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Grangegorman

Building Education

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East and Central Quads

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The missing link

Grangegorman's East and Central Quads – built by a consortium that includes John Sisk & Son and FCC – are significant steps in the consolidation of the TU Dublin campus and an ongoing conversation between the Dublin 7 site and the wider city.

THE RECENT completion of two academic buildings totalling 52,000 sq.m. of floorspace in Grangegorman are important components in the ongoing transformation and opening up of a Dublin 7 site that has been intentionally and purposefully separated from the local community for the last 200 years.

Providing accommodation to 10,000 students and nearly 600 staff, the East and Central Quads also represent a big step towards bringing the former DIT schools that were scattered across the city together on one campus, as part of Technological University Dublin (TU Dublin).

“Back in the 2000s, we had up to 37 front doors all around the city from our large sites and also smaller leased premises,” says Dr Paul Horan, TU Dublin's Head of Campus Planning. “This arrangement was very inefficient, gave a very poor student experience and also had a lot of duplication of facilities. But most of all, there was lack of opportunity for students from different disciplines to interact. At the heart of this project is bringing students from different disciplines – and particularly related ones – together.”

As well as being such an important part of the TU Dublin and Grangegorman stories, the construction of the two buildings – at a cost of around €220m – is notable for having been achieved through the largest public private partnership (PPP) procured to date in the education sector.

“It's the biggest education PPP Ireland has brought out and was a really important part of enabling TU Dublin to achieve its goals.” Richard Osborne

The starting point for the rejuvenation of this 73-acre site and the construction of the new buildings was the Government's launch in September 2010 of an urban regeneration development programme to include state-of-the-art mental health and other facilities for the Health Services Executive, a purpose-built third-level education campus for TU Dublin and a range of other public amenities to be built on the grounds of St. Brendan's, Ireland's oldest public psychiatric hospital.

PUBLIC PRIVATE PARTNERSHIP

As part of the development, it was decided that the East and Central Quads – two of the more significant university blocks – would be delivered under a single PPP contract that would cover the design, build and finance, as well as maintenance over 25 years. The contract was procured by the National Development Finance Agency (NDFA) and from five submissions, three consortia were shortlisted and submitted final tenders.

The preferred bidder was announced as the Eriugena Consortium, a special purpose

vehicle that is 100% owned by Macquarie Capital and is supported by Sisk FCC – a construction joint venture between John Sisk & Son and FCC – and by facilities management services provider, Sodexo Ireland.

Macquarie Capital, the investment banking division of Macquarie Group, has had an interest in Ireland since the late 2000s, says Richard Osborne, a Senior Vice President at the company. “We've been supporting Ireland's PPP pipeline for many years, tracing all the way back to 2009 with the Schools Bundle 1 and the Schools Bundle 2.

He describes Grangegorman as the jewel in the crown. “It's the biggest education PPP Ireland has brought out and was a really important part of enabling TU Dublin to achieve its goals.”

Sisk, meanwhile, was attracted to the project because of its own extensive experience in educational projects, including the O'Brien Centre for Science and the National Institute for Bioprocessing Research and Training (NIBRT) at UCD, says Sean Stagg, a Project Director with the construction company. “This was a similar type of building, particularly the Central Quad with all of its science space,” he says.

“But we always like to do public works too. It keeps us focused on how the process of procurement and contracts works. Also, these public buildings are always going to be iconic and of a very high quality.”



Sisk and the international construction company FCC set up a joint venture partnership and combined their experience in educational projects and specialist expertise in PPPs.

DESIGN THINKING

Both buildings are quite technical. The East Quad, which houses the school of music, performance spaces, TV studios and productions halls, was a particularly complex design challenge to overcome, says Stagg. The Central Quad, with its teaching kitchens and laboratories and a tight site, also had some very specific and testing requirements.

“We put massive effort into the design and making everything fit into the buildings.”

