



Figures 1 and 2: Upper floor of Innovation Studio; flexible working/collaboration space

The project also enabled the creation of an additive manufacturing hub, a combined resource unique to the region. The emphasis was on building resources which would be difficult for most SMEs to invest in themselves and would support a range of prototyping activity. The printers include; Liquid Dense Material printer for clay or other ceramics, a large format printer capable of printing 1m by 1m and a carbon fibre printer. We are also seeking to improve our waste management and recycle waste plastic into reusable filament.

A list of individual items of equipment follows.

Recycling

Professional polymer extruder for ABS and PLA this will allow us to reuse our plastic waste by recycling it to create new filament for objects.

•Filabot Ex6 Extruder for recycled polymer x 2

Rapid prototyping

Machines to support quick 'looks-like' design iterations, or in some cases finished pieces. Ultimaker is a 'workhorse' printer, cheap to run and a good way to get early-stage prototypes before moving into another more costly process. Forms are more expensive but give excellent accuracy and detail, and are more durable. They are good for smaller pieces.

•Ultimaker x 2
•Form 3L

Large Pieces
Machine will support creation of large pieces, up to 1m by 1m, the size means there is some loss of detail. Possible applications include meditech, for example producing back braces from an individual's body scans. We can use our own recycled plastics or we can also print in multiple eco-friendly mediums i.e. starch based material.
•Delta Wasp 3 MT Industrial 4.0 Large FDM Printer

Non-plastic materials
We have also invested in machines that can work in different materials. We have a large and small liquid dense material printers. i.e. clay, ceramics we can also experiment with some foodstuffs and biodegradable materials. We have a large and small digital kiln to enable fixing of the LDM. We also have a Carbon/Kevlar printer which is incredibly strong and excellent for parts for robotics, aerospace/marine, and medical applications.

•Delta WASP Clay 2.0 Liquid Dense Materials x2
•Digital Kiln Fixer for Liquid Dense materials x2
•Markforge Mark 2 Carbon/Kevlar printer

Metal engraving
The additive print facility is part of a larger resource including CNC milling, CNC routing and other machines that allow the processing of different materials. This fibre laser engraver allows the marking of metal and other rigid substances.
•Trotec Speedy 300 with Co+Fibre technology Metal engraver

Outcomes:

The intended outcomes of the project are as follows:

OUTCOMES		**Unit**	**FY 2020/21**	**FY 2021/22**	**FY 2022/23**	**FY 2023/24**	**FY 2024/25**	**Total PROJECTIONS**
Outcome	**Definition**		**ANNUAL PROJECTIONS**					
Jobs/Created Safeguarded	The total number of newly created and safeguarded permanent full-time equivalent jobs as a direct result of the intervention at predetermined employment sites.	FTE	0	10	10	20	25	**65**
New Learners assisted		No.	0	20	20	20	40	**100**
Business Start-Ups Supported	Enterprises under 2 years trading or inception. Minimum of 2 days of support.	No.	5	10	10	10	9	**44**
Graduate Start-ups		No.	7	9	9	10	5	**40**
Land unlocked		HA	0.16	0	0	0	0	**0.16**

Learning floor space created		Sqm	502.75	0	0	0	0	**635**
Estate Grade			A	0	0	0	0	**A**
GVA from salaries to local economy		£	0	3.28m	3.28m	3.28m	3.28m	**13.12m**
Enterprises Receiving Non-Financial support	Number of SMEs receiving support (inc. advice and training) with the intention of improving performance (i.e. reduce costs, increase turnover/profit, innovation, exporting, minimum of 2 days of consulting advice).	No.	0	10	10	10	10	**40**

BENEFITS REALISED TO DATE

The building has already provided a focal point for discussions with the local business community and our graduates about the support available at AUB and our ambitions to support individual start-ups and the local growth and regeneration and upskilling agenda.

Full benefits from the Innovation Studio will be evident/realised after September 2021 when the first cohorts begin to use the space and we can fully launch the three interconnected projects including Innovation Resources and Innovation Suite.

FINANCES

We have already exceeded our match-funding obligations but will continue to record and report on our investment in the space.

LESSONS LEARNT

This was a challenging project; the original design had to be revisited to look at new ways of cladding; and the original plan to build with cross-laminated timber became unworkable due to rising costs of material in the lead up to Brexit.

In response to this AUB made the decision to redesign the building for a more straightforward construction process, while still retaining a distinctive look as befitting a flagship building to spearhead innovation in the area.

The new build project was affected by Covid restrictions.

Responding to these unforeseen challenges the project team have examined their process and recommended changes for future projects of this scale. Primarily, the need for a third party of external project management, independent of the Architects, to work with the construction company and the designers.

SUCCESS STORY

The project has been successful. AUB have created an exciting multi-disciplinary workspace. AUB are installing, deploying, testing the resources it contains as we are making it available to external companies, internal staff and students. Local, national and international businesses are showing interest in the facility and the possibilities of developing projects in Dorset.

Due to continued uncertainty over Covid restrictions and to enable proper calibration of equipment AUB are delaying the official launch till September

Dorset LEP	**Arts University Bournemouth**
Nimisha Loveridge nloveridge@bournemouth.ac.uk Tel: 07864 966357 https://www.dorsetlep.co.uk/innovation-studio	Daniel Cox dcox@aub.ac.uk Tel: Website