



University of Northampton, Northampton



The Waterside Campus Development of a main campus with five main teaching buildings

Client

The University
of Northampton,
Northampton

Architect

Moses Cameron Williams,
Cambridge & CPMG,
Nottingham

Structural Engineer

Arup, Nottingham

Quantity Surveyor

Turner & Townsend,
London

M&E Services Engineer

Derry Building Services,
Newark

Project Manager

MACE Limited

Services Engineer

CWP, Solihull

Value

£123m

Completed

July 2018

Contract Period

122 weeks

Nature of Project:

The University of Northampton has undertaken one of the most dramatic changes to Northampton in the town's history with a £350M Project which will involve two university campuses totalling over 13,000 students being relocated to the Waterside Enterprise Zone, a 58-acre brownfield site located adjacent to the town centre on the River Nene.

The impact on the town will be enormous, bringing to life a neglected section of the borough and potentially reviving the fortunes of the town centre.

The University's focus is on building a community university which will benefit the wider community of Northampton – the new campus will promote a 'Blended Learning Environment' – small class teaching rather than the 'lecture hall' model, Students consume the materials beforehand and the lecture is then a discussion based on what has been learnt.

Bowmer + Kirkland were appointed by the University to undertake the Construction of the new University Academic Buildings and Public Realm works. B+K also undertook a Principal Contractor role for the entire site, co-ordinating the other Main Contractors and being responsible for site-wide health & safety and logistics.

The scheme was successfully delivered on programme and within budget and ready for the first student intake in September 2018.



University of Northampton, Northampton

**BOWMER
KIRKLAND**

Scope Of Works:

The Academic Building and Public Realm scope consisted of the following:

1. Learning Hub

The design and build of a Learning Hub which is the beating heart of the campus. A pioneering hub of all academic activities, providing multi-faceted learning and social spaces and the University's interactive library. The building will be used for learning commons, shared teaching facilities, student administration, academic workshops and catering.

- Approx. 21,000m² internal floor area
- 5 storey post-tensioned concrete frame structure
- Mixture of rainscreen cladding and glazed curtain walling elements (glulam timber & aluminium) to the facades
- High quality internal finishes
- Construction period 110 weeks

2. Creative Hub

The University's creative spirit captured in an inspirational building. A place for learning through doing, with specialist facilities to enhance creative and scientific skills. The building will be used for specialist teaching such as media, the arts, photography, music & laboratories and café facilities

- Approx. 9000m² gross internal floor area
- 4 storey post tensioned concrete frame
- Mixture of rainscreen cladding, render and glazed glulam timber curtain walling elements to the facades
- High quality internal finishes
- Construction period 98 weeks

3. Senate Building

The public face of the University to welcome visitors, with a core academic role. A place to present, exhibit, listen & learn. Includes the only Harvard lecture theatre on campus. This building will consist of the campus reception, general teaching facilities, seminar rooms and conference facilities as well as catering.

- Approx. 5200m² internal floor area
- 5 storey steel framed structure
- Mixture of rainscreen cladding and glazed glulam timber curtain walling to the facades
- High quality internal finishes
- Construction period 76 weeks

4. Engine Shed & Associated Office Building

Transforming a derelict Grade II Listed Railway Engine Shed & Engineers Office Building into a vibrant home for the Students' Union. Situated to the south side of the site, a sympathetic refurbishment was undertaken, retaining as much of the original building features as possible with close liaison with Heritage & Conservation officers.

- Approx. 300m² internal floor area
- Extensive & sympathetic rebuilding using original materials wherever possible
- Utilisation of specialist proven heritage subcontractors to undertake the work
- Creating a feature of the existing rail tracks
- Construction period 82 weeks

University of Northampton, Northampton

**BOWMER
+ KIRKLAND**

5. Sports Complex

Design and build of new comprehensive sports facilities:

- Single storey masonry sports science teaching building
- Single storey masonry changing pavilion
- Bespoke sports dome catering for indoor sports
- Floodlit full size all weather pitch accredited to FIFA and World Rugby standards
- Multi-use games pitches

6. Logistics Building

At the SE corner of the site, the University's facilities department is located in a newly constructed Logistics Hub facility, providing internal office space, workshop space and external service yard.

