Cardiff Metropolitan University | Prifysgol Metropolitan Caerdydd

Case study

Working with *Sevenoaks Modular*

Cardiff Metropolitan University helps boost sales by introducing sustainable manufacturing methods at Sevenoaks Modular.

UK Research and Innovation

Ariennir yn Rhannol gan Lywodraeth Cymru
Part Funded by Welsh Government

Cardiff Metropolitan University helps boost sales by introducing sustainable manufacturing methods at Sevenoaks Modular.

The *Sponsors*

The Welsh Government and Innovate UK have invested in a diverse range of programmes to encourage and support industry-university collaboration. The longest established scheme is Knowledge Transfer Partnerships (KTP), which for nearly 50 years has helped businesses to innovate and grow by collaborating with a university to bring in new skills and the latest academic thinking to deliver a specific strategic innovation project.

KTP projects involve three key parties, a business, a university and a recent university graduate or Associate who is employed for the agreed duration of the project. The Associate, under the supervision of a university academic, transfers new knowledge from the university to help the business innovate and grow.

About the *Sevenoaks Modular* and Cardiff Metropolitan University KTP project

One industry-business collaboration is the highly successful KTP project between Sevenoaks Modular in Neath, and the Sustainable and Resilient Built Environment Research Group at Cardiff Metropolitan University. This project has optimised the design for manufacture, offsite manufacturing and erection of timber-frame closed panels for modern methods of construction (MMC) systems including walls, roofs and floors and developed a new modular MMC system. All the existing and new MMC systems use natural and renewable woodfibre and sheep wool insulation. This has pioneered the development of resilient, sustainable, and cost-effective prefabricated homebuilding in Wales for healthier occupants.

The collaboration with Cardiff Metropolitan University has supported Sevenoaks Modular in the UK to be at the forefront of innovative housebuilding solutions within the construction industry and to develop new products that are sustainable and cost-effective to produce. This has enabled the business to grow whilst at the same time ensuring it remains environmentally responsible by minimising its carbon emissions.

A total of £8.5m of sales turnover can be attributable to the KTP with a projected £28m to be resulting from the KTP in three years' time. This is due to the Welsh Government being committed to spending more than £1bn on building new social housing over three years (2022-2025) to meet the projected housing need. With Sevenoaks having a 28% market share and the expected growth in the market.

The *Company*

Established in 1996, Sevenoaks Modular has grown from a family business employing a small number of staff to a company with over one hundred and fifty employees. From the success of the KTP Sevenoaks became the largest offsite manufacturer of timber frame MMC systems in Wales in 2023 and is a market leading designer and manufacturer of sustainable timber frame components, supplying major national housebuilders, contractors, and housing associations across the UK.

The sustainability and impact on the environment of the products it manufactures is key for Sevenoaks Modular. Sustainability, together with its goals to recruit new staff and generate further growth are planned. These objectives are in alignment with the 2015 Well-Being of Future Generations Act, which aims to create a more globally responsible, prosperous and resilient Wales.

Charlotte Hale, Operations Director at Sevenoaks Modular, commented: -

"Working in collaboration, with Professor John Littlewood and the team at Cardiff Met has been fantastic. It has made us take a step back and resulted in the team changing our approach.

We couldn't have asked for a better partner than Cardiff Met, they have been so helpful and are always able offer the exact academic expertise needed for every problem. The project was looked by the university with such a positive attitude and commitment for the company to succeed in its goals, which is why I believe our project has had such a great outcome. I would advise any company considering a KTP to go for it, especially if Cardiff Met are your potential partner"

The *Associate*

Richard Hawkins, the follow-on KTP Associate and since completion has been employed by Sevenoaks as a R&D Sustainability & Design Engineer said: -

"I thoroughly enjoyed the KTP and the opportunity it presented to make tangible changes to a supportive business through the realisation of academic research. The dynamics of balancing the academic research, innovation, streamlining company processes and the focus on personal development and gave me a strong foothold in the industry. I enjoyed the range of opportunity, structure, responsibility and plentiful personal development. The dedication and commitment of both Sevenoaks Modular and Cardiff Metropolitan University made the experience invaluable and thoroughly worthwhile. It is great to now be working for the company and I am very much enjoying this unique and exciting opportunity that would not have come about without this KTP."

The *Academic Partner*

Prof John Littlewood, Professor of Sustainable and Resilient Buildings, and SuRBe Lead at Cardiff Metropolitan University commented: -

"Ensuring research and innovation has a positive environmental and globally responsible impact is a key priority at Cardiff Met, particular for the SuRBe research group. This KTP has enabled us to collaboratively solve a range of commercial and research challenges to increase the operational performance of Sevenoaks for them and their clients in Wales and across the UK. We have had many outstanding successes including our first Associate Verity Moorhouse, winning a KTN Future Leaders award in 2021, and supported Sevenoaks significantly to increase their market share with new and enhanced timber-frame MMC systems using natural and renewable insulation. Sevenoaks have employed Richard Hawkins the follow-on KTP Associate, to maximise their enhanced R&D focus to business operations and to realise the ongoing benefits of the KTP."

