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Post-Occupation Evaluation Study Report

David Ross Sports Village

March 2025

BUILDING UNDERSTANDING

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INTRODUCTION

Building Understanding was asked to conduct a Post Occupation Evaluation (POE) of David Ross Sports Village (DRSV) on behalf of the University of Nottingham. The building was completed in September 2016. However, for several reasons, including outstanding defects and the COVID pandemic, the POE did not commence until September 2024. The POE focussed on the original build, but due to the length of time that the facility had been in operation, there was an increased understanding of issues, such as ongoing maintenance. As a user satisfaction study was conducted as part of the POE, the university's Sport team also wished to gather feedback on facilities, which were not included in the POE, on demographics and on user experience. The findings from this are included in a separate section of this report.

Interviews, conducted via Microsoft Teams, were used to gather data from the project team and university stakeholders. A one-day on-the-ground study was used to obtain feedback from centre users and staff via a self-completion questionnaire, which was also available online.

PROJECT BACKGROUND

The project was aimed at rejuvenating and developing the sporting provision on University Park; to create world-class facilities that would set a new benchmark within the higher education sector and increase sports engagement within the student population and public. In addition, the new centre would continue to support two annual graduation ceremonies, student exams and other events, such as the Freshers' Fair.

The original design was developed around the existing swimming pool and outdoor pitches, with the intention of retaining the original main sports hall and wrapping the new facility around it. However, campaigners were concerned about the required removal of a small number of old trees which impacted the approval of planning consent. To overcome this, the design was revised, with the building footprint moved across the site to allow for the retention of the trees. Unfortunately, this meant that the original main hall could not be reused, increasing overall costs, but in hindsight potentially resulted in a better, though more expensive, final facility.

The project aimed for BREEAM 'Excellent', although this had to be reduced to 'Very Good' following changes to the design, and cost, required to achieve planning consent.

Though not certain at the outset of the project, the scope was supported by a significant financial commitment from a University of Nottingham alumnus, David Ross.

PROJECT DATA

Name of facility:	David Ross Sports Village
Location:	University Park
Gross area:	17,000m^2
Number of storeys:	Three
Users of the facility:	Students, staff, alumni and members of the public.
Room types:	Sports halls, gym, specialist sporting facilities, reception, café, sports injury clinic and hydrotherapy pool.
Start on site:	May 2014
Date completed:	September 2016
Period on site:	Approx 17 months
Gross construction cost:	£40M including provision of temporary facilities
Funding:	Internal capital funding with additional financial commitment from Nottingham alumnus David Ross
Contract type:	JCT Design and build

OBJECTIVES OF THIS POST-OCCUPATION EVALUATION

- To highlight issues and best practice associated with the project during procurement, and the construction phase.
- To bring to light any key issues associated with the operation and management of the project during all phases of the development process.
- To draw out stakeholder feedback concerning the design of the building and understand the user experience of those who visit the facility.
- To analyse all output from the interviews, the on-the-ground study, and the workshop to provide a summary report with recommendations.

SCOPE OF THE STUDY

STUDY PARTICIPANTS AND METHODOLOGIES

The University of Nottingham's Estates Team provided Building Understanding with background to the David Ross Sports Village project, including a tour of the facility. Building Understanding used this information to generate questionnaires aimed at three main groups of stakeholders: the University's Estates Team, consultant stakeholders who delivered the project and stakeholders of the finished facility. Building Understanding gathered feedback from 15 individuals via interviews.

In addition, Building Understanding developed a questionnaire to gather volume feedback from centre users, and staff who work there. This questionnaire was available to complete online via a targeted shared link, plus a one day on-the-ground study was conducted to encourage students to complete the questionnaire via a paper exercise. 290 responses were obtained, with 249 of these responses gathered in person via the on-the-ground exercise.

In both the interviews and the user questionnaires, some of the questions involved giving a satisfaction rating, where '1' represents 'totally dissatisfied' and '10' denotes 'totally satisfied'.

Interview methodology

To create an environment which matched a face-to-face interview as closely as possible, whilst achieving the efficiency of remote working, all interviews were conducted over Microsoft Teams.

Feedback, by interview, was gathered from the following:

Estates Office staff

- Head of Capital Projects
- Building Services Manager (via group interview)
- Building Surveyors x 2 (via group interview)
- Head of Business Performance – Conferencing (via group interview)
- Associate Director - Catering Services (via group interview)

Consultants

Respondents represented the following stakeholders involved in the project's delivery:

- The architect
- The main contractor
- External project Manager
- External project partner

Stakeholders

Feedback was gathered from technical staff involved in the project one of whom works within the completed facility.

- Director of Sport
- Assistant Director of Sport
- DRSV Centre Manager
- Head of Events and Customer Experience (Graduation)
- Senior Manager (Exams)

The workshop

The workshop objectives were to:

- Present the feedback gathered through the interviews and on-the-ground study.
- Examine to what extent David Ross Sports Village has delivered against the original vision.
- Discuss any best practice and issues raised.
- Generate recommendations for application to future University projects.

The workshop took place on 10th March 2025. There were 11 attendees from the project group and stakeholders.

SAMPLE SIZES

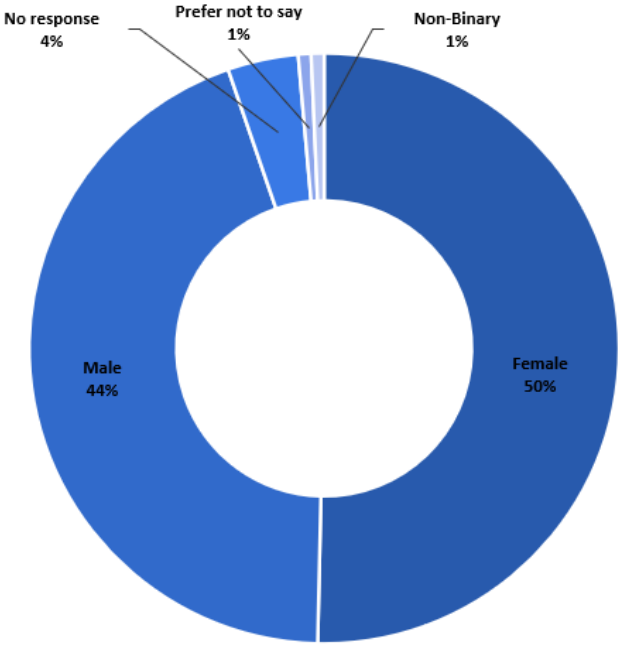
It is important to note that quantitative feedback in this report relating to the project journey is based on a small sample size. The qualitative feedback given, however, was extremely rich in detail from the interviews and workshop. Despite a long period since the end of the project, there was a high level of engagement from consultant/contractor team members.

The user feedback sample size was large enough to be robust both from a quantitative and qualitative perspective. However, it still only reflects a small percentage of the total number of centre members. Student respondent numbers were restricted to 250 maximum due to a university directive regarding questionnaires.

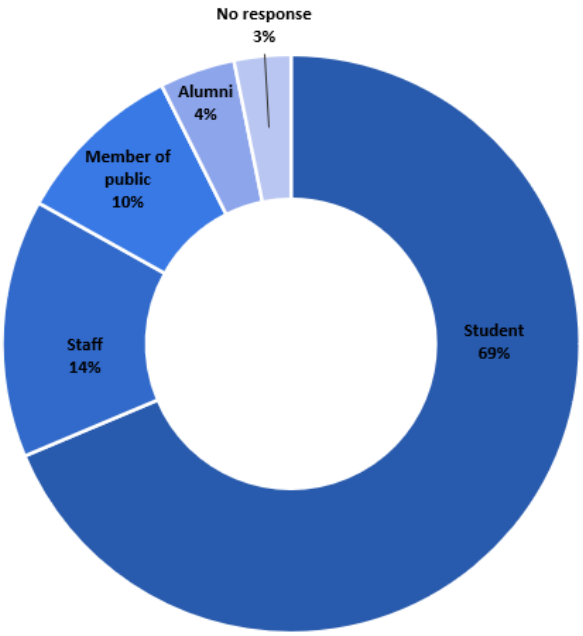
DEMOGRAPHICS

At the request of the Sport team, demographic information was gathered in relation to the respondents of the on-the-ground user satisfaction study. This information is illustrated in the following charts:

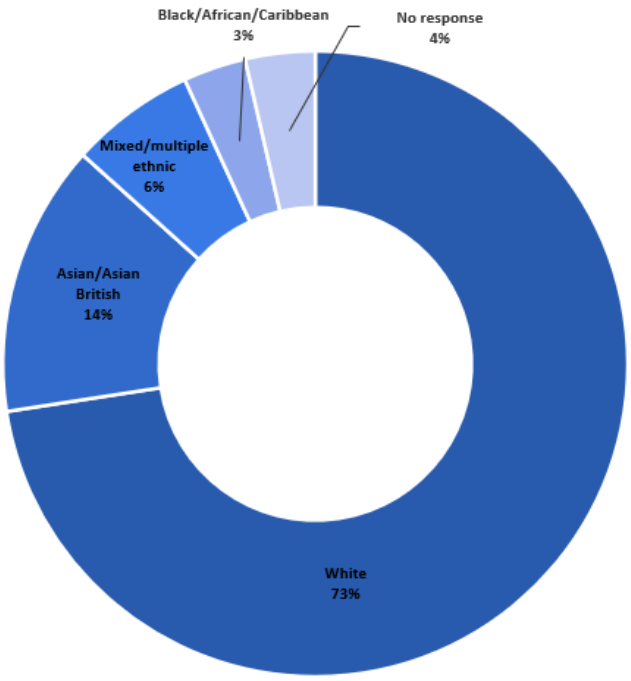
Gender



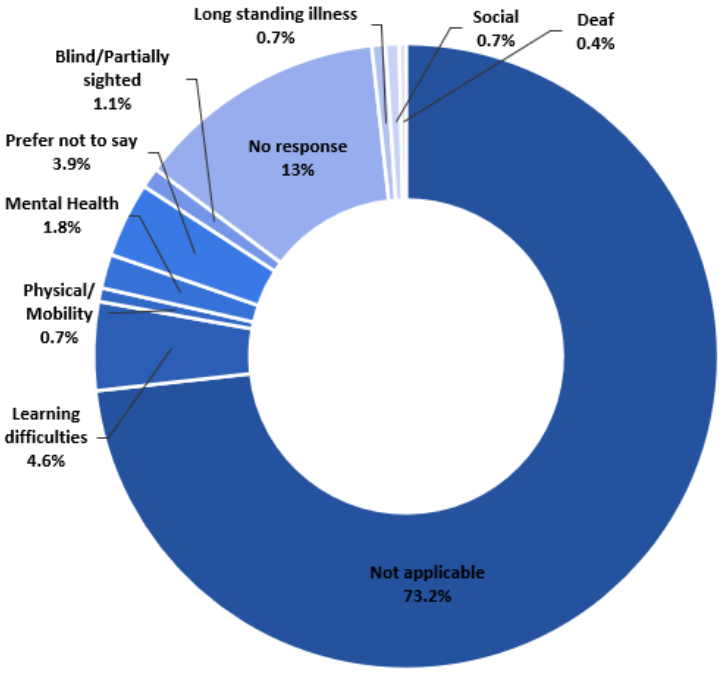
Type of User



Ethnicity



Disability



Findings of this Post-Occupation Evaluation

The Big Picture

The project to rebuild the sports centre on University Park had an ambitious goal to create a facility that inspired engagement in a wide variety of sport, and to set a new benchmark for sports facilities within higher education. In this it has been successful, and the centre now hosts many events at both university, national and international level. At least one Olympic medallist trains at the centre.

The university Estates and Sport team worked together closely and developed a very strong brief, which focussed the spend on sporting facilities and ensured that functional spaces, such as corridors, were not overdesigned with unnecessary aesthetic finishes. This clear vision helped the architects and wider project group to develop the scheme to meet the original intent.

The university team and project group were very engaged in the project and built strong, collaborative relationships. As the project was delivered before the COVID-19 pandemic, most meetings took place in person, and respondents feel that this benefitted the design and delivery phases, as it improved overall communication. This was a very complex project and not without difficulty, but the strong relationships ensured that there was not a breakdown in communication and collaboration.

The original design sought to wrap around the existing facilities, including the swimming pool and outdoor pitches, as well as retaining the current main sports hall. However, this objective became untenable when activists raised concerns about the removal of three old trees. A new design was approved which overcame the issue, but came with delays, a financial cost and a reduction in the BREEAM target.

The delivery phase involved a wide range of contractors, both general building contractors and specialist sports providers. Whilst temporary facilities had been provided during construction, there was a clear deadline to open the centre for the incoming cohort of students, in September 2016. When this deadline arrived, the building wasn't quite finished, but a decision was made to handover the building despite this. This decision had a commercial element, because there was a deadline on the temporary facilities, but equally important was the impact of a programme extension on student experience. The university believed that it was vital that the 2016 cohort of students did not have to switch sporting venue part way through the academic year: thus, giving them the best sporting offer throughout. This brought problems in relation to snags, but many feel that students were broadly not impacted by these difficulties, which supports the decision in relation to student experience.