Sean Stagg

“We put massive effort into the design and making everything fit into the buildings,” Stagg says. Separate architects were used, with AHR Architects responsible for the design of the East Quad, and Fielden Clegg Bradley in charge of the Central Quad.

“The East Quad as part of the tender was a complete redesign by the consortium,” says Osborne. “AHR did a fantastic job of thinking about how the space was going to be used, how students will interact with the space from different schools, and how the public was going to use the building. The architectural design really considered where TU Dublin was and has brought the existing spaces and facilities into the 21st century.”

CONSTRUCTION

Construction began on site just after Macquarie Capital announced financial close at the end of March 2018. Debt funding came from the European Investment Bank, MUFG, Sun Life Investment Management and Talanx Asset Management.

The joint venture had short construction periods for the two buildings – 26 months for the Central Quad and just 24 for the East Quad.

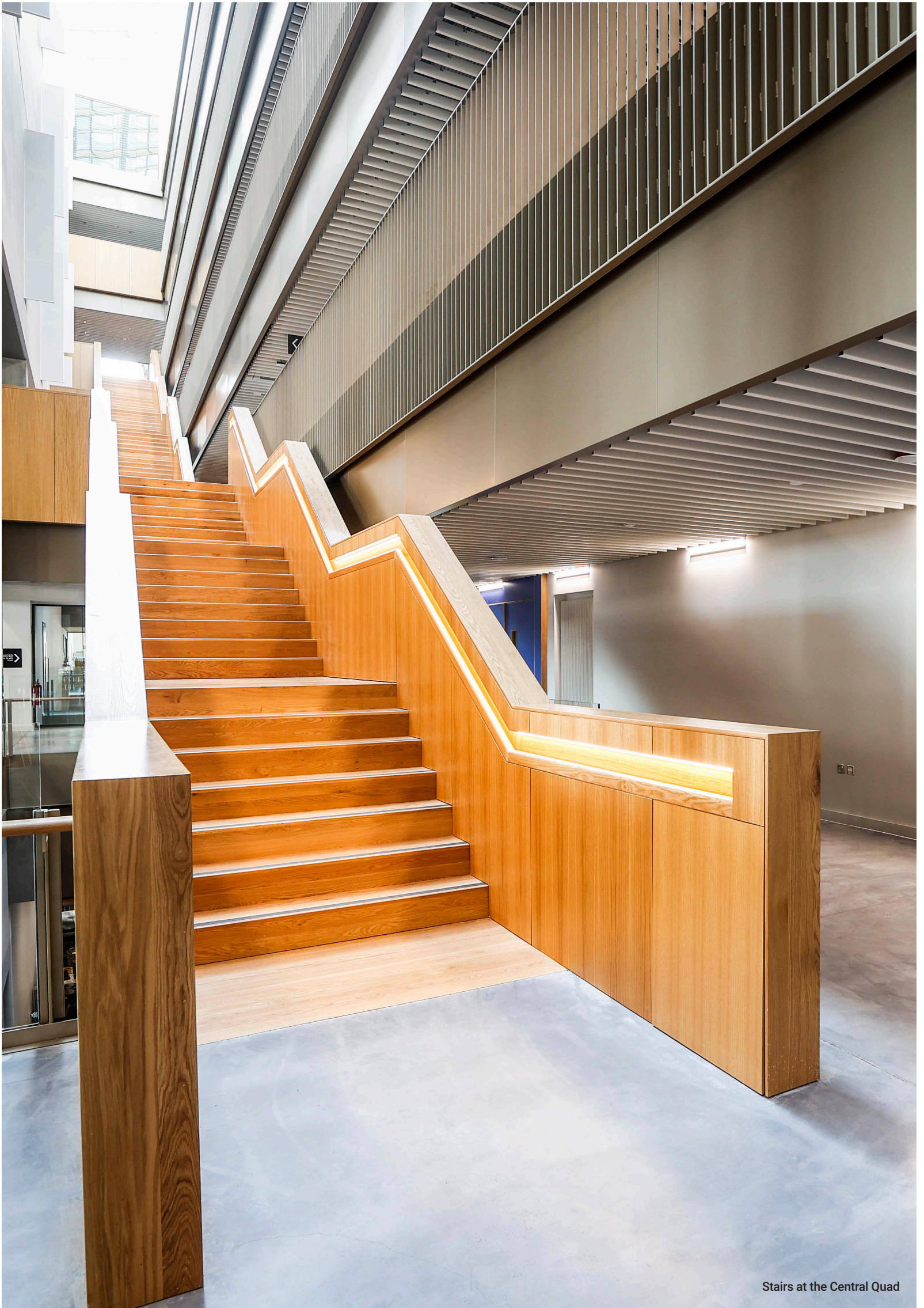
One thing that definitely worked was the strong collaboration between Sisk and FCC, says Ken Aherne, Director Ireland and Europe at John Sisk & Son. “It was interesting to see how that process worked and how the teams integrated. We noticed that both sides had strengths and we managed to work this to our best advantage. It was such a tight project there had to be give and take. Ultimately, because we were all trying to get the job done within programme everyone understood that the right people had to do the right jobs.”