If you are interested in working with Cardiff Metropolitan University to help you boost your business, please contact Karl Couch (Business Liaison Officer) on kcouch@cardiffmet.ac.uk

To find out more about funding and support from the Welsh Government:

businesssupport@wales.gsi.gov.uk
business.wales.gov.uk
03000 6 03000

Sevenoaks Modular: www.somodular.co.uk

Cardiff Metropolitan University | Prifysgol Metropolitan Caerdydd

Astudiaeth achos

Gweithio gyda *Sevenoaks Modular*

Prifysgol Metropolitan Caerdydd yn helpu i hybu gwerthiant drwy gyflwyno dulliau gweithgynhyrchu cynaliadwy yn Sevenoaks Modular.

UK Research and Innovation

Ariennir yn Rhannol gan Lywodraeth Cymru
Part Funded by Welsh Government

Prifysgol Metropolitan Caerdydd yn helpu i hybu gwerthiant drwy gyflwyno dulliau gweithgynhyrchu cynaliadwy yn Sevenoaks Modular.

Y *Noddwyr*

Mae Llywodraeth Cymru ac Innovate UK wedi buddsoddi mewn ystod amrywiol o raglenni i annog a chefnogi cydweithredu rhwng diwydiant a phrifysgolion. Y cynllun sydd wedi'i sefydlu ers yr amser hiraf yw Partneriaethau Trosglwyddo Gwybodaeth (PTG) sydd ers bron i 50 mlynedd wedi helpu busnesau i arloesi a thyfu trwy gydweithio â phrifysgol drwy ddod â sgiliau newydd a'r meddylfryd academaidd diweddaraf i mewn i gyflwyno prosiect arloesi strategol penodol

Mae prosiectau PTG yn cynnwys tri pharti allweddol, busnes, prifysgol a myfyriwr sydd wedi graddio'n ddiweddar neu'n Gydymaith sy'n cael ei gyflogi am gyfnod cytunedig o amser. Mae'r Cydymaith, o dan oruchwyliaeth academydd prifysgol, yn trosglwyddo gwybodaeth newydd o'r brifysgol i helpu'r busnes i arloesi a thyfu.

Ynglŷn â phrosiect *Modiwlaidd Sevenoaks* a Phrifysgol Metropolitan Caerdydd

Un cydweithrediad diwydiant-busnes yw'r prosiect PTG hynod lwyddiannus rhwng Sevenoaks Modular yng Nghastell-nedd, a'r grŵp ymchwil Amgylchedd Adeiledig Cynaliadwy a Gwydn ym Met Caerdydd. Mae'r prosiect hwn wedi optimeiddio'r dyluniad ar gyfer gweithgynhyrchu, gweithgynhyrchu oddi ar y safle a chodi paneli caeedig ffrâm bren ar gyfer systemau dulliau modern o adeiladu (MMC) gan gynnwys waliau, toeau a lloriau ac wedi datblygu system MMC fodiwlaidd newydd. Mae'r holl systemau MMC presennol a newydd yn defnyddio inswleiddio ffibr pren a gwlân defaid naturiol ac adnewyddadwy. Mae hyn wedi arloesi datblygiad adeiladu tai parod gwydn, cynaliadwy a chost-effeithiol yng Nghymru ar gyfer preswylwyr iachach.

Mae'r cydweithrediad â Prifysgol Metropolitan Caerdydd wedi cefnogi Modiwlaidd Sevenoaks yn y DU i fod ar flaen y gad o ran datrysiadau adeiladu tai arloesol o fewn y diwydiant adeiladu ac i ddatblygu cynhyrchion newydd sy'n gynaliadwy ac yn gost-effeithiol i'w cynhyrchu. Mae hyn wedi galluogi'r busnes i dyfu ac i sicrhau ei fod yn parhau i fod yn amgylcheddol gyfrifol trwy leihau ei allyriadau carbon.

Gellir priodoli cyfanswm o £8.5m o drosiant gwerthiant i'r PTG a rhagwelir y bydd £28m yn deillio o'r PTG ymhen tair blynedd. Mae hyn oherwydd bod Llywodraeth Cymru wedi ymrwymo i wario mwy na £1bn ar adeiladu tai cymdeithasol newydd dros dair blynedd (2022-2025) i ddiwallu'r angen tai rhagamcanol. Gyda Sevenoaks â chyfran o'r farchnad o 28% a'r twf disgwyliedig yn y farchnad.

Y *cwmni*

Wedi'i sefydlu ym 1996, mae Sevenoaks Modular wedi tyfu o fod yn fusnes teuluol sy'n cyflogi nifer fach o staff i fod yn gwmni gyda dros gant a hanner o weithwyr. O ganlyniad i lwyddiant y PTG daeth Sevenoaks yn wneuthurwr systemau ffrâm bren MMC oddi ar y safle mwyaf yng Nghymru yn 2023 ac mae'n ddylunydd a gwneuthurwr cydrannau ffrâm bren cynaliadwy sy'n arwain y farchnad, gan gyflenwi adeiladwyr tai cenedlaethol mawr, contractwyr, a chymdeithasau tai ledled y DU.