7. Public Realm

Extensive hard & soft landscaping works were undertaken across the site, including car parks, swales, external furniture & signage

- Over 1000 new trees planted
- Permeable paving to car parks
- 20,000m² of turf laid
- 30,000m² of paving laid
- ANPR systems & barriers to car parks
- Bus gates including rising bollards
- Resilient anti-terror measures installed

Project Challenges:

The Bowmer + Kirkland Project Team had to overcome many challenges during the project. Some of the more significant challenges posed included:

- Access to the site was through a residential estate. To overcome the issues presented by this, a number of measures and initiatives were undertaken – a social impact community liaison manager was employed; the permanent 250 vehicle car park was constructed early; a delivery management system was employed which restricted delivery times and quantities; an eco-friendly dry wheel wash was utilised together with permanent roadsweeping; noise and vibration monitoring was undertaken at the boundaries; regular newsletters were issued to residents; a new landscape feature was installed to enhance overgrown areas of the estate road.
- The site was adjacent to the River Nene to the north and Hardingstone Dyke to the south. Fenced off 'Ecology Zones' were introduced, with every site operative receiving an environmental tool box talk during induction; a watercourse protection scheme was drawn up, utilising the new site drainage system as attenuation and then filtering this grey water via siltbusters for re-use in roadsweepers and boot wash facilities; new fences were installed and maintained to the dyke; an Ecologist was employed to regularly review any effect on ecology along the river bank; works required along the riverbank were reviewed and agreed with the Environment Agency

University of Northampton, Northampton

**BOWMER
+
KIRKLAND**

- A Public Right of Way ran through the centre of the site, which had to be maintained throughout the course of construction. This was achieved by fencing which required regular relocation to facilitate works on site. This fencing and the integrity of the PRoW footway was inspected daily. Signage and information boards were posted at regular intervals along the fencing to keep the public informed.
- Avon World Headquarters building was adjacent to the site. Pre-start and then regular meetings were held with Avon management to keep them informed of current and upcoming construction activities; noise and vibration monitoring was undertaken on the neighbouring boundary; specialist protective sheeting was provided and installed to Avon air intakes
- Contaminated ground was present on the site. This required a very detailed Construction Environmental Management Plan (CEMP) and Materials Management Plan (MMP) to be produced and adopted, with approval and agreement with the Environmental Health Officer and Planners
- Areas of the site contained Japanese Knotweed. These areas were fenced off, signed and underwent a treatment regime by a specialist contractor. B+K and subcontractor personnel were trained in the recognition of Japanese Knotweed so that any new areas could be quickly identified
- Both Western Power and Anglian Water easements ran across the site in multiple locations. Early engagement with both authorities enabled designs to take into account these easements and any restrictions these services posed on the new construction. Any excavations required to these areas were undertaken by vacuum excavation
- A Western Power substation was present to the SE corner of the site, requiring 24-hour access for the duration of the project. This entailed the site security details being provided to WPD, and also ensuring that a safe and suitable vehicle route was provided through the site to the substation at all times.

Health & Safety Features:

A number of H&S initiatives and best practices were undertaken on the site. Some examples are as follows:

- A biometric turnstile was provided for access onto the site which operates through biometric palmprint reading and CSCS cards.
- Site logistics plans were developed using Sketchup 3D software with flythroughs and presented at operative induction and displayed on TV monitors throughout the welfare accommodation.
- The entire site was provided with early installed tarmacked roads including one way systems and dedicated loading areas with fully segregated pedestrian walkways throughout
- A dedicated H&S and Logistics manager was provided on the Project
- Dual colour hi-visibility vests were worn by B+K Managers to provide easy visibility. Also, different colour vests were worn by Academic contractor operatives to residential, infrastructure and energy centre to provide easy identification
- Sound reducing cutting booths were utilised by the M&E contractor
- Vacuum extraction was a requirement for all cutting tools on site
- Vacuum excavation was utilised within 1m of any service
- Safety quizzes and green cards were promoted with monthly prize incentives

University of Northampton, Northampton

**BOWMER
+
KIRKLAND**

- FORS & CLOCS promoted
- Wireless fire points (WES+ system) were provided to all plots with a central station within the site reception
- A defibrillator was provided on the site hoarding for both site and community use
- Various trade fairs were undertaken on site with suppliers showcasing the latest innovations in H&S equipment and PPE
- On-site and off-site H&S training was provided to both direct staff and subcontractor operatives throughout the project

Environmental Features:

The site management team supported by our Head Office Environmental Manager continued to monitor the Projects interfaces with the River Nene and Hardingstone Dyke throughout the project. Regular discussion with the Environment Agency took place and controls were implemented to ensure that the construction did not impact on the existing ecology and biodiversity.

Environmental KPI's inclusive of water and energy were established, displayed, monitored and promoted down to operatives level through the induction process and TV monitors located in the welfare area and also the immediate neighbours through the external community notice board and the circulation of environmental newsletters.

Noise monitoring to the sensitive site boundaries was undertaken on a daily basis.