Similar to other large, complex projects it involved a wide range of stakeholders, so stakeholder engagement and end-user consultation was a key part of the delivery process.

COVID

The initial lockdown from March 2020 posed another obstacle in getting the project over the line. FCC Construcción Project Director, Alfonso Morano Sanchez notes that the joint venture managed to keep the site open apart from the initial seven weeks of total lockdown.





Stairs at the Central Quad

The project in numbers

The two buildings provide 52,500 sq.m. of space and cater for 10,000 students and almost 600 staff between them.

The two quads involved a bulk dig of 54,000m³.

The Central Quad has 612 precast panels on its facade, covering an area of 9,850 sq.m. The cores in this quad are made up of 1,423 panels equating to 13,500 sq.m.

There are 1,360 doors across the two buildings. The cost of the project was €220m.

Eriugena designed, built and financed the construction of the two buildings and will provide facilities management and maintenance for 25 years. Under the terms of the agreement, the state will pay the consortium through monthly unitary charge payments that began as soon as the buildings became operational.



“Even when the site was closed, however, work on the design didn’t stop,” says Stagg. “Design meetings kept going and so did the team meetings. In preparation of the sites opening again, massive work was done by Sisk FCC and the Construction Industry Federation (CIF). We had to come up with a plan of what we needed to do to get the sites open again.

“Pre-Covid we had 1,200 people onsite across both quads,” he continues. “There were about 800 people afterwards. We introduced weekly testing for everyone after Christmas and brought in another 10 Covid marshals onsite to ensure there was social distancing. And we ended up having no outbreaks.”

The cooperation of the Grangegorman Development Agency throughout the build was a big help, says Morano Sanchez. “The GDA offered us additional space to increase our facilities and also to store materials. They really made it work.”

Technology played a huge part in the design itself and being able to continue the project in a time of travel restrictions. Stagg notes that neither set of architects has been able to return to the site since the beginning of Covid. “They snagged the buildings through a digital process of using 360-degree cameras and HoloBuilder software,” he says.

“As we worked through finishing the spaces, we had someone full-time going around taking photographs in the rooms so you could see every nook and cranny and they would snag it. Then we’d go back in after the snags had been done and retake the pictures so they could see that they’d been completed. That was just a constant process of Covid.”

Another interesting aspect, according to Morano Sanchez, is how much construction management has evolved since the project began. “When we started no project of this

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size had been done just in BIM in Ireland,” he says. “This was really new. We have all learned a lot about how a project should be managed in BIM.

“We have also seen how remote working, especially during the Covid lockdown, has been applied in the construction industry. We have learned ways of working that we’re going to be using from now on in the industry.”

HEALTH AND SAFETY

While a number of health and safety initiatives were in place throughout the lifecycle of the project, new elements around social distancing and Covid testing were introduced after the first lockdown.