There have been some defects which are still not resolved, such as leaks in the squash courts. This has been frustrating for the project group and operating teams. However, the main contractor has remained engaged in trying to resolve these, which reflects positively on them.

Since opening, David Ross Sports Village has been extremely successful. Membership levels are high, both within the student population, as well as alumnus and public membership. The findings of the on-the-ground user study showed high levels of satisfaction in relation to both the facilities and the overall operation of the sports centre. In some respects, David Ross Sports Village is a victim of its own successes, as one of the criticisms from users is that some facilities can be extremely busy.

It was always the expectation that David Ross Sports Village would continue to host events, including exams and graduations. This has been fulfilled, although there are some limitations and conflicts which make certain aspects a compromise. The graduation team suggest that aspects of the building such as access, storage and flexibility bring challenges and costs in the delivery of their events. Despite this, the facility has been able to successfully accommodate all the events required by the university programme.

Below are some quotes from people involved in this post occupancy evaluation.

Positives

David Ross Sports Village is a very successful facility, which promotes sports engagement and meets its goal to set new benchmarks for higher education sports provision. The centre hosts many competitions, including at a national level.

Respondents said:

'It is probably one of the best, if not the best, single sports centres in the country, as a single site. People walk in and go 'wow'. If you go to America, then they blow you out of the water with their facilities, but in the UK, you'd struggle to find a better facility.'

'We have an all-glass squash court. There are only three of them in the country that you can access, again, that drives the business to us.'

The university team had a clear vision which was communicated effectively to the wider project team. This was an element of best practice which assisted in the successful delivery of the vision. The Estates and Sport team were very committed to the project success.

An interviewee commented:

'They were a really engaged client. They didn't just step back and wait for us to come up with the solutions. They were absolutely integral.'

A stakeholder reported:

'We all felt very involved and invested and were happy to be consumed by it.'

Despite challenges during delivery and with significant ongoing defects, the project team remained collaborative, and the main contractor has not walked away. Issues have been worked through together, rather than becoming contractual.

Project group members said:

'It was very, very collaborative how everyone worked together.'

'The main contractor has not walked away and has had a constant presence on site.'

User satisfaction is very high. Students and gym members appreciate the range of sports, the overall ambience of the centre and the service they receive.

Users commented:

'It is very large, filled with sports of all types. It has a café and very kind people.'

'It feels open, light, accessible. The DRSV feels modern and up to date. The facilities are very good.'

Whilst primarily a sports venue, the centre also successfully supports the delivery of graduations, exams and other events, such as the Freshers' Fair.

Respondents noted:

'I have had people say to me, 'We were at the graduation for our child in the David Ross Building and it was fabulous'.'

'So far, I am not aware of a situation that has been proposed to us that we have not been able to deliver.'

Negatives

Planning issues, raised in relation to the planned removal of three old trees, required a change to the design. This brought delays, increased costs and reduced the overall BREEAM target which could be met.

Project group members said:

'The sustainability argument of the three trees took on a life of its own.'

'There were people who should not have got involved in protecting three trees, who got involved, and caused a 9-metre shift so we lost BREEAM 'Excellent' and had to go to BREEAM 'Very Good'.'

There are ongoing defects which have still not been resolved, many years after the centre opened. Whilst not impacting user satisfaction, this is frustrating for the project group and the team who operate David Ross Sports Village.

One member of the project team said:

Here we are, five years on, and I haven't yet issued a 'Making Good on Defects' certificate.'

Whilst the facility does support events, such as exams and graduation, there are some compromises. A lack of local storage, the need to dress the centre and the flexibility of some spaces increases the on-costs of staging graduation. Access and egress are challenging for any event where a large number of people arrive at the same time.

A member of the events team said:

'We are trying to fit a 'square peg into a round hole'. We make it work, but it is not the best fit in my opinion.'

An interviewee suggested:

'Some of the bigger events that we do, that are linked to the university's core mission such as graduations, open days and examinations, we could have been smarter with creating spaces that allow those to go ahead without having large off-site storage facilities.'

How closely David Ross Sports Village fulfils the original vision

David Ross Sports Village has clearly met the original vision to promote engagement in sport and set a new benchmark for sport facilities at universities. This is borne out by student membership, as well as the ability of the centre to host events and partner with sports organisations. University of Nottingham has been named 'Sports University of the Year' three times since the new facility opened.

One stakeholder said:

'Within three years, several of the universities were trying to do exactly what we had done. That tide raised all the boats. We played a massive part in that. In terms of its wider impact on the HE sector, if we had designs on that, in my view, it fulfilled that as well.'

The original vision intended to retain the original sports hall, and this unfortunately could not be achieved, due to the need to retain the old trees on-site. In addition, this meant that the goal to meet BREEAM 'Excellent' had to be downgraded to BREEAM 'Very Good'. Whilst this was disappointing and brought additional cost, many think that the result was not compromised, and perhaps even improved as a result.

A member of the university Estates team said:

'Whilst it gave us a lot of headaches the planning issues and therefore the rebuilding of all the facilities, rather than the reuse, enabled the better integration of the facilities. The studios are better heights, the general refurbed spaces would not have been as good as the ones we ultimately built, but that cost a lot more money, came with a lot of issues, and was not as sustainable.'

The sports centre had been used for exams and graduation for decades, and it was part of the original vision that it should continue to do so. As this is not the primary function of the facility, there are still compromises and costs related to staging these events in this building. Whilst those involved in planning these events feel these quite keenly, ultimately the events do still take place and are delivered to a high standard.

One member of the project team said:

'Flexible and adaptable spaces performing more than one function such as sports, graduations, exams etcetera. These were all things that we had in the original concept, and they have held through to the final version.'

FEEDBACK FROM THE PROJECT TEAM

THE DESIGN AND CONSTRUCTION PHASE

The architect was chosen following a design competition and they were very gratified to be selected, having previously worked on a similar project in another location. The selected design reflected the focus on functionality, whilst also having an aesthetic that would sit sympathetically within university park and alongside a listed building.

There was a clear brief from the outset, which had a focus on functionality and sport. The clarity of this vision was aided by the clear criteria required to meet sporting regulations, and supported by stakeholders who were very engaged, thought strategically, and wanted the same output.

The architect, consultants, and university team worked together very closely to develop the design, with open dialogue through face-to-face meetings at both the architect's offices and on site. There was in-depth review of the plans and interrogation of the design, with open and constructive exchanges of ideas. The university was very clear within the brief that this building was not about architectural flourishes, but rather about giving users the best sporting facilities, and the architect was deemed to have respected this as the design process proceeded.

One stakeholder said:

'We dismissed some of the architect's fancy designs and elements. If I am honest, architects like to design buildings that win awards. Often, that comes at quite a significant cost. To their credit, the architects accepted that and said, 'That's OK, we get that you want to do that'.'

At the outset, there had been a plan to retain the original main sports hall, and to wrap the building around this, as well as retaining the existing swimming pool, outdoor courts and pitches. Despite the university having a good relationship with the local planning authority, and support for the scheme, an issue arose due to the required removal of a small number of old trees. A tree consultant had indicated that they were not of particular value, and planners had initially accepted these reports. However, green campaigners were vocal in their concern about the trees, despite their apparent poor condition, and the university decided that the best course of action would be to adjust the design to mitigate against the objections.

To preserve the trees, the footprint of the building was moved across the site by about nine metres, and this was approved without further issue. Unfortunately, it also meant that the old sports hall had to be demolished, which came with considerable additional cost, delay to contract commencement, and a reduction in BREEAM target from 'Excellent' to 'Very Good'. Whilst this was not ideal, several members of the project group believe that the final facility was improved as a result of these necessary changed. The architect is confident that the change did not impact the integrity of the design.

One project group member said:

'I am convinced that we ended up with a better building as a result although it was a bit painful at the time.'

Following the unexpected planning issues, the selected main contractor had to commence the demolition of the old building whilst costs for the redesign were still being agreed. There was also a process of value engineering to try to get the building back into budget. Whilst this was challenging it was not felt to be unusual or complicated.

The construction phase was always going to have an impact on sports provision whilst it was being undertaken. To manage this, temporary sports facilities were provided on-site during the construction phase, which offered continuity whilst the new facilities were being built.

One key stakeholder commented:

'The design and build was massively impactful on the sporting programme and the university put in place plans for a temporary facility. That was unbelievably far sighted, very well managed, and created massive buy in from the students because they could see something great, and they were being given something good until the great thing was built.'

Due to the cycle of academic years, the construction phase had a clear deadline of autumn 2016. It was a complex build, not least because of the number of different sub-contractors involved in the construction. Some of these were general contractors but some were specialist sport contractors, who the main contractor would not normally deal with. Many feel that the main contractor performed quite well and was accommodating and open. However, others think that performance was below that of other contractors on similar projects. There were some issues in relation to communication during construction, with the fabric delivered not always being what was agreed.

One project group member said:

'We were agreeing to things like slot drainage and showers, but ultimately, we didn't get them. There was a lot of good work being done, but there were also areas where you felt, or sport would feel, and I have sympathy, that stuff was being little bit rushed.'

As the deadline for opening approached, it was apparent that the building was not finished. However, a commercial decision was made to complete handover and open the centre despite this. The project group accept that this was problematic; that it meant that there was a high volume of snags and that it impacted clarity in relation to snags, defects and maintenance issues.

One respondent commented:

'I seem to remember the university moving in maybe prematurely, which always results in complications when it comes to defects because it is difficult to know if it is a defect or maintenance because the building is being used.'

Despite the handover challenges identified by the project group, it is important to highlight that many respondents believe these would not have impacted early users, and that the otherwise excellent facilities would have been the focus for them.

Since opening there have been several significant defects which have, to date, not been fully resolved. Most notable is an issue of ongoing leaks within the squash courts. This is very disappointing but is balanced out, for many, by the continued involvement of the main contractor in trying to rectify the issues. Some contractors may have walked away, but the main contractor continues to maintain a good relationship with the university and is still working with them to identify a long-term solution. This is likely because of both the pride

that the project team have in the overall facility and the strong working relationships built during the project duration.

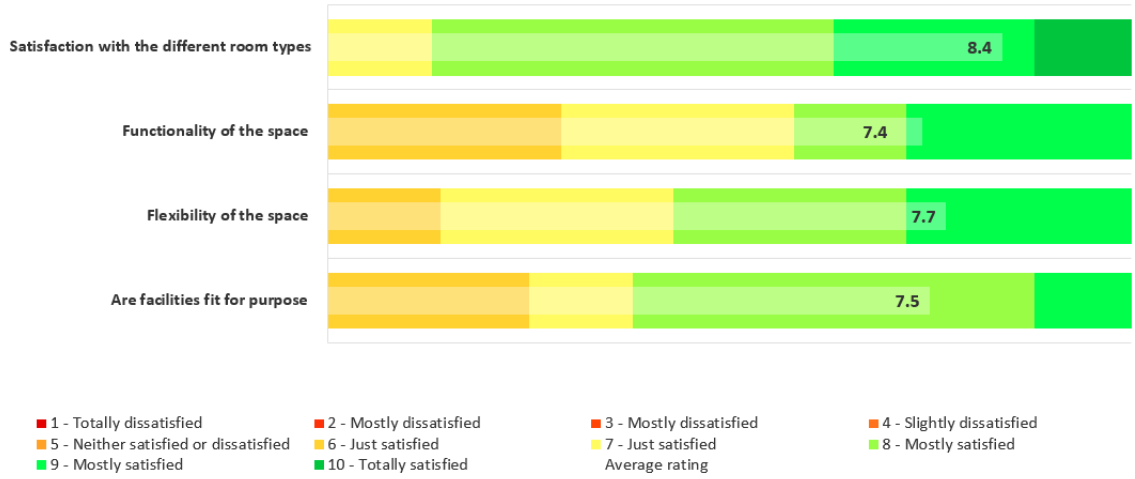
A member of the Estate team noted:

'After all the trials and tribulations, the project achieving planning permission, and the delays and additional cost pressures that caused, we were able to deliver a fabulous facility for the university and the students.'

Recommendations

- As best practice learning: ensure that project briefs are as clear as possible and place functionality at the heart of the vision. As appropriate, consider the importance of external aesthetics based on the location and demands of the specific development site.
- As best practice learning: at the outset of projects, try to engage stakeholders who have time available for the project and can think strategically and understand project requirements over future years.
- As a best practice learning: ensure that design meetings take place face-to-face, to allow for the improved review of design drawings and design detail discussions. Only use online meetings for more straightforward information transfer.

FEEDBACK RELATED TO THE DESIGN AND LAYOUT



The building was designed to be outward-looking and to support students and their engagement in sport. This wider perspective is believed to have assisted the success of the building and its spaces.

Due to the sheer number of different types of facilities required, and the space available, there were challenges in the design layout decisions. As it has been a long time since the facility opened, the compromises are therefore probably more clearly recognised. However, satisfaction with the different room types received a good average rating of '8.4'.

Due to the building footprint, some facilities had to be placed on the upper floors. Having the fitness suite on an upper floor gives it excellent views and light from the large windows, but led to a defect in the floor, which needed to be relayed, plus ongoing reverberation to the office spaces below. Despite these issues, the benefits of the vistas when inside, and the

visibility of the gym when outdoors, mean that respondents still believe locating the gym on the top floor was the correct choice. However, they would adjust the spaces placed below the gym to ones where noise transfer would be less impactful.

