

Straightening out a rabbit warren



Leicester University Students' Union building was notorious for its confusing layout, but a refurbishment and modern extension has created a building fit-for-purpose, Mark Smulian reports

'It was a confusing mass of twisting staircases, [...] unexpected destinations and a baffling layout for new students to negotiate'

From rabbit warren to sustainability showpiece, Leicester University Students' Union's building has undergone a radical transformation by contractor Morgan Sindall, turning it into what the union now claims is among the best in the country.

The original building, named after university benefactor Percy Gee, was opened in 1958 with a bizarre design on a sloping site that meant that although there were only five basic floors, within that there were 35 separate levels.

It was a confusing mass of twisting staircases, small flights of steps, corridors that led to unexpected destinations and a baffling layout for new students to negotiate.

As for disability access, forget about it. One lift was installed in the 1990s but apart from that it was extremely difficult for disabled people to use the building.

Your correspondent, a student at Leicester in mid-1970s, can attest that it was hard to stand anywhere in the Percy Gee and say with certainty what was beneath you, so confusing was the layout.

That was not all. The original building was a U shape with the centre of the 'U' wasted space, empty except for some boiler houses and a car park, so requiring a lengthy walk between the two wings.

Its frontage onto the campus was a formal entrance, but to those entering the campus from the main road only parked cars, boilers and stored beer kegs were visible.

By 2008 it had become obvious to the university that the building was on its last legs, not least since the numbers of students on campus needing to use it had soared from 3-4,000 in the 1970s to some 12,000.

Fortunately, the university at that time had a substantial capital fund for a building programme that takes in a number of projects on the campus.

It was thus able to find £15.3 million of the £17.1 million needed from its own resources, with remainder coming from grants and donations.

Architect Shepheard Epstein Hunter designed the refurbished building as part of its masterplan for all developments on the campus.



Opposite LUSU during refurbishment
Top: The Square
Above: The Square under construction

'The building was underpinned for the work because, among its oddities, the site slopes in two directions'



The roof under construction

The main idea was to turn access to the building round, blocking off the former entrance and creating a new one onto the main entrance road.

This plan uses the formerly empty part of the 'U' so as to create a rectangular building, integrating the new part with the old and taking the opportunity to get rid of at least some of the 35 levels within.

"What we could see when we arrived was fairly awful, it was a complete rabbit warren, obviously out of date, and we were told that when they took people round they got lost; it was run down and not functional," says Nick Hilton, project manager for main contractor Morgan Sindall.

The empty section of the former 'U' has now been filled and a wide flight of steps leads to a large light area known as The Square, an informal place for people to meet surrounded by cafes and shops.

It is covered by a glass roof and crossed at its upper level by a bridge, and on its own floor by adjacent suspended walkways that allow the middle of the building to be crossed without negotiating the Square's dining tables.

This being the Percy Gee, the bridge is not entirely straight, since one of its purposes is to join the old parts of the building across the Square and the old wings are at different levels.

Morgan Sindall arrived on site in June 2009 just after the union's Summer Ball and had a deadline to finish the work by September 2010, in time for that year's Freshers' Ball.

That timetable gave builders two summers when few people were around, but still meant much of the work had to be completed during the academic year when the building was in use.

Hilton explains how it was done: "There was a lot of upfront planning needed to allow the students' union to function around a construction site with a lot of temporary hoardings.



'Air conditioning for the nightclub is required only when it is full, at which point carbon dioxide sensors trigger a mechanical ventilation system'

"Certainly it was difficult to be opening and closing areas while people were moving between them, it was like a giant jigsaw puzzle.

"We worked while the students were there with our staff having passes so they could go from wherever we were working into the parts of the building still in use."

This led to some curious solutions to keeping things functioning. For example, a gymnasium had to be kept open even though it was sited next to area that was being entirely rebuilt with new floors.

Morgan Sindall solved this by building a tunnel under its work area through which gymnasts could gain access.

The building was underpinned for the work because, among its oddities, the site slopes in two directions, though "the ground conditions themselves were not difficult," he says.

Standard pad foundations were used and a steel frame built on them. This is fixed to the original building and at the top of each steel tower a 10.5m glulam beam has been placed to support the curved roof. The bridge is fixed to the steel frame and the walkways hang from it.

All the mechanical and electrical services were refurbished, as were almost all of the 273 rooms.

Perhaps the main new feature of the refurbished building is its

nightclub, below the Square, which the students' union now runs in partnership with the O2 Academy chain of venues.

This replaced a cafeteria but had to be deepened by excavating below the original floor, to create a sunken dance floor with an upper gallery area where the ground floor had been.

Air conditioning for the nightclub is required only when it is full, at which point carbon dioxide sensors trigger a mechanical ventilation system to increase the air supply. At other times it can draw ventilation from a tower that rises through the Square to the roof.

This is one of many sustainability features that have seen the university apply for a BREEAM 'excellent' rating for the Percy Gee.

These include a rainwater harvesting system, installed as part of the refurbishment, which collects water on the roof and stores in the basement for use in flushing toilets.

Natural lighting can be used for the square on all but the duller days, and a gap deliberately left between the square's floor and the walkways allows natural light to penetrate into the concourse outside the nightclub, previously an almost windowless area.

The glass roof and partly glass wall of the square also allow natural light into much of the building, and the square's windows are all on a building management system, which senses



Opposite: Performance at the LUSU nightclub
Left: Complete refurbishment of the Percy Gee Building

temperature and carbon dioxide levels and adjusts the amount of fresh air entering.

Renewal of mechanical and electrical services had included rewiring using modern, energy efficient light fittings, and heat is now mainly sourced sustainably from a biomass woodchip boiler, backed up by a gas boiler in case of disruption to supplies.

The original building was built with load bearing, thick brick walls and solid floors, giving a good thermal mass. Floor slabs in the new section are heavy concrete construction, adding to this effect.

Day to day liaison with Morgan Sindall was through Ambalavanar Kumaran, deputy chief executive of the students' union. He says the project has been a success in providing a union building that is now "an attractive environment and a focal point for the campus, the main attraction is the Square which we think of as being the campus' 'living room'. It's one of the best student union buildings in the country."

This improved environment has enabled the union to attract big name business partners such as O2 Academy.

"They are a well-known brand in live music, and the nightclub means we have a venue that can attract the biggest names," adds Kumaran.

Union president Alex Nutt was a student throughout the

refurbishment period. He says: "Students were understanding about the builders' needs because they could see the building needed refurbishment and were looking forward to completion, so they were patient with the disruption.

"Our staff were patient too, even though some had to move office two or three times but they knew they would be getting a better working environment as result.

"It's been fantastic, the students love the new building and it's busy all the time."

No doubt the students also love being able to find their way around easily.

Client – University of Leicester
Main contractor – Morgan Sindall
Architect – Shephard Epstein Hunter
Structural engineer – Scott White & Hookins
Environmental engineer – WYG
Cost consultants – MDA
Project manager – Currie & Brown
CDM co-ordinator – Faithful & Gould