Stagg says good communication was a key aspect of the overall project, including with regard to health and safety procedures and updates. Health and safety inductions carried out each morning for new people arriving to work on the project included

information on the site layout, access and exit routes, Sisk FCC’s S5 risk focus areas and site-specific rules.

New and updated information around legislation, accidents or incidents was communicated to staff through weekly talks. Regular safety briefings were also carried out with the Sisk FCC team on the project.

Whiteboard meetings carried out each morning with the Sisk FCC team and the supply chain supervisors were an important part of the day-to-day managing of health and safety on the project, as they provided information on relevant issues, workplace co-ordination, areas that would have to be closed off due to works, deliveries, crane activities, and so on.

“At the end of the project, the client complimented us on our health and safety record for the duration of the contract, which is something we pride ourselves on,” says Stagg. “We want people to come in, do a day’s work and go home to their families in the evening.”



The East Quad

The East Quad is on the eastern side of the campus and is the first TU Dublin building after the Luas stop in the new public realm of the Broadstone plaza. Home to the university's arts disciplines – including creative arts, design, music, social sciences, drama, media and law – was designed to cater for 3,500 students and 160 staff.

As well as a suite of classrooms, workshops, studios and informal learning spaces, the building has a 400-seat concert hall, the 50-seat Black Box theatre, a recital hall with capacity for 80, and a café. Other facilities include recording, TV and teaching studios and editing suites.

The building, which extends to 16,500 sq.m. across five floors, was designed by AHR Architects. AHR and Eriugena departed from the exemplar design that accompanied the original brief to create a series of dramatic atrium spaces to allow the creativity of the students to be experienced and shared.

The architects say double and triple height learning spaces combine with tightly controlled enclosed spaces to give a rich mix of formal and informal learning opportunities. They say the created natural gathering points throughout the building that actively encourage collaboration, leading students from the different creative disciplines to interact, exchange ideas and develop valuable relationships.



Health and wellbeing were another big priority. The project team engaged with the Construction Industry Federation to bring in Rory O'Connor of Rory's Stories who gave a talk to the workforce on mental health. "That was very beneficial and went down really well," Stagg says.

Several members of the Sisk FCC team trained to be I Am Here ambassadors, which gave them the tools and confidence to point other team members to a range of mental health and wellness supports and services within the company and the community.

"The new buildings have made a big contribution to the overall masterplan for Grangegorman."

Conor Sreenan

Construction was completed on the East Quad last October and the handover to TU Dublin took place in December. Handover on the Central Quad, meanwhile, was in March of this year. Sisk FCC was also involved in managing the move from the various colleges around town into the new buildings. "That

took a number of months for each building," says Stagg.

THE NEW GRANGEGORMAN STORY

Conor Sreenan, Director of Strategy and Design at the GDA, says the new buildings have made a big contribution to the overall masterplan for Grangegorman. "Up to the delivery of those two quads, the project had been preoccupied with the western side of Grangegorman lower. Now the East Quad, combined with the opening of Broadstone