Locating the hydrotherapy pool upstairs has made issues with leaks more significant, and accessing the injury clinic can be an issue if there is a problem with the only lift in the building. While hindsight may suggest this was the wrong choice, there may not have been other facilities which would have been better placed in these locations.

It was decided early in the design process that a second lift was not required, and this is generally believed to have been a mistake. It reduces accessibility for those in wheelchairs generally, due to fire safety, and more specifically when there are problems or maintenance with the only lift.

The catering team were given a designated space within which to design the café, rather than having an input on the size of space they needed. This space was, in reality, a bit too small and the storage for the team running it is insufficient. The decision to have a two-sided serving, one within the centre and one outside the barriers, has not worked as well as anticipated. In future, the catering team would value being involved earlier in the project design.

A member of the catering team said:

'There are two sides to the space, and they were determined that they had to have the members' side and the other side separately. I think that has caused quite a few problems in terms of how the counter was set up.'

Others within the project group noted that catering companies were actually involved in the design of the fit-out, via a competition. Since opening, the running of the café has switched from being with an external company to being run in-house and this may account for the differing perspectives.

Entrance to the facility is through a single main entrance. This brings challenges when there are large numbers of people arriving at once, for example for exams and graduation. It is felt that incorporating a second set of doors in the design would have been advantageous for larger events.

During the design phase input was obtained from an alumnus who is very engaged in squash, and this influenced the layout of the courts; changing it from a row of courts to a layout that feels more like a squash club and incorporated a glass court and spectator seating, which is considered a huge success.

It was always the design intention to maximise the space available for sport but those involved in the operation of the building feel that, with hindsight, the design did not incorporate enough storage space. The lack of storage space does mean that materials sometimes get stored in corridors and public spaces, plus the building surveyors reported finding items stored incorrectly in plant rooms. For events there is a cost relating to storage off site.

One stakeholder said:

'Although we made a conscious decision to sacrifice storage spaces over delivery spaces, we should have potentially had more of an eye on the future with regard to growth of business.'

Building surveyors and the maintenance team were not greatly involved in the design, so did not have a significant influence on the selection of plant, or how the design would influence long-term maintenance. For this building, this is felt to have impacted the long-term functionality of some of the systems. Since the completion of this project, there has been considerable change within the way that the wider estates team is engaged on projects and new processes have and are being developed to formalise this for future benefit.

Flexibility

Some spaces have limited flexibility purely because they are designed to accommodate a specific sport. That said, the main sports hall can be split into four smaller halls, to host different sports, or to be one extremely large space for major sporting events, exams or graduation. Other spaces were designed to be multi-functional, such as the fencing salle, archery, and the table tennis space. The dojo is also used for yoga and Pilates sessions. The average rating for flexibility was '7.7'.

One stakeholder said:

'It provides a great wide-open space, which is very important when it comes to accommodating large numbers of people for exams. We can accommodate 900 students across three of the four sports halls at any one time.'

The graduation team is less positive about flexibility. Although the main hall can host a large number of graduands and their families, they feel that some spaces have been designed in a way that do not make them usable during graduation, and for this reason there are significant annual costs linked to hiring marquees and storage off site. Flow in, out and around the facility can also be difficult, and create conflict with general sports centre users. In the past, the High-Performance Zone has been used for photography but changes to use over time means this is no longer possible.

One member of the events team said:

'There is a lot of unusable space that we then have to pay extra [to provide elsewhere].'

Graduation and exams were considered during the design phase, and there was a finite budget which limited the spaces which could be created. However, in hindsight, it is accepted that while the bias was always going to be towards sport, the bias was perhaps a little too skewed and more dialogue with the graduation and exams team might have aided these events and reduced running costs.

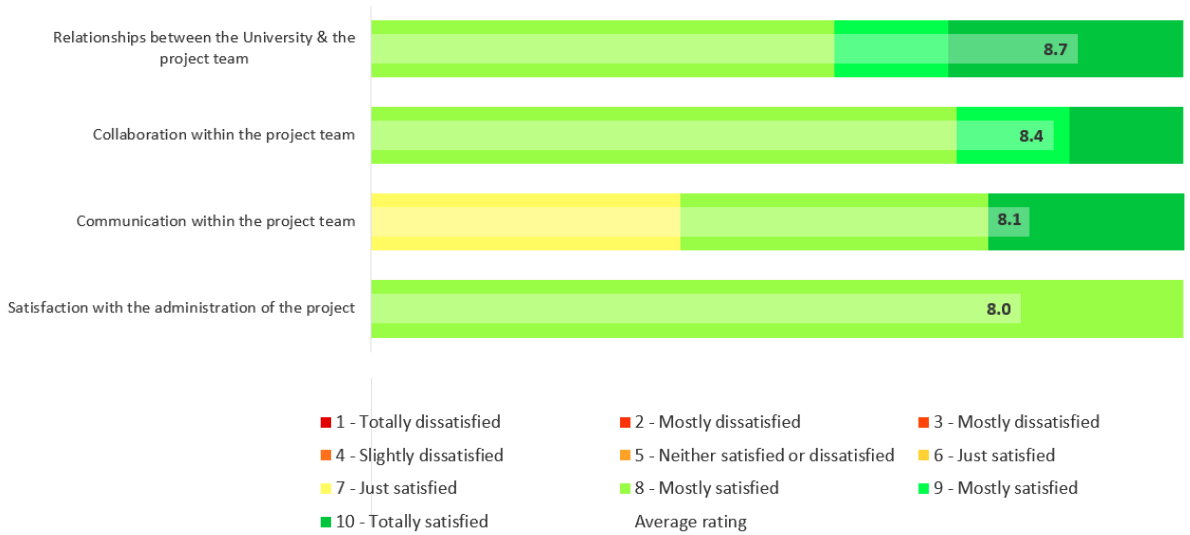
At the time of this design there were 2D and 3D images, but some stakeholders still reported finding it hard to understand the true size of the functional spaces and transition spaces, as well as flow around the site. Whilst the Sport team visited other universities to look at recently built facilities, the same did not happen in relation to exams and graduation. It is felt that doing this may have assisted the understanding of some of the issues which are now realised in practice.

Recommendations

- Where a building has multiple functions, ensure that the design bias is correct between primary and secondary functions. Ensure that there is the correct amount of dialogue with different teams to ensure that appropriate consideration is given to secondary stakeholders.

- Continue to develop and implement the updated processes to engage the wider Estates team, including building surveyors, in the design process and selection of equipment.
- Involve the university's catering team at an early stage of the design process to ensure that the overall space provided for catering is sufficient and to ensure that there is enough space for both staff and storage.
- For future projects, consider visits to similar facilities by stakeholders of all critical functions, to improve understanding and identify unforeseen challenges and risks.

FEEDBACK RELATING TO RELATIONSHIPS, COMMUNICATION AND COLLABORATION



Relationships within the project group were very positive and all respondents indicated they were 'satisfied' with them. The university Estates and Sport representatives were praised for their engagement and how they worked with the team. External consultants were also very committed to the project and even when challenges arose the team worked effectively to resolve them.

Interviewees said:

'There were challenges there, but we got through it, having a pragmatic team.'

'We enjoyed working with a very experienced, personable and collaborative team. It felt like a joint effort between us and the university.'

The project benefitted from existing relationships and continuity, between known team members within both the university, contractor and consultant teams. This was illustrated by the engagement with the POE process, despite it being over eight years since the completion of the project.

Collaboration

All respondents were also 'satisfied' with collaboration. From an early-stage key stakeholders felt they had the ability to contribute and influence decisions because of the supportive culture within the project group, and that this was done in a way that did not delay

project timescales. Respondents felt that the team worked together to overcome issues and share information.

One respondent commented:

'It was very, very collaborative how everyone worked together.'

Ratings were not gathered from those who were not involved in the project group, but interviewees from teams such as events and building maintenance indicated that they believe the final outcome could have been better if they had been consulted about their areas of expertise.

Communication

Administration of the contract was good, and communication within the project group received an average rating of '8.1'.

This project was designed and delivered before the widespread use of virtual meetings. This meant that there were a lot of 'in-person' meetings at either the architect's offices, or at the university. It is believed that communication was better for this, and that the more recent move to lots of virtual meetings can be less productive. Meetings were felt to have been very productive and to have influenced the success of the project.

Respondents said:

'The project really benefited from the face-to-face meetings.'

'The planning of the meetings, the format of the meetings, and the purpose played a huge part in the way the building now looks and feels. I think that went very, very well.'

During the delivery phase, some construction details were not delivered as agreed and this was felt to be because decisions had not always been documented through signed off minutes and drawings. At times, there were conflicting drawings, and this led to non-conformance and perceived defects. Ensuring that decisions are documented and understood by all parties would have improved communication and the outcome at handover.

One stakeholder suggested:

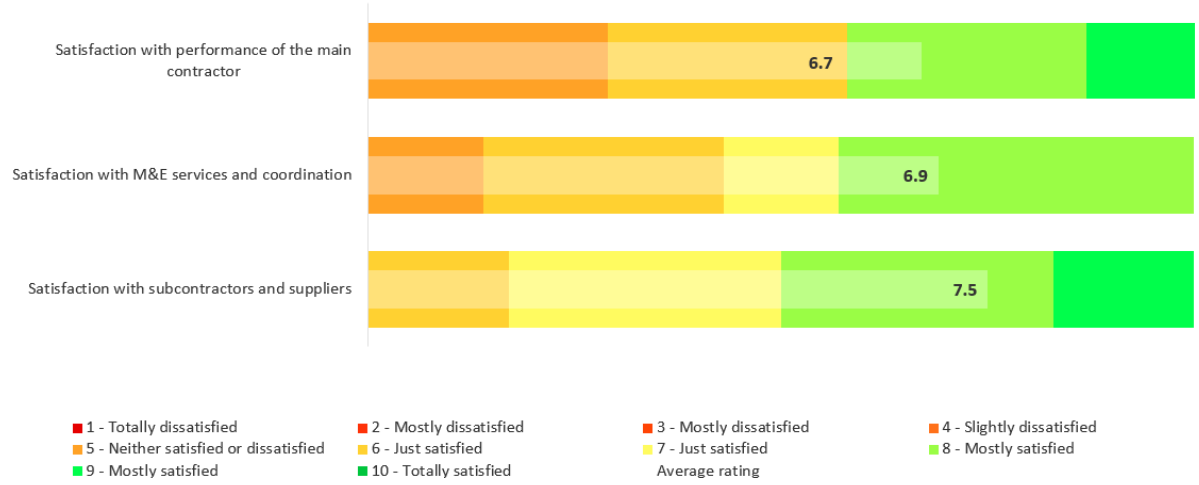
'I think one of the biggest problems was a lack of signed off minutes. There was a huge volume of paperwork, and the paper trail did not include signed off minutes.'

Recommendations

- As best practice learning: ensure that the project group culture supports sharing of ideas and involvement in decision making, in a manner that does not delay project progress.
- As a best practice learning: ensure that design meetings take place face-to-face, to allow for the improved review of design drawings and design detail discussions. Only use online meetings for more straightforward information transfer.
- As best practice learning: where possible within competitive tender restrictions, select consultants and contractors where there are existing relationships.

- For future projects ensure that there are agreed drawings and minutes from meetings throughout the delivery process, to give clarity that the whole team is working to the same agreed construction detail.

FEEDBACK RELATING TO MAIN CONTRACTOR AND SUPPLY CHAIN



Main Contractor

A wide range of ratings were awarded in relation to the main contractor, ranging between '5' and '9'. The average rating awarded was '6.7'.

Positive feedback related to the contractor's open communication and how engaged they have remained since the opening of David Ross Sports Village. Many believe that other contractors may have walked away and hence praise the main contractor for still taking responsibility for ongoing defects.

Interviewees noted:

'They opened up their entire data record platform to us which included all of their own comments. I felt that was very trusting and very transparent.'

'The fact that they are still around the table speaks volumes about them and their approach.'

Others suggested that the main contractor did not perform especially well when compared to other similarly sized contractors, and that management of sub-contractors could have been better. At a local level, some feel that relationships have become a little strained as defects continue to be an issue.

Respondents noted:

'We did have some delays on site, they struggled with their sub-contractors.'

'I think that they were a bit lacklustre, partly in the way they managed the building, partly in the way that they managed defects which is just painful.'

Ultimately, the division in ratings appears to relate to whether respondents were focussed on the fact that there are still defects, or on the way the main contractor has approached their responsibilities and their ongoing efforts to overcome the defects.

Supply Chain

A rating of '6.9' was given for M&E services and coordination.

The contractor was a large company with whom the university has previously worked. The main contractor reported having a continued positive relationship with them. However, some felt that the M&E contractor could have been more open and could have managed their subcontractors better. There is some dissatisfaction relating to the plant rooms and some systems.

One respondent said:

'The M&E subcontractor was hard work. The communication with them was good but I think that probably their performance overall was not great when you look at the management of their sub-contractors.'

Another commented:

'I don't think they were particularly transparent about the plant rooms.'