Mae cynaliadwyedd ac effaith y cynhyrchion y mae'n eu gweithgynhyrchu ar yr amgylchedd yn allweddol i Sevenoaks Modular. Mae cynaliadwyedd, ynghyd â'i nodau i recriwtio staff newydd a chynhyrchu twf pellach yn yr arfaeth. Mae'r amcanion hyn yn cyd-fynd â Deddf Llesiant Cenedlaethau'r Dyfodol 2015, sy'n anelu at greu Cymru sy'n fwy cyfrifol, ffyniannus a chydnerth yn fyd-eang.

Dywedodd Charlotte Hale, Cyfarwyddwr Gweithrediadau Sevenoaks Modular: -

"Mae gweithio ar y cyd, gyda'r Athro John Littlewood a'r tîm ym Met Caerdydd wedi bod yn wych. Mae wedi gwneud i ni gymryd cam yn ôl a newid ein hymagwedd fel tîm.

Ni allem fod wedi gofyn am well partner na Met Caerdydd, maent wedi bod mor gymwynasgar ac maent bob amser yn gallu cynnig yr union arbenigedd academaidd sydd ei angen ar gyfer pob problem. Edrychodd y brifysgol ar y prosiect gydag agwedd mor gadarnhaol ac ymrwymiad i'r cwmni lwyddo yn ei nodau, a dyna pam rwy'n credu bod ein prosiect wedi cael canlyniad mor wych. Byddwn yn cynghori unrhyw gwmni sy'n ystyried PTG i fynd amdani, yn enwedig os mai Met Caerdydd yw eich partner posibl."

Y *Cydymaith*

Dywedodd Richard Hawkins, Cydymaith PTG sydd wedi cael ei gyflogi gan Sevenoaks fel Peiriannydd Cynaliadwyedd a Dylunio Ymchwil a Datblygu:

"Fe wnes i fwynhau'r PTG yn fawr a'r cyfle a roddodd i wneud newidiadau diriaethol i fusnes cefnogol trwy wireddu ymchwil academaidd. Rhoddodd dynameg cydbwyso'r ymchwil academaidd, arloesi, symleiddio prosesau cwmni a'r ffocws ar ddatblygiad personol droedle cryf i mi yn y diwydiant. Mwynheais yr ystod o gyfleoedd, strwythur, cyfrifoldeb a digonedd o ddatblygiad personol. Gwnaeth ymroddiad ac ymrwymiad Sevenoaks Modular a Phrifysgol Metropolitan Caerdydd y profiad yn amhrisiadwy ac yn hynod werth chweil. Mae'n wych bod yn gweithio i'r cwmni nawr ac rwy'n mwynhau'r cyfle unigryw a chyffrous hwn yn fawr na fyddai wedi digwydd heb y PTG hwn."

Y *Partner* Academaidd

Dywedodd Yr Athro John Littlewood, Athro Adeiladau Cynaliadwy a Gwydn, ac Arweinydd SuRBe ym Mhrifysgol Metropolitan Caerdydd: -

"Mae sicrhau bod ymchwil ac arloesedd yn cael effaith amgylcheddol gadarnhaol ac yn gyfrifol yn fyd-eang yn flaenoriaeth allweddol ym Met Caerdydd, yn enwedig ar gyfer grŵp ymchwil SuRBe. Mae'r PTG hwn wedi ein galluogi i ddatrys amrywiaeth o heriau masnachol ac ymchwil ar y cyd i gynyddu perfformiad gweithredol Sevenoaks iddyn nhw a'u cleientiaid yng Nghymru a ledled y DU. Rydym wedi cael llawer o lwyddiannau eithriadol gan gynnwys ein Associate Verity Moorhouse cyntaf, ennill gwobr KTN Future Leaders yn 2021, a chefnogi Sevenoaks i gynyddu eu cyfran o'r farchnad yn sylweddol gyda systemau MMC ffrâm bren newydd a gwell gan ddefnyddio insiwleiddio naturiol ac adnewyddadwy. Mae Sevenoaks wedi cyflogi Richard Hawkins, Cydymaith PTG, i gynyddu eu ffocws ymchwil a datblygu gwell i weithrediadau busnes ac i wireddu buddion parhaus y PTG."

Os oes gennych ddiddordeb mewn gweithio gyda Phrifysgol Metropolitan Caerdydd i'ch helpu i roi hwb i'ch busnes, cysylltwch â Karl Couch (Swyddog Cyswllt Busnes) ar kcouch@cardiffmet.ac.uk

I gael gwybod mwy am gyllid a chymorth gan Lywodraeth Cymru:

businesssupport@wales.gsi.gov.uk
business.wales.gov.uk
03000 6 03000

Sevenoaks Modular: www.somodular.co.uk