Central Quad

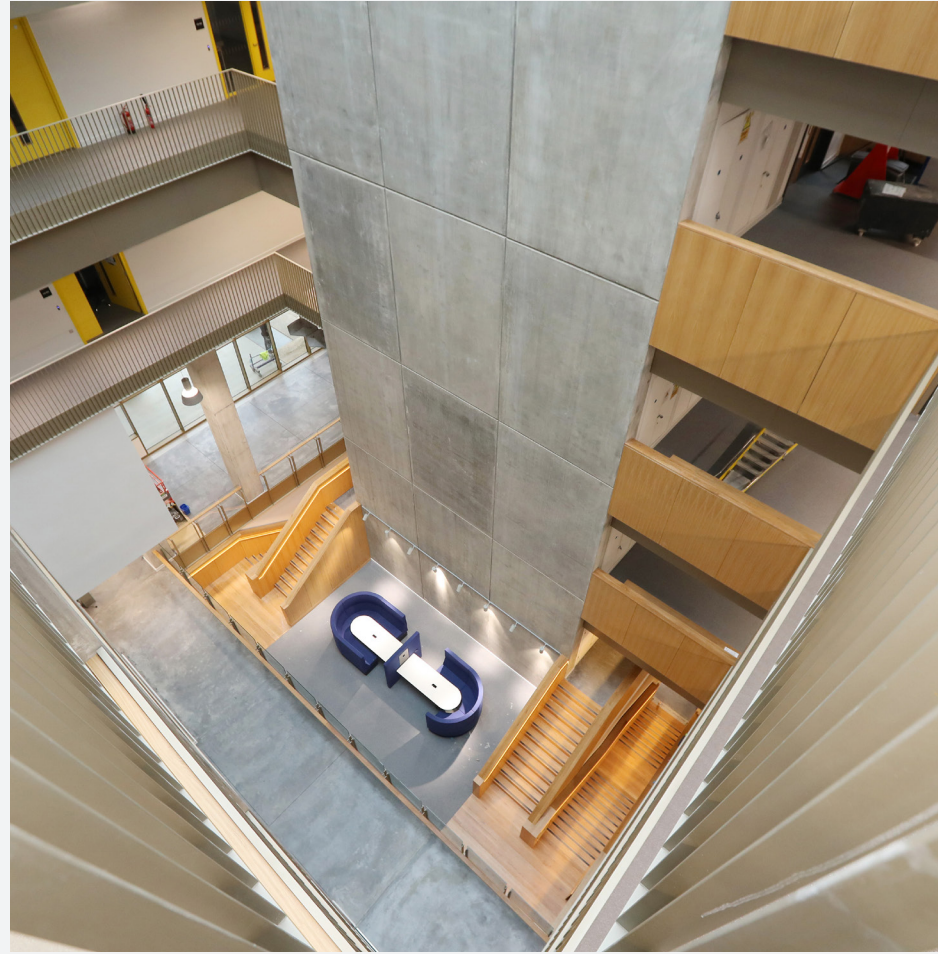
Located in the centre of the new campus, the Central Quad is the largest building in Grangegorman, accommodating 6,500 students and 400 staff in the food, sciences, health and engineering disciplines. It's the new home to all six schools from the College of Sciences and Health (previously located in Kevin Street), two schools from the College of Arts and Tourism (Cathal Brugha Street) and one from the College of Engineering and Built Environment (also Kevin Street).

The building brings together the academic activities and facilities relating to biological sciences; chemical and pharmaceutical sciences; computer science; food science and environmental health; mathematical sciences; physics and clinical and optometric sciences (including the National Optometry Centre); culinary arts and food technology; hospitality management and tourism; and electrical and electronic engineering.

Facilities include wet and dry laboratory spaces, workshops, kitchens, support spaces, teaching restaurants and the 250-seat Intel Theatre. Other spaces include informal learning and common areas, staff accommodation and building support.

The large, open entrance lobby includes a café and bakery selling goods made by TU Dublin's culinary arts students. Two student restaurants are also located in the building. Total internal area across six floors and a half basement is 36,000 sq.m. It was designed by Fielden Clegg Bradley, built by Sisk FCC and completed earlier this year.

The architects describe the building as being a contemporary and dynamic interpretation of the classic university quadrangle, split into two L-shaped forms around a landscaped courtyard. A colonnade provides shelter and a collegiate atmosphere. Large windows look inwards to the green space of the quad and out to the campus and its neighbourhood.



Plaza sets up a new story of Grangegorman, linking it to the north inner city.

"When you come from Constitution Hill now, you can walk 24/7 through the Broadstone Plaza and the first flank you meet is the eastern gable of the East Quad. That's starting to set up the fundamental principles of the masterplan to generate a sweep east-west through the site and keep that open to the public.