Other subcontractors were awarded an average rating of '7.5'. There was a wide range of specialist contractors and some were considered excellent, whilst others were much less positive. There was a particular issue with the equipment supplier, which led to the breakdown of the relationship.

Some of the sport specialists were not building contractors that the main contractor would have existing relationships with, and in some cases, issues were identified in relation to reliability and health & safety.

FEEDBACK RELATING TO PROGRAMME

The programme was impacted by the planning issues relating to the trees. To some extent this could not have been foreseen, as early involvement with the planning officers had not indicated that removal would be an issue.

The positive relationship between the main contractor and university meant it was agreed to begin the demolition of the old sports centre, before the cost for the new design had been finalised.

A member of the Estates team noted:

'When it got to the stage of the complications with planning, we had a very positive relationship with the main contractor, and we were able to 'shake' on a deal with respective directors that got the project moving and tried to keep it to the programme for when we wanted it to open.'

The delays to starting and fixed deadline date meant that programme was always a challenge and there was pressure to prevent a further slip to the date of completion.

One project group member suggested:

'I know the project was under huge pressure the whole way through to achieve the programme. The contractor was under huge pressure to achieve completion.'

There were delays on site and things that could have been delivered more quickly. Some of this is believed to be due to contractor performance, but some may simply lie in the complexity of the build process overall.

One consultant said:

'We did have some delays on site, they struggled with their sub-contractors.'

Ultimately, when the project deadline arrived, the building wasn't quite finished, but the university made the commercial decision to open despite the fact this did not allow for the usual handover, snagging and soft-landing procedure. In an ideal world, there would have been the capacity to allow the programme to overrun by a few months, but this was simply not possible in this case.

One project group member said:

'We probably shouldn't have opened, if I'm being honest. Ideally, we probably should have waited till January and let the main contractor out in a more managed way, but we didn't have that luxury.'

The decision to open was influenced by the fact that there was a deadline on the temporary facilities being provided while David Ross Sports Village was being built. If there had been some flex or spare capacity in relation to the temporary facilities, this may have given an option for a delay to opening and avoided the problems of handing over too soon.

Whilst this was not ideal, it is noted that most users would not have been as troubled by this decision as those within the project group were. Opening as originally planned avoided any negative publicity and minimised the impact on students.

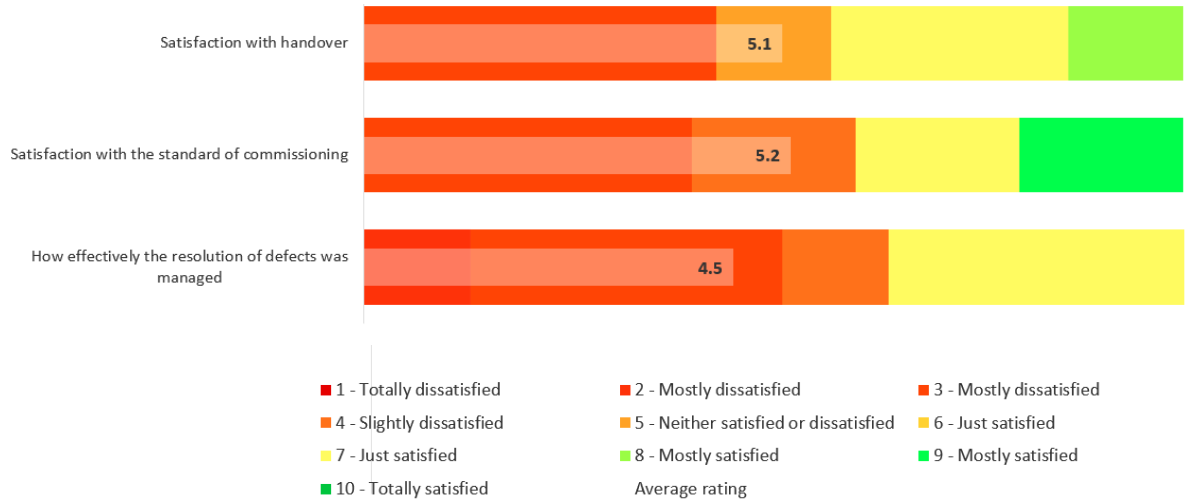
One interviewee commented:

'We opened it when we promised for the majority of the students who needed to see it open.'

Recommendations

- For future projects, where temporary facilities are being provided, ensure that there is some spare capacity at the end of the planned programme to allow for reasonable, required project overrun.

FEEDBACK RELATING TO HANDOVER AND DEFECTS



The handover of the building and commissioning was significantly impacted by the decision to open the sports village even though some works were not fully completed, and snagging

had not been resolved. This is reflected by low ratings of ‘5.1’ for handover, and ‘5.2’ for commissioning.

There was insufficient time for a classic handover, the main contractor was trying to complete works, while the users were moving in and starting to use the facilities. The team fully recognised that this was not ideal, and outside of normal protocols, but it was necessitated by the need to open the centre. This was both a commercial decision, and necessary to give the best possible experience for students. Inevitably this meant that documentation was incomplete, and commissioning was less structured than would be usual.

Respondents said:

‘We were told we were opening in the September. If you'd asked everyone as a project team, regardless of the political pressures from the university, they would have all said it wasn't finished yet so we should have opened it in the January 2017.’

‘There were some elements missing from the documentation. The fundamentals around what each space was designed or specified to do in terms of climate control and environmental control was there, but a lot of other elements were missing for quite some time.’

Protocols within the university has considerably changed since 2016. More rigorous requirements for handover and soft landing are defined. The Estates team has an enhanced compliance team, who would have far greater involvement and influence regarding whether a building is ready to be handed over. The current landscape is more risk-averse, and respondents suggest that more in-depth consideration would take place under the current management structure, considering both impact on students and reputational risk. This indicates that the required learning in relation to handover has already been implemented.

As a result of the rushed handover, there was a high number of snags, which took a considerable time to resolve. There have also been several persistent defects, which are still being investigated and remain outstanding. Respondents rated the effective resolution of defects as ‘4.5’.

The most significant residual defect is leakage within the squash courts, which the contractor is continuing to investigate with a view to identifying a final solution. The main contractor accepts that, in hindsight, they would adopt a different method of construction based on the manifested issues. There have also been ongoing leaks from the hydrotherapy pool and roof since centre opening, which impact other facilities beneath them.

Despite this, relationships with the contractor remain generally positive and as noted, the contractor remain committed to resolving the outstanding defects. This is believed to be because of the culture fostered during the project; one where the project group have continued to focus on working together to resolve the issues, rather than trying to apportion blame.

One interviewee commented:

'There is a lot of good will, but we are eight years into construction and there are still some defects that are outstanding.'

There is agreement that the handover and defects period would have been improved by the involvement of a clerk of works. In the time since this project, the university has more routinely engaged an external clerk of works for projects and has planned to recruit to this position internally. Due to resource restrictions, this post has not yet been filled, but there is hope that this post will be filled in the not-too-distant future.

Despite the defects, most feel that the experience for users has been broadly unaffected.

'You could argue from the outside looking in, when we first opened, there were thousands of snags. None of those detracted from the student experience. Nobody knew but us really.'

Recommendations

- As best practice: on all projects, aim to have a 'one team' culture. Where issues arise, focus on working together to resolve the issue whilst maintaining an engaged project group.
- When resource allows, recruit an internal Clerk of Works to support in the delivery of high-quality works. Where appropriate, continue to engage an external clerk of works until this position is realised within the Estates team.

FEEDBACK RELATING TO ENVIRONMENTAL PERFORMANCE AND SUSTAINABILITY

At the outset, the building was targeting a BREEAM 'Excellent' certificate, however this had to be downgraded to 'Very Good' following the changes made to the design to obtain building consent. This certificate was obtained.

The three trees that were a concern to the campaigners were not affected by the building work and remain in-situ with the building wrapping around them.

The timing of the project meant that LED lighting was not incorporated throughout. Whilst the design team had a preference to use LEDs, it was not possible to get sign off from sport governing bodies due to a lack of information at the time about the quality and uniformity of the light produced. Clearly in hindsight this is unfortunate and something which has led to considerable maintenance and running costs. If the centre were being built now, a different decision would no doubt have been made.

Respondents said:

'The timing was a bit unfortunate around things like LED. It is obvious we should have had LEDs. By the time the centre was built LED technology was clearly much better than anything else that had gone before it.'

'We have a lack of LEDs, so our maintenance regime is very, very high.'

Not having LED lights is increasing both the maintenance costs and the amount of energy used by the centre. Whilst it would require financial investment, a programme of changing lights to LED units would reduce energy costs and carbon usage.

Photovoltaic cells were installed but could not be used for several years and unfortunately the team on-site were unable to monitor energy use to the levels which they now understand that would like to do; however, this was not as a result of the system installed.

A key stakeholder commented:

'We weren't able to turn on the photovoltaic cells for about five years because of issues accessing the grid. I think they are now on, but we have no idea the impact they are having'.

'Our ability to monitor across the building and measure energy savings, and environmental impact, is not there. That is a flaw.'

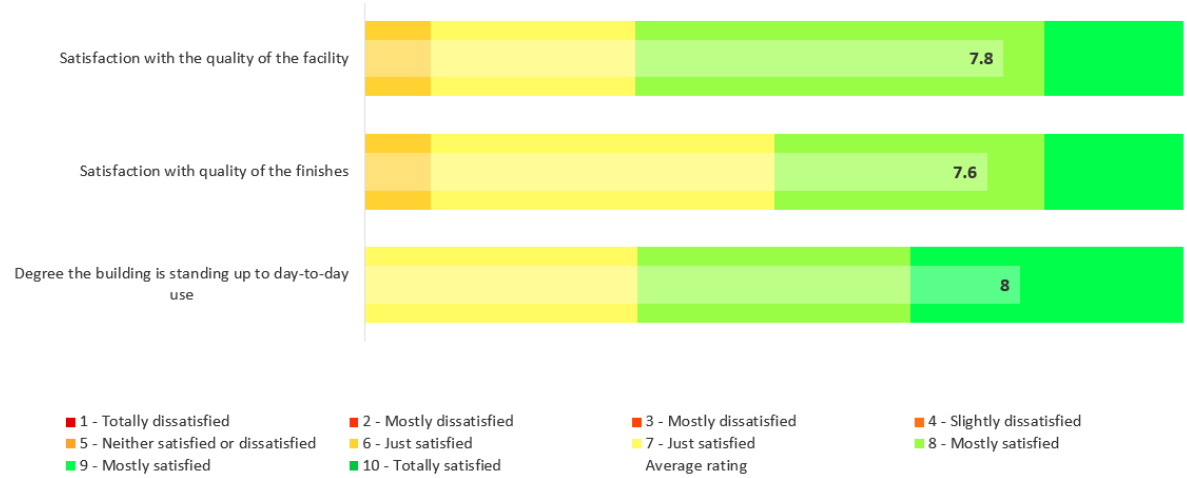
The BMS is starting to provide richer data on energy consumption, in a way that was not achieved when the centre opened. This should be used to put together cost analysis with the aim of justifying a project to switch to LED lighting.

This project was completed in 2016, and it is noteworthy that the decisions that would be made about heating, lighting and energy consumption would be significantly different had it been completed more recently. The lack of some energy efficient features must therefore be framed within the era that the building was completed. It may be that the site would now benefit from some further work to enable analysis of energy consumption.

Recommendations

- Use BMS data and light maintenance information to identify the current running costs of the existing lighting units. Use this information to demonstrate the long-term payback of a switch to LED lighting, and when budgets allow, upgrade the lighting units.
- Continue to use the BMS data to review energy use and identify any potential efficiencies to heating strategies.

FEEDBACK RELATING TO QUALITY OF DAVID ROSS SPORTS VILLAGE



Overall quality received a respectable rating of '7.8' from interviewees with the quality of finishes rated as '7.6'. The centre has very high usage but despite this, respondents were positive with how the facility is standing up to day-to-day use, rating this with an average of '8'.

It was accepted that the finish within corridors and transition spaces would be functional and robust, rather than top-specification. However, there was a goal for high specification sports spaces, and this is felt to have been delivered.

Respondents noted:

'In terms of high-quality sports spaces, that is what we were after and what we delivered.'

'The footfall is quite heavy, so I actually think the facility is standing up quite well considering the impact.'

The toilets, changing rooms and showers are felt to be a slightly inferior quality than would be expected and ongoing issues with leaks impact the rating awarded by some.

People suggested:

'Some of the attention to detail around the fittings in the changing rooms and toilets detracts from that feeling of quality.'

'There are clearly elements of poor workmanship detailing that has meant we have had so many leaks.'

Despite this, it is believed that many of the quality issues recognised by the teams managing the centre would not impact the impression of quality experienced by users and this is supported by the user feedback gathered as part of this POE.

One interviewee suggested:

'There are a lot of challenges that we deal with that we can see. But as an end user, they could enjoy the facility and would never know the kind of issues that we have to face.'

POST OCCUPATION – END USERS

DAVID ROSS SPORTS VILLAGE END USER FEEDBACK

Feedback on spaces was gathered primarily from centre users via the on-the-ground study. The large volume of responses gave considerable quantitative and qualitative data. This quantitative data is shown in the charts within this section. As users were asked to only rate facilities which they actually use, the numbers in brackets on the charts show the number of respondents about each feature.