Dust and mud monitoring was undertaken with a dedicated full time roadsweeper and dust suppression plant on site. Early installation of tarmac hardstandings on the Project contributed to a considerable reduction in mud and dust. Rainwater harvesting was utilized for the damping down

facilities and also the site bootwash facility. A dry wheel cleaning facility was also provided.

Eco cabins were provided for the site accommodation and early installation of the on-site car parking facilities prevented off-site parking in the adjacent residential areas. A green travel plan and car sharing was promoted. Carbon footprint monitoring and mileage capture was implemented on site.

Social Impact

The University and Bowmer and Kirkland launched an art competition for local school children and young people to become more involved with the Waterside Campus.

The two partners encouraged local school children to create an image showing what living in Northampton means to them. The entries were then judged and the best artists were invited down to paint the final designs onto the hoardings which will be seen by thousands of people, visitors and residents.

The winners were 112 pupils from Delapre Primary School and 11 children belonging to the Bowmer and Kirkland site team and other sub-contractors.

The design created was the Waterside Express – a train with carriages depicting the highlights of Northampton. The outline of the design was drawn by local entrepreneur and artist, and University of Northampton graduate, Marvin Mudzongo of Lemonpop Workshops. He used the ideas from the children's artwork to create the design in the carriages.

The Waterside Express was one of 70 entries submitted to the national Considerate Constructors Scheme for the Ivor Goodsite Hoarding Competition and was declared one of the winners.

University of Northampton, Northampton

**BOWMER
+ KIRKLAND**

Apprentice Opportunities

Volkan Aslan, a University of Northampton Architectural Technology graduate, did a five-week placement with Bowmer and Kirkland, and was then offered a position of a 'Trainee Design Manager'.

Lewis Jones from Quarrydale Academy in Sutton in Ashfield, and Donell Smith from Northampton College, both completed their work experience on the Waterside Project. Due to their hard work, they were then offered apprenticeships by Derry Building Services who are part of the Bowmer and Kirkland Group.

Lewis, although not from a local college, contacted Bowmer and Kirkland for work experience and was given the opportunity to work on the Waterside Project. Lewis was in his final year of GCSEs at the time of his work experience. He is about to complete the first year of his Electrical Apprenticeship with Derry Building Services, studying for his NVQ Level 3 in Electrical Installation.

Donell was studying Electrical Installation at Northampton College during the time of his work experience. Donell was then offered an apprenticeship with a Northampton based subcontractor to Derry Building Services on the back of his efforts on his work experience.

Recycling Wood Waste

Bowmer and Kirkland worked with Community Wood Recycling to recycle the wood waste that is collected from the Waterside site.

Community Wood Recycling - the trading arm of a social enterprise called National Community Wood Recycling Project - collects wood waste in caged trucks and loads them by hand. This method enables

them to eliminate the void space that accounts for up to 40% of a skip's volume, meaning fewer skips are needed over the course of a build. They are one of very few firms that reuse and recycle timber, rather than just sending it for chipping. This allows for an efficient and cost effective method of collecting all types of wood waste. By doing this the social enterprise aims to save resources by reusing and recycling waste, while creating jobs, training and volunteering opportunities for disadvantaged people.

Client Satisfaction:

"The best Project we have seen since the Olympic Park"
Members of ICE (Institute of Civil Engineers)
including Sir John Armitt CBE (President)

"A Project you can all be proud of"
Jane Newton, CIOB

"I would like to congratulate and thank Emma and her colleagues in B+K for all their support in making the 'good stuff' happen"

Professor Simon Denny, Holder of The Queen's Award for Enterprise Promotion, Executive Dean: Research, Impact and Enterprise, The University of Northampton

Awards

The Project has received 'Exceptional' scores in all categories from Considerate Constructors visits on several occasions, and is a 2017 CCS Award Winner, receiving the following summary:

"This is an exceptional site throughout - which should be used as a flagship for all construction sites. The commitment and enthusiasm shown throughout management and its team is outstanding".



University of Northampton, Northampton

**+BOWMER
KIRKLAND**

The Project is also a 2017 CCS Hoarding Competition Winner

"My final words would be a huge thank you for letting our children be a small part in such a wonderful project organised so well. The many 'tweets' sent out have been seen by so many parents and further demonstrates the amazing work that takes place in the school and the finished item is just brilliant and eye catching. We also are delighted with the additional projects and links with B+K that have come from the original task. So once again, GREAT PROJECT and loved every minute of it - our thanks from all at Delapre!" – Harry Portrey, Headteacher Delapre Primary School.

BREEAM 'Very Good' achieved (Design Stage)

University of Northampton, Northampton

**BOWMER
KIRKLAND**