"Opening up that part of the city was a fundamental part of the masterplan design. That link has been waiting for about 300 years."

The completion of this project is the start of something bigger, he says. "People often think that Grangegorman is finished when

they see these new buildings. But they really should treat them as the beginning of a conversation with the city that's going to go on and is gathering a bit of pace now.

"So, the quads are great achievements of themselves but from our perspective their bigger contribution is to trigger the next steps."

For TU Dublin, the East and Central Quads offer a step change in terms of bringing people together and the quality of the environment. "Some of our buildings were functional and some were very poor," says Horan. This gives us a really high quality, modern, state-of-the-art environment that we're proud to welcome students to."

The new set up allows for greater efficiencies. Horan says many of the students now housed in the Central Quad have common strands in their courses that were being duplicated across different schools. Likewise, the East Quad brings together students across the creative and arts areas from various locations. "These quads will allow those students to work together and collaborate and will allow us to offer more choice and be more efficient in our delivery of class groups.

"The last year has shown us that it's very hard to replicate the experience of being in a lab or workshop, or performing live to an audience," says Horan. "When we



were planning, we were forecasting that the need for very large lecture theatres would eventually peter out as those things move online and so it has proved. We have a relatively small number of large lecture theatres for traditional broadcast.”

On the other hand, there’s a wealth of informal learning space. “When students come out of a lab or workshop, there’s space to sit down and discuss, work on a project jointly and suchlike. This supports the reason students come to campus, which is that they need to interact with each other.”

Horan stresses that the NDFA was central to managing the PPP process on TU Dublin’s behalf as the key representative of the state. “It was a complex and challenging project but everybody worked together to get the best outcome from it. We are hugely grateful for that and really commend the work and determination of everybody involved. The end result is so good.”

Andrew O’Flanagan, Director of the NDFA, noted that “the completion of this large and complex project is great news for the students and staff of TU Dublin and for the wider community in the Grangegorman area and marks a significant milestone in the development of this new campus. The delivery of these state-of-the-art buildings on the TU Dublin city centre campus is the result of a successful collaboration over many years between the NDFA, TU Dublin, the Grangegorman Development Agency and the Department of Further and Higher Education, Innovation and Science, in partnership with PPP Co. Eriugena, Sisk FCC and their supply chain partners. The NDFA is delighted to have played a part in delivering the facilities and would like to thank all stakeholders for their cooperation and support along the way.”

According to Osborne, “We’re exceptionally proud of this project and I can’t stress enough how amazing the buildings look. It’s right at the top of Macquarie’s investment opportunities that we’ve developed in the educational space. The robustness that Sisk and FCC put into the finishes and ultimately the quality of the final product is really astonishing. They’ve done a fantastic job.

“Like all projects it’s had its ups and downs but, in the end, Sisk and FCC have done the most incredible job. They really battled for it and their perseverance and commitment to making the project work and making it a success is very much appreciated, certainly by Macquarie.”

Sisk is very proud of its involvement in a project of this scale, quality and importance to the city, Aherne says. “It is a wonderful development,” he says. “There is a great sense that we built something that is cutting edge, state-of-the-art and a wonderful building for students to enjoy.



Joe McHugh TD, then Minister for Education and Skills, David FitzPatrick, President TU Dublin, Paschal Donohoe TD, Minister for Finance, Donal McCarthy, Chief Operating Officer Ireland and Europe, John Sisk & Son, Gerrard Casey, CEO of Grangegorman Development Agency.

“One thing I would say about the process is that we have produced fantastic buildings. The counterpoint to the pain of construction is that the legacy that’s left afterwards is two tremendous buildings.” Ken Aherne

“The landscape is stunning. When it’s at its best in the summertime, the locals, who have endured years of construction, will get to enjoy the resource.

These quads will integrate into and for the local area in due course. They’ll be used by the locals and you can see how the wider campus will become a focal point for the whole community to relax and enjoy themselves.

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