A small number of stakeholders also gave feedback regarding these spaces, with rich qualitative feedback. In general, interviewees were more critical of the facilities than users and the reasons for this are detailed where appropriate.

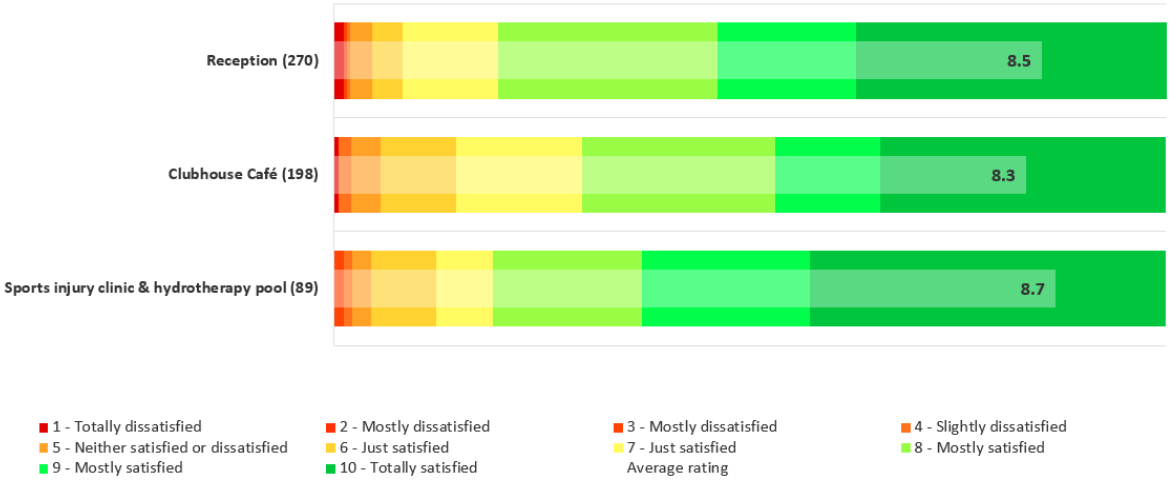
Overall users are very positive about the facilities and the ambience.

One user said:

'It feels open, light, accessible. The DRSV feels modern and up to date. The facilities are very good.'

FEEDBACK ON SPACES

Public Spaces



User satisfaction ratings for the reception, café and sports injury clinic were very positive with all three aspects rated with an average above '8'. Whilst not part of the POE, comments about these features often referenced the quality of service received as well as the physical facilities.

One user commented on the location of reception being a little awkward, and interviewees did note that an island reception is being considered as an update, to improve the welcome and flow around the reception desk. However, based on the high satisfaction levels identified by this POE, it may be of value to consider whether this is the best use of available funds.

One respondent said:

'The desk is positioned awkwardly so when there is a queue it's a bit odd.'

Whilst the sports injury clinic is well rated by users, project group members are aware that this being on an upper floor, when the centre has only one lift, does cause access restrictions for a user demographic who are quite likely to have physical restrictions.

One stakeholder commented:

'We have had multiple lift breakdowns, and the sports injury is then inaccessible to the majority of our athletes.'

Interviewees were much less positive about the catering facilities, awarding a rating of '5.6'. This is primarily because the stakeholders are focussing on the difficulties of running the café, and the capacity limitations. For these respondents, overall, the café space is too small, the dual service aspect does not work as envisaged, and there is simply not enough space for the preparation of food and storage. The catering team doesn't feel that the facilities allow them to offer the service and volume that they would aspire to. This may be due to the café's popularity surpassing expectations, likely a result of the shifting ways in which students spend their leisure time.

Stakeholders commented:

'The [café] space itself was very well designed from an aesthetic point of view. It did not take account of its usage requirements. The staff have not got enough room.'

'It only takes five customers to make you feel like you are in a queue. You are blocking the view of the product from any other customer, once you have got five deep.'

It is suggested that there is capacity to increase income, if the café space could be extended. This has been loosely scoped with a suggested plan to extend at the front of the café. As there is a belief that any spend would bring additional income, then a business case should be developed to allow for the review and approval of this upgrade.

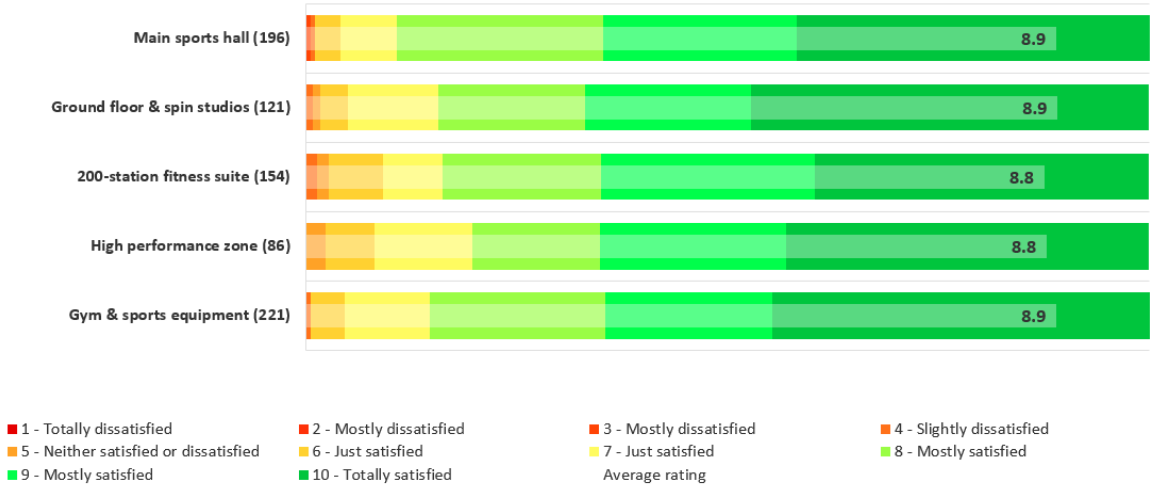
Stakeholders suggested:

'There is potential there because we can take £20-£25K per week. But, in theory, because of the size of that building, we should probably be double that.'

Recommendations

- Review whether the plan to move reception to an island set up is necessary based on satisfaction levels indicated by the user satisfaction survey.
- Catering and Sport teams to put together a business case to justify the extension of the café, to maximise income and improve user experience.
- For future projects, consider the evolving requirements of students and ensure that spaces provided for cafés have sufficient capacity.

Large sports areas



The multi-use sports halls and studios, plus the gym and high-performance zone (HPZ) received excellent ratings with all awarded ‘8.8’ or ‘8.9’. For all areas, except the HPZ, which has restricted access, response rates were high, suggesting good levels of utilisation.

Respondents praised the quality, size and variety of spaces and equipment.

Respondents said:

‘The HPZ is incredibly high quality and beneficial towards my health, although the entire facility is beneficial.’

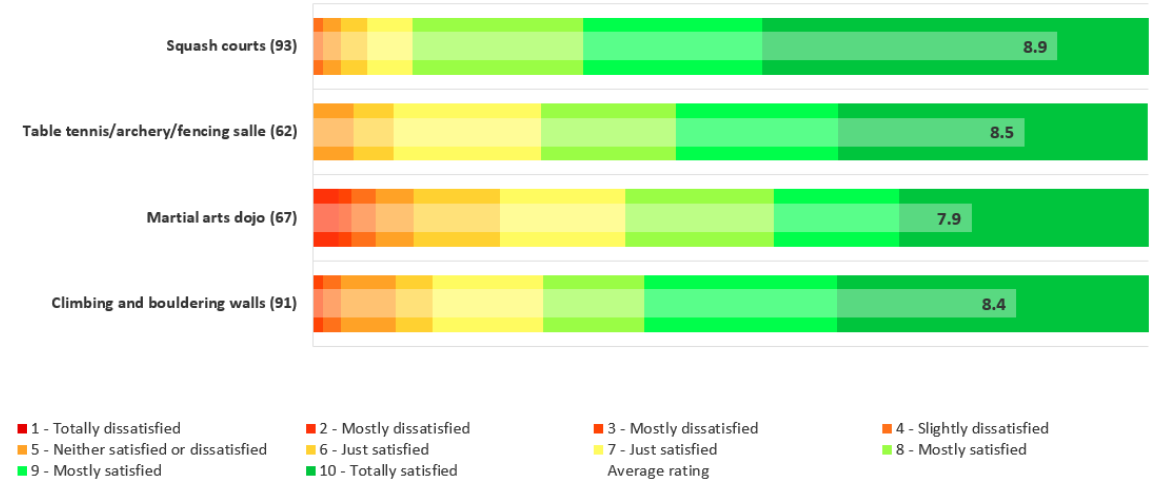
‘There is a lot of equipment to use in the gym. I also like the sports hall. There are multiple and it is quite spacious.’

Where there were negative comments, these were largely based about how busy the gym often is, rather than in relation to the design of the space. There was some feedback about the need for additional, or different equipment. To some extent the space is a ‘victim of its success’.

One user said:

‘Very busy in the gym. Need more of the commonly used machines.’

Specialist sports facilities



As these questions relate to specialist facilities, response rates were generally lower, reflecting the more niche user demographic.

The squash courts, table tennis/archery/fencing salle, and climbing and bouldering walls received strong averages of ‘8.4’ to ‘8.9’, indicating very good satisfaction levels.

Respondents said:

‘The climbing is good.’

‘Squash courts are good.’

Members of the Sport team identified that both the squash courts and the archery/fencing salle provide facilities which are not commonly found in sports centres, which make it easier for users to engage in their sports and attract people to the facility.

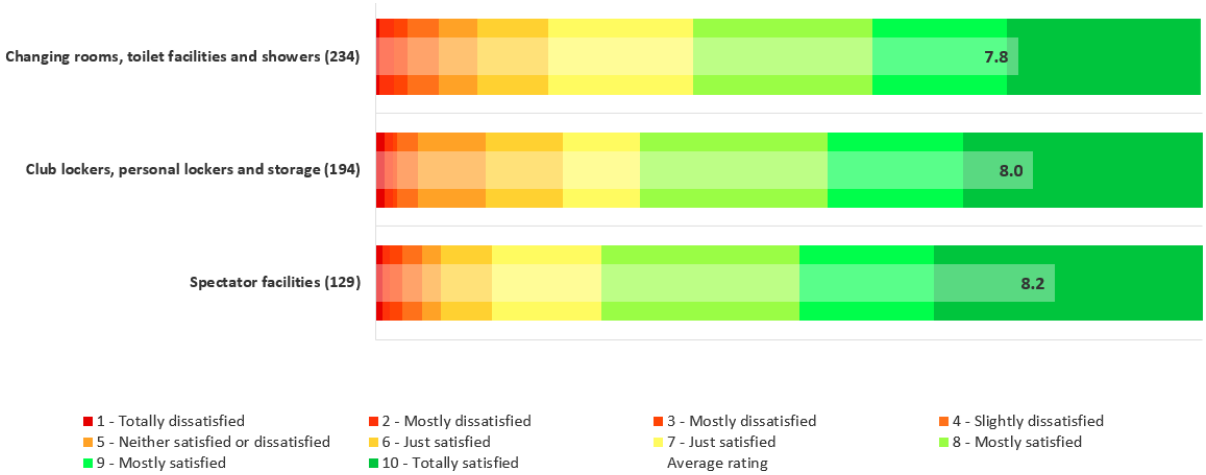
Stakeholders identified:

‘It is very rare that you go into a facility that you have an archery range or a fencing salle readily available to you.’

‘We have an all-glass squash court. There are only three of them in the country that you can access, again, that drives the business to us.’

The martial arts dojo received a slightly lower rating of ‘7.9’, and there were some respondents who were dissatisfied. Users like the dojo window and note that it is a good space for yoga and Pilates as well martial arts. However, some noted that the dojo isn’t always clean and has ventilation issues which lead to it being rather stuffy and smelly.

General facilities



Changing rooms, showers and toilet facilities received a respectable rating of ‘7.8’, although feedback indicates that overall, some users are less enthused about these functional spaces. Whilst some praised the showers and changing rooms, others commented that there ae too few toilets and that showers and changing rooms were a little ‘below par’.

Users said:

‘Not to the standard you'd expect of a flagship sports facility’

‘The showers desperately need improving; they are a big letdown.’

This was an area where stakeholders were even more critical, awarding an average rating of ‘6.3’. There is a general belief that the toilets and showers are an area where the installation

quality was not quite as good as it should have been. In addition, the clear brief about the type of drains required was not followed, in some cases leading to an unpleasant situation with dirty water transfer.

One stakeholder commented:

'The drain is perpendicular to the showers but normally you would have them directly underneath. So, you have someone else's dirty water washing down over your feet.'

The graduation team and exam team feel that there are too few toilets and those within changing rooms can be hard to find, for those attending for an event.

Most pressing is the need for some toilets at the dojo end of the facility, and for having an additional disabled changing room around the sports injury clinic, to support the flow of customers arriving and leaving appointments. Adding these facilities is being investigated as a future improvement.

Club lockers and personal lockers received an average rating of '8'.

Whilst most people were satisfied with lockers, a lack of lockers near the gym was raised by quite a number of respondents, and some felt that there need to be more large lockers for the storage of personal items which may need to be brought if the gym visit is in transit from work or study.

One user said:

'Lockers far away from the gym and too small if having to store work backpack and sports bag.'

Unfortunately, it would not be beneficial to add lockers within the gym because this would take up vital floorspace in a facility which is already very busy. The solution may be about increasing understanding of the best customer journey to guide gym users to the best lockers for them. There have been customer journey videos in the past, and refreshing and re-publishing these may improve customer experience, and hence satisfaction.

There was not significant feedback about the club lockers. They were mentioned positively, although there appears to be a specific issue relating to the wheelchair basketball locker, which needs to be resolved.

One respondent commented:

'The wheelchair basketball locker which is shared with dodgeball is not suitable for the amount of storage needed. There have been conversations for a year about having a shelf put in, but this has gone nowhere.'

Spectator facilities received a positive rating of '8.2'. There are some very good viewing facilities, most particularly the facilities that were built around the glass squash court. However, with hindsight, some of the high-level viewing has not been as versatile as hoped, and the outdoor terraces have not really worked, and hence are rarely used. Based on current usage, these outdoor spaces would ideally be brought indoors but this would come at considerable cost and hence would need to be subject to detailed feasibility studies and approval of a business case, which is seen as being unlikely at this time. Cheaper options to use the main terrace could be considered, such as using portable seating when events are being played on the pitchers.

A stakeholder commented:

'The viewing balcony is very high. From a spectator/player perspective, you don't get much atmosphere at court level. On reflection, we would have explored putting in some seating at a lower level.'

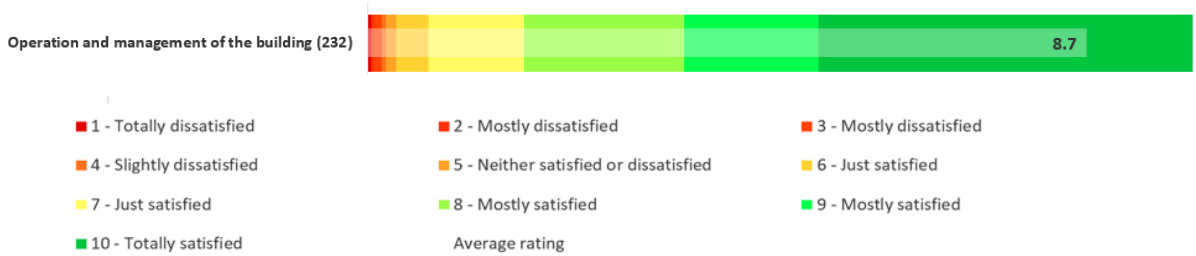
A member of the project team said:

'The external terrace has almost become an abandoned, windswept space. With hindsight, that space could have been better utilised.'

Recommendations

- Add additional toilets near the dojo and disabled changing room at the sports injury clinic, if space and budget allow.
- As adding additional lockers would compromise spaces, review and refresh the customer journey videos to guide users to the best located lockers for them.
- If ever commercially viable, bring the outdoor viewing terraces indoors to increase the value of this space.
- Consider the use of portable seating on the external terrace and the addition of further relocatable bleacher seating in the main hall.

FEEDBACK RELATING TO OPERATIONAL ISSUES



Feedback from users about the operation and the management of the building received a high rating of '8.7'. Operational issues were raised by the interviewees; however, it is positive to see that these are not generally things that everyday users are impacted by, or significantly aware of.

As the building has been operational for over eight years, there is an increased understanding of the operational challenges than would often be seen within a POE, and this needs to be considered when reviewing the feedback.

Estates team members who are involved in the maintenance and repair of the building suggest that there are a significant number of issues linked to the ongoing management of David Ross Sports Village. They feel that the number of issues is rather higher than one would hope for in a relatively new facility but also acknowledged that based on the heavy use, there are many areas that are holding up well.

One respondent said:

'In ideal world, a new building, you would like it to be fairly quiet from a maintenance point of view, but it has had a lot of involvement because of some of the construction issues.'

Due to the long opening hours, finding a suitable time to complete required works in a manner which manages health & safety can also be difficult.

One member of the university team noted:

'David Ross gets hammered more than any other building on campus, because the opening hours are something like 6am until 10pm. So, trying to find suitable down time is difficult.'

Since opening there have been ongoing leaks from the roof, which impact the spaces below. Some of this is believed to be because of the inverted roof design and to do with poor construction, such as debris blocking outlets. There have also been issues with leaks from the hydrotherapy pool and squash courts which have not yet been fully resolved.

A building surveyor commented:

'The roof is difficult because it is an inverted roof. It is difficult to find an outlet so if you have a blocked downpipe, it is hard to locate where that outlet is.'

There is an issue in relation to the capacity of the drains, with the drains installed in the building having a higher capacity than those that they link to. This has led to issues with blockages within the system, and in some cases construction waste has been found within the system.

A respondent identified:

'Currently we have the new drains laid at 200ml, which feed into the existing system, which is 150ml, so you are putting a lot of volume in for the capacity of the waste. The capacity has not been thought about. The drains have posed problems, partly due to issues of construction and material found in the drains even now. The drains do flood and back up.'

A lack of storage and operational space causes issues for the team running the centre day-to-day, and for the staff managing the café. Stakeholders are conscious that this makes daily life more difficult for staff and can look messy and impact the user experience. Whilst this can seem a small compromise during design, it feels significant now for those who are running the centre day-to-day.

One stakeholder said:

'It is little things that people don't see as being important but are major issues, for both sport and catering. There is no storage. There is nowhere to put things.'

A lack of on-site storage for large events is an increasing issue, and one which brings considerable additional cost for the university. A large volume of equipment used for high profile, core mission events, including graduation, exams and sporting events, is stored a significant distance from David Ross Sports Village. KMC, a facility currently being used to store equipment, is earmarked for closure. Work has already begun to justify building a logistics hub alongside the sports centre. Respondents are confident that the costs currently being incurred to set up events will justify this project. Event set up will be slicker and easier for the teams setting up events, and it would reduce the impact on sporting users.

One of the ongoing concerns raised by both Estates team staff and the Sport team is the lack of a long-term plan for future maintenance, including budget availability. David Ross Sports Village is a very large, heavily used facility and there will need to be a programme of ongoing maintenance in the future to maintain the current high standards, rather than simply dealing with issues when they arise. Commencing a system of planned preventative

maintenance, while the building is still in a good condition, should be more cost effective than waiting until issues have become more significant, plus will maintain the expected high standards within this high-profile facility.

Respondents said:

'The lack of a long-term maintenance plan. We built this massive facility and there is no staged plan for when we are going to repaint it, replace floors etcetera.'

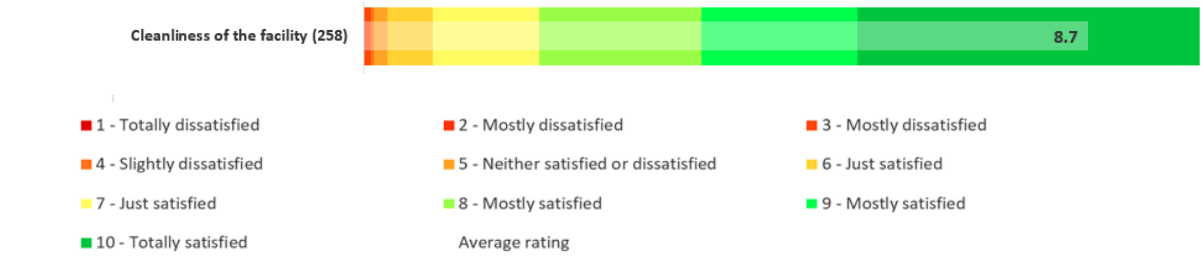
'There isn't a plan, so basically it is done on a sudden 'oh that is now broken, we need to fix it'.'

Condition surveys are taking place across the university to produce 3D modelling of buildings across the campus and their existing maintenance needs. This will assist in identifying the maintenance requirements for David Ross Sports Village, but it was noted that these will need to be considered versus the requirements of other facilities.

Recommendations

- Review any information currently in place for planned preventative maintenance and the condition surveys, to define a costed programme of required maintenance for the facility. Use this to project, plan and allocate the required budget for future maintenance.
- Continue the project to create an on-site logistics hub to store equipment required for mission critical events. Use existing cost information to justify the implementation of this new facility.

Cleanliness



The level of cleanliness is well rated by users, who awarded an average rating of '8.7'. This is particularly positive in a facility which gets extremely high footfall, and where the risk of sweat and dirt is an operational hazard.

Some users specifically noted that the facilities are kept clean, although there were a small number of comments about some spaces such as the HPZ, dojo, and toilets occasionally being dirty.

Users said:

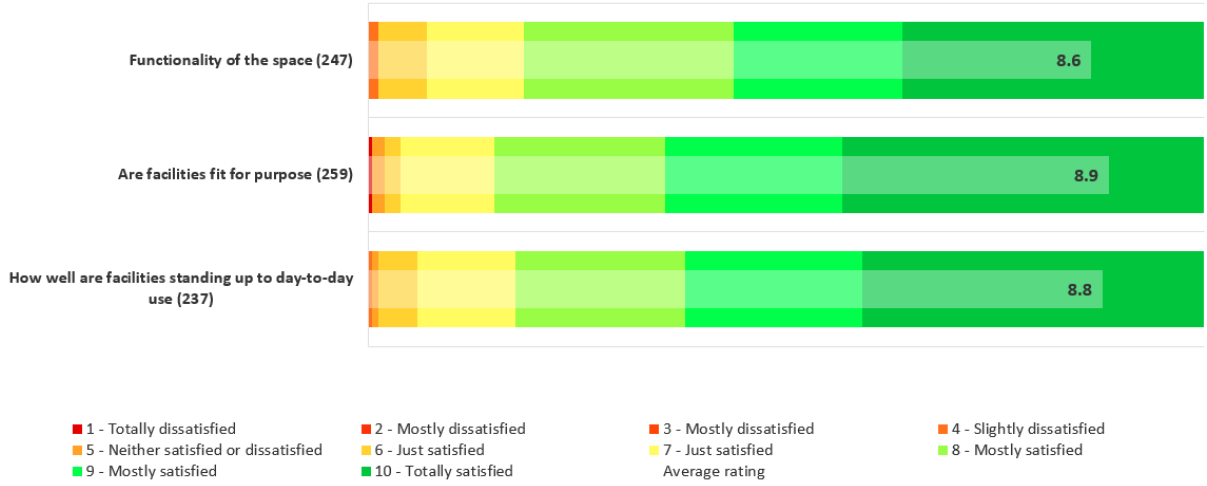
'The facilities are always really clean.'

'It feels very modern and clean.'

'The HPZ is noticeably dirty regularly.'

'The toilets are often unclean and need to be attended to more frequently.'

Day-to-day use



Ratings of 8.6' for functionality, '8.9' for whether facilities are fit for purpose, and '8.8' for how the building is standing up to use, demonstrate high levels of satisfaction in how the facilities work day-to-day.

Some users specifically noted how good the facilities are when compared to other sports centres.

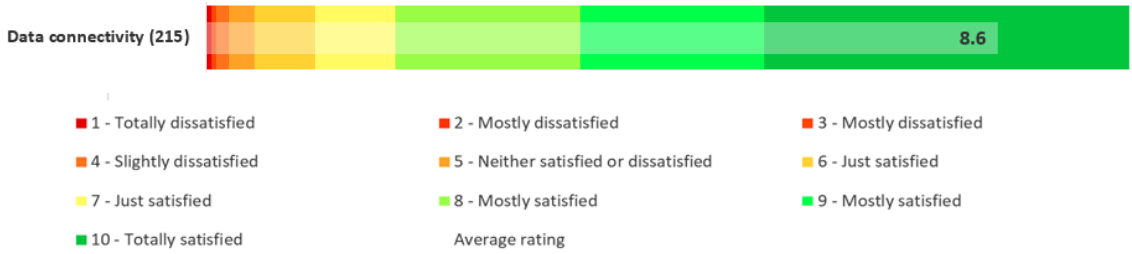
One user said:

'It is very large, filled with sports of all types.'

'The facilities are world class.'

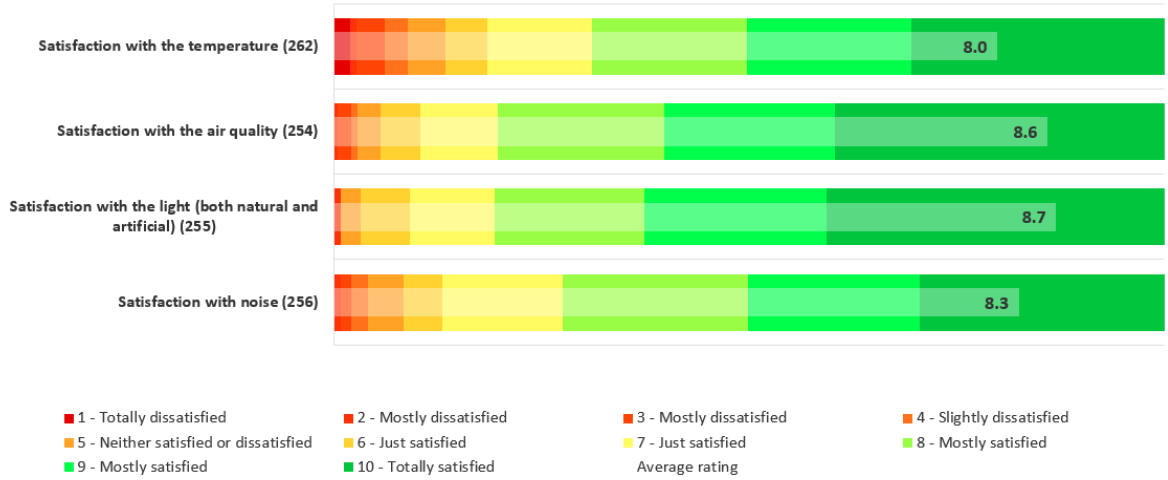
However, issues with parking and how busy the centre can be may impact these ratings for some.

FEEDBACK DATA CONNECTIVITY



Data connectivity received an average rating of '8.6'. This is not a key feature of the centre but there are no indications that people who need to connect for Wi-Fi and calls are unable to do so.

FEEDBACK RELATING TO THE QUALITY OF THE INTERNAL ENVIRONMENT



Heating and cooling

Temperature received a very respectable average rating of '8.0', which is comparatively high for a POE. It is generally difficult to maintain a temperature that all building users will find pleasant, particularly in a building where individuals will be working at different activity rates; so, this is a success. However, there were a percentage of people who were dissatisfied with temperature.

Most negative comments suggested that areas such as the gym and dojo can be too hot, although there were also a small number of comments suggesting that some areas can be too cold. The position of reception, near to doors which are constantly opening, can make the working space very cold during the winter.

Temperature is potentially more of an issue when the space is being used for one of its other purposes, most notably exams and graduation. During exams, in particular, some students feel that the space is too cold. It may be that an alternative heating strategy needs to be initiated during these events, and this could be done via the BMS.

One interviewee commented:

'The ideal temperature for sport is very different from the ideal temperature for exams. Sometimes students will complain that they are cold.'

Air quality was given a high average rating of '8.6'. However, air quality in the dojo was identified as an issue, with suggestions that this space can be very smelly. The smell is a particular issue during graduation, when this space is often used for VIP gowning.

One interviewee noted that the CO_2 levels in this space can get too high and that this may be due to a mismatch between the number of users and the plant catering to it. Work is currently being undertaken by the Estates team to identify whether this is as a result of a design issue, or whether it is due to equipment malfunction. Headway has already been made to optimise functionality and this should continue.

One interviewee noted:

'We get higher levels of CO_2 than we should in the dojo where you have high respiration levels for 150 people in a room that the plant seems to be specified to cater for 60.'

Lighting

Natural and artificial light received a good average rating of '8.7' from users.

Not all spaces were designed to have a lot of natural light, both to manage project costs and to manage lighting patterns for sporting events. This decision does not appear to have negatively impacted users for sport or events.

There were positive comments about the windows in the dojo and the gym. The large gym windows fill this space with natural light and give fantastic views, and the artificial lighting here was also praised.

Users commented:

'The lights in the gym are good.'

Interviewees note that it is unfortunate that LED lights were not used, and the building may benefit from a future project to install these.

In the main sports hall, the sport multifunctionality has created some issues; with shadows from the cricket nets impacting one of the badminton courts when it is used at competition level. Efforts have been made to overcome this by tying back the cricket nets, but it can only really be resolved by taking the cricket net cradle down, which is not an entirely practical solution.

One member of the project team said:

'There was an issue with the cricket nets; they didn't map the equipment with the lighting. The cricket nets under hang the lighting which affects the light level for the court underneath which means they are non-compliant in terms of achieving a consistent level of lux across the floor.'

Sound

Satisfaction with noise levels was also well rated, with an average rating of '8.3' awarded by users.

The David Ross Sports Village is not a particularly quiet space, but there is not an expectation from users that it will be. During exams and graduation, use of some spaces, most notably the squash courts, must be limited to minimise the transfer of noise; but disturbance was not generally felt to be significant.

A small number of users noted issues with noise transfer from noisy classes, such as combat, to quiet classes, such as yoga, but given the ratings this is not significant.

Locating the gym on the upper floors has led to noise transfer to some of the office and meeting spaces below. The team were advised that this would not be an issue, and reverberation is within damping guidelines, however it still feels and sounds significant in some areas. It is suggested that this does impact the usability of some spaces, depending on activities taking place.

One member of staff noted:

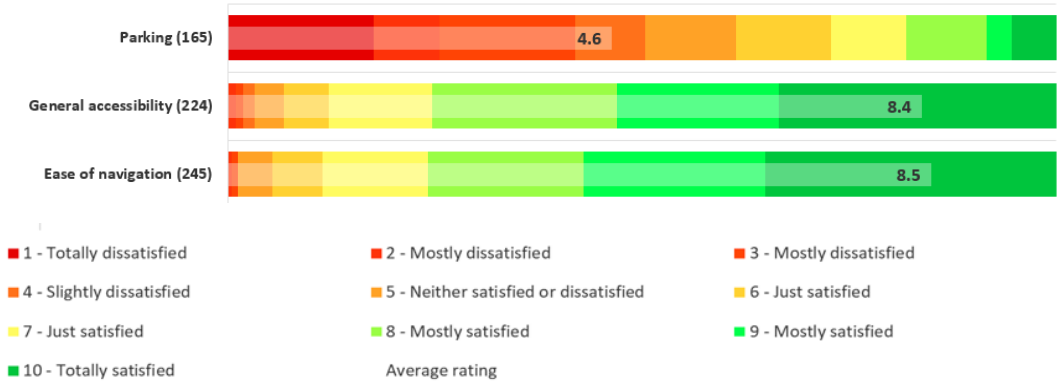
'There is a reverberation issue between the floors. What is imperceptible in terms of reverberation in the fitness suite on the second floor, feels like an earthquake on the ground floor depending on where you are because of the reverberation through the beams. It is not possible to have a meeting in a number of the offices, if there is a specific type of class taking place in the fitness suite.'

In retrospect, it would have been better to have plant rooms, toilets and changing rooms beneath the fitness suite, rather than office spaces, as the transfer of noise to these spaces would have had far less impact on users.

Recommendations

- Work with colleagues who manage the BMS to review whether there would be a benefit to scheduled adjustments to temperature to coincide with exams. Implement and review.
- Continue to review the performance of air handling equipment, particularly in relation to the dojo, to maximise performance and identify the source of issues relating to ventilation. Make equipment adjustments if required.
- For future projects, where noise generation and reverberation may be an issue from upper floors, place plant rooms and transitional spaces underneath, rather than spaces such as offices, where users will be far more sensitive to noise transfer.

FEEDBACK RELATING TO ACCESSIBILITY AND NAVIGATION



Parking at David Ross Sports Village is a considerable issue, with only a very small number of parking spaces available compared to the number of visitors to the centre at peak times. There is also indication that staff working elsewhere on campus park here because of an absence of spaces elsewhere. This is all reflected in very low user satisfaction in relation to this feature. An average rating of '4.6' was awarded, with 50% of respondents awarding a rating below '4', indicating active dissatisfaction.

It was understood at the design phase that the number of parking spaces was low, but the impacts of this are now being keenly felt by users. This is not only inconvenient, but it also results in users missing booked classes and receiving strikes, getting fines, and in the worst case, questioning their decision to remain a member of the centre. Users with mobility issues suggest that there are insufficient disabled parking bays.

Users said:

'Seriously considering ending my annual membership due to parking difficulties.'

'The parking is horrendous, and I often can't get a space and have been late to classes.'

'There are far too few disabled parking spaces for the number of disabled users.'

'Please sort out the parking, and machines and the handling of fines.'

It is apparent that additional parking would significantly improve user satisfaction and impact the one area which users are truly disgruntled about. The nearby 'slab', used for the temporary sports facilities, has been identified as a potential solution. Converting this to car parking would provide 150 additional spaces, which would go a long way to alleviate the current parking limitations. It would also allow for a review, and potential adjustment, of the number of disabled spaces provided closer to the centre. This has been approved in concept, but costs have come in higher than budget, so further work is required to deliver this. All the evidence for this POE, and from user complaints, suggests that this would be worthwhile.

Users were much more satisfied with general accessibility and navigation around the centre, which both aspects being rated above '8.0'.

Users feel that the centre is accessible, and that it is positive to have so many facilities within one sports centre. Stakeholders have some concerns that the new main entrance created a very long walk to the swimming pool, but this was not notably raised by users.

One user said:

'I like that everything is accessible and in one place.'

The exams and graduation team, plus centre management, identified that the single main entrance creates difficulties and bottlenecks at times when large numbers of people arrive at once. This can occur at sizeable sports events but is particularly noticeable when large numbers of people arrive for exam start times and graduation ceremonies. If the weather is poor and people want to get inside quickly, this exacerbates the issue. In the past, money has been spent putting up temporary marquees to provide outdoor shelter for exams, but budget constraints mean this is no longer possible.

Alternative routes have been used over the years, and adapted as space use changes, but these can also bring bottlenecks within corridors.

Stakeholders commented:

'Our biggest challenge with graduation and exams is access and egress.'

'Because of the impact on customers, students attending David Ross for exams have to use the door around the back of the building and then walk up a corridor. When you have 900 students at a time, that is quite challenging.'

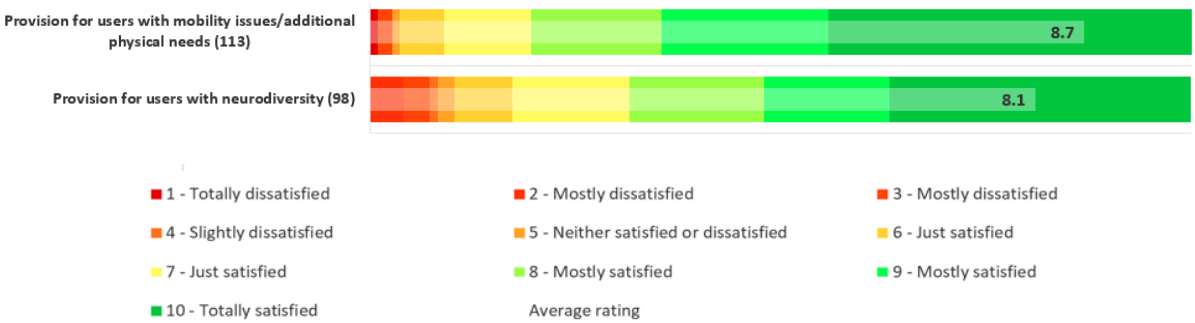
Flow plans around the centre were created as part of the design, and it may be of value to revisit these to review how the current reality compares to these plans. For projects being designed now, the university is developing personas to allow review of utilisation from the perspective of these different types of users and ensure building flow is better understood. It is accepted that this may have avoided some of the issues now identified.

Creating a second entrance at the front of the building has been discussed, as this would allow for the funnelling of different visitors through different doors during events. This would be a longer-term plan that is likely to improve events and visitor experience. However, it would not come without cost, and the benefits of these would need to be justified to warrant approval at a time when higher education is suffering financial challenges. It would need a very focussed business plan to justify this.

Recommendations

- Continue to work to obtain approval to create an additional 150 parking spaces on 'the slab'.
- Review the flow plans developed as part of the design and compare these to the current reality around exams, graduation and events. Use the findings to identify whether any improvements can be made.
- In the longer term, review whether a second entrance would be a worthwhile upgrade and if so, create a robust business case to support this.
- For future projects, use personas to track the journeys of different types of users to identify potential issues during the design phase. For catering use 'sequence of service'.
- Consider using the direct goods-in route for exams as this will give an easier route once in the building. Use gazebos to give external cover, if budgets allow.

FEEDBACK RELATING TO USERS WITH ADDITIONAL NEEDS



It is apparent from visiting David Ross Sports Village that the centre supports a strong para community. 10% of respondents identified themselves as having some kind of disability or restriction.

The ratings given for the provision for those with additional needs was good. An average rating for those with physical restrictions was '8.7', with a slightly lower rating of '8.1' for those with neurodiversity.

As noted in the previous section, users and staff identified that there are too few parking spaces for the disabled. Staff feel that this is part of a wider issue across the whole university campus. In addition, the size restrictions noted within the café particularly impact wheelchair users making it hard for them to move about and turn when it is busy.

The restrictions created by only having one lift were identified by both users, and more particularly, project group members. There is consensus within the project group that the decision to remove the second lift was a mistake which does impact operations and disabled

users. When there are lift breakdowns, or the lift is undergoing maintenance, the sports injury clinic becomes inaccessible, and users may be stuck on an upper floor.

One interviewee commented:

'The one lift is an issue as well. If someone gets stuck on the first floor you have to get them down using an evac chair. That is not a very dignified exit from the building.'

Capacity on the upper floors is restricted because of the number of refuges available. This is out of step with some of the groups engaged and using the centre.

One user identified:

'The limitations on the number of wheelchair users on level 1 and 2.'

A stakeholder noted:

'On B floor we have four refuge points so in its strictest form, our occupancy for the B floor for disabled users is four. When you are in partnership with wheelchair basketball or other disabled sporting or non-sporting customers then that makes it quite difficult.'

There is a 'Changing Places' room which, for those that use it, makes changing, showering much more achievable.

One stakeholder commented:

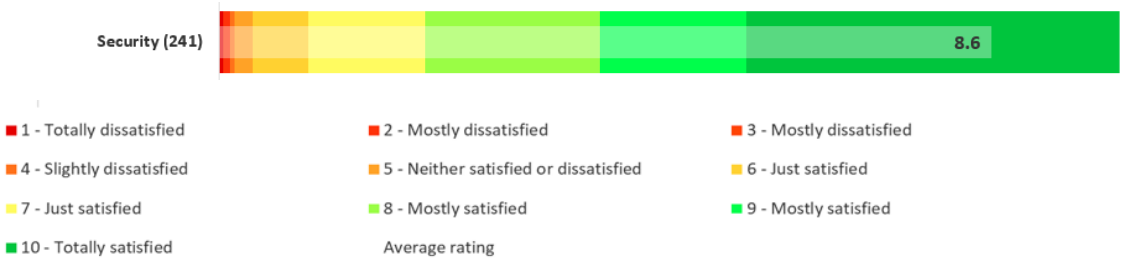
'There is a Changing Places facility which has a ceiling hoist to lift people out of chairs and onto changing beds, where you can get people changed and you can get showered on there. There are moveable sinks and so on. They're amazing facilities and we had the first one on campus.'

In 2014, when this project commenced on-site, there was much lower awareness of neurodiversity and adaptations that may be utilised to make spaces comfortable for those impacted. This was therefore not a focus for the project. In addition, it can be difficult to accommodate low lighting and quiet spaces in a facility that is inherently full of activity. However, it may be that some adjustments could be made, or sessions introduced to try to assist those who are neurodiverse.

One stakeholder commented:

'Arguably there is a large population that we are not serving with the neurodiverse community. That could be through neurodiverse lighting regimes etcetera.'

FEEDBACK RELATING TO SECURITY



Most users are satisfied with security, and it received an average rating of '8.6'.

There was, however, considerable feedback about the number, size and location of lockers which may feed into the ratings of those who were dissatisfied or neutral about security. This

will be particularly the case if users are coming to the centre directly from other places and have I.T equipment to stow.

One respondent reported having had their coat stolen and not recovered.

Does David Ross Sports Village meet the needs of those who use it?

David Ross Sports Village meets the needs of a wide range of customers. Sporting facilities are provided for students, alumni and members of the public through membership of the centre, or on a pay-as-you-go basis. The space is used by 12,000 members and a further 2,000 pay-as-you-go customers each year, with over half of students having memberships.

There are facilities for a wide range of different sports, as well as more general workouts within the excellent gym. The high-performance zone meets the needs of more elite athletes, including an Olympic medallist.

At a competitive level, the centre hosts inter-university events, plus national and international sporting competitions. The university partners with sporting governing bodies and supports university clubs.

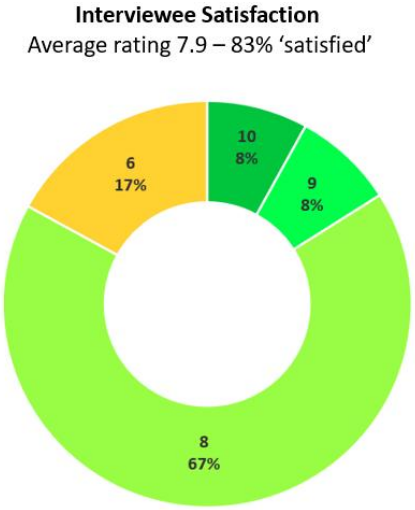
One member of the Sport team said:

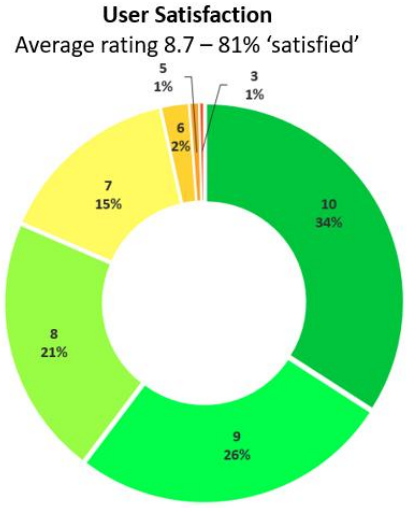
'We often talk about the performance advantage the spaces give the university in terms of both the performance for our own athletes and as well as our ability to attract large scale national and international events to the university.'

In addition, the centre successfully hosts important, large-scale events within the university calendar. Whilst there are some compromises, graduation, exams and other key events are successfully run from the David Ross Sports Village. Whilst these may be more challenging to set up than they would be in a purpose-built space, doing these within this facility maximises the utilisation of space throughout the year.

The very high satisfaction levels recorded from users supports this conclusion.

OVERALL





Very high satisfaction ratings were awarded by both interviewees and users. 83% of interviewees and 81% of users gave a rating of '8' or above for their overall satisfaction. This is an excellent result for a POE.

User feedback indicates that the sports facilities are to a very high standard and surpass their experiences elsewhere.

Users said:

'Best sports hall and courts in the country. Amazing gym and great sauna.'

'Absolutely love the facility. We used to be members of David Lloyd and despite this being considerably cheaper, the facilities far surpass them!'

The project was not without difficulty and the design was complex, given the broad range of uses required for the building. There are compromises for some uses, such as graduation, and ongoing maintenance is a challenge. However, the level of success clearly outweighs the difficulties.

One member of the project team commented:

'After all the trials and tribulations, the project achieving planning permission, and after the delays and additional cost pressures that caused, we were able to deliver a fabulous facility for the university and the students.'

A stakeholder said:

'We feel it has done a huge amount for our student population. It was a game changer from our point of view; certainly, for our own students and our ability to attract and retain the best students and give them the best experience.'

WHAT MIGHT HAVE BEEN DONE DIFFERENTLY?

The development of the new David Ross Sports Village was a very successful project, and there are many areas of best practice which can be learned from and replicated to improve

the success of future projects. Any other sports developments could also benefit from some of the more detailed learnings about spaces, facilities and equipment.

However, as with all projects there are things that could have been done differently. Some of these are indeed areas where the university has already progressed since the completion of this project, such as improved handover processes.

With hindsight, some of the design and construction decisions could have been different, although they were made after consideration at the time. The hydrotherapy pool may have been better on the ground floor, and the main contractor identifies that they would have changed the methodology used to build the squash courts, to avoid the resultant leaks. A larger café would have improved operations, supported events and increased income generation.

Inclusion of a second lift was mentioned by many respondents. This would have eased issues when repairs and maintenance are required, as well as improving access and capacity restrictions on those with mobility issues and those who use wheelchairs. It was probably a mistake to remove this from the design.

One member of the project team said:

'We probably should have put in a second lift. If we could do it again, we probably should have made the café bigger.'

Incorporating more storage and additional access points would have eased issues in day-to-day running, as well as reducing friction during exam and graduation periods. Increased thought about the supporting spaces used during graduation may have reduced the ongoing costs of hosting these events.

Increased engagement with teams from building maintenance and events may have improved the facilities, reduced maintenance and improved the understanding of compromises which were necessary. This is something that the university is already working to improve and needs to continue to develop as resources allow.

Devising a long-term maintenance plan as part of the project would have improved understanding of the long-term costs of upkeep and ensured that the appropriate budget was available.

Suggestions identified by interviewees included:

- Including more storage.
- Additional doors and toilets.
- A larger café.
- Operations team consulted on technical specifications and maintenance criteria.
- Devising a maintenance plan with associated costs.
- Having a university clerk of works.
- Seconding stakeholders to the project full time.

CONCLUSION

The development of David Ross Sports Village was a large project which impacted not only university sports provision but also key university events. The project had a bold vision to set new sporting provision standards for University of Nottingham and the wider UK higher education sector. The signs suggest that the project has been successful in this regard. University of Nottingham is playing a core role in both elite sporting events, plus wider engagement in sport and physical activity amongst the student and local community. This supports wellbeing at a crucial time.

Using a sports venue for exams and graduation will always come with compromises when compared to using a purpose-built facility. The project hasn't changed this, but the facility does still allow for successful, appropriate graduation ceremonies and large volume staging of exam sessions.

User feedback is extremely positive, with very high levels of satisfaction relating to the sports provision, as well as supporting facilities. A lack of parking is the only aspect creating significant dissatisfaction.

Given the long period of time since the opening of David Ross Sports Village, the project group and stakeholders retain a good focus on the original goals and how closely they were achieved. Whilst there are some things that would be done differently now, these do not overshadow what has been an extremely successful development.

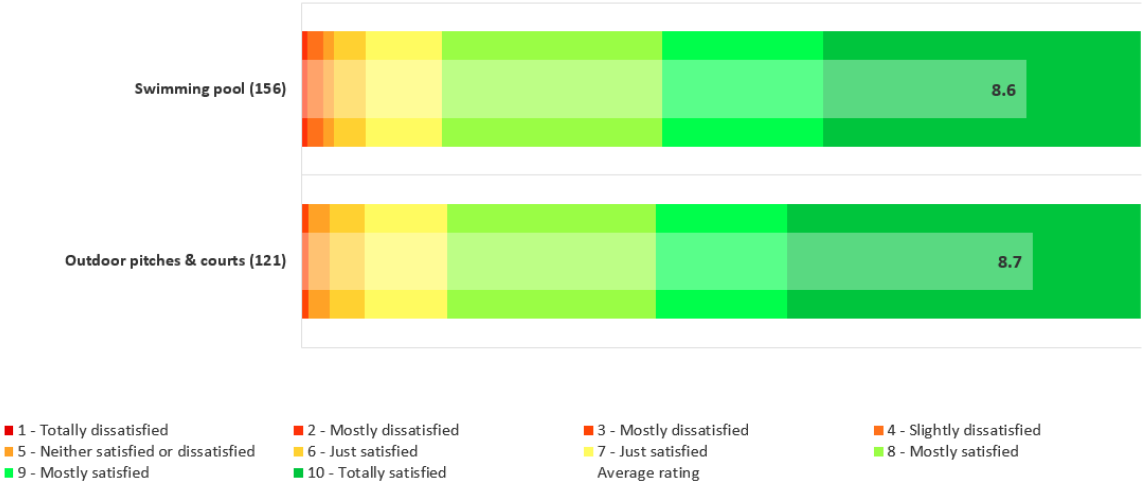
One member of the project group summarised it as:

'The university did an amazing thing. It was a huge, bold step; the amount they invested in a single site at that time. It made a statement as to what they felt students deserved here and should expect when they come here. It still says that, and it still does that for the people that come here for open days. We know that it is a massive factor in why students choose to come here.'

USER EXPERIENCE FEEDBACK

Whilst user experience does not make up part of the POE process, the data gathering did draw out beneficial feedback which is useful for the Sport team and to aid ongoing operations. This is detailed below.

FACILITIES WHICH WERE NOT PART OF THE DEVELOPMENT



The swimming pool and outdoor pitches were not upgraded as part of the development of David Ross Sports Village, and as such do not make up part of the POE. However, feedback about these facilities was positive with good average ratings award for both.

Most respondents are satisfied with the facilities, which are considered to be of a good standard.

Users said:

'Clean modern pool.'

'3G Pitch [works well]. Ability to book courts.'

There were a few niggles about the functionality of showers in the swimming centre and the surface of the hockey pitch.

One user commented:

'Hockey astro is old and needs a new surface.'

GENERAL EXPERIENCE

Members of Davis Ross Sports Village are paying a reasonable, but not inexpensive, rate for membership. There is a specific student rate, as well as reduced rates for alumni and disabled memberships. For members of the public, there will be cheaper gym and swimming options available, so this will set the standard in terms of expectation.

As part of the on-the-ground study, users were asked two qualitative questions which garnered feedback on user experience. These were:

- Are there any aspects of the facility that do not work well for you? What issues need to be addressed?
- Are there any additional features that you think should have been included in David Ross Sports Village, or you would change if you had the opportunity?

Analysis of the responses given identified the most mentioned issues and suggestions.

Most frequently mentioned improvements or additions made by users:

The table below shows the changes which user satisfaction respondents most identified to improve the experience of users. Four of these were relevant to the POE and are outlined within the POE section of the report; these were parking, toilet, showers and changing rooms, lockers, and temperature and air quality. However, four others relate to user experience rather than the POE and further information is provided below. A list of quotes is available in a supporting Excel document entitled 'User satisfaction verbatim comments'.

Most frequently mentioned items (number of mentions)
Busyness, class availability, timetables and hours (89)
Parking concerns (73)
Additional facilities, spaces and equipment (41)
Toilets, showers and changing rooms (35)
Booking, systems and communication (33)
Lockers (30)
Affordability and cost (29)
Temperature and air quality (27)

Busyness, class availability, timetables and hours

This was the most frequently mentioned item, with users suggesting that their experience is negatively affected by how busy spaces are, particularly the gym, and that there is often a lack of availability of classes.

Users said:

'Sometimes the gym is very crowded, and it is too difficult to use most of the equipment.'

'Lack of classes and space available can be daunting.'

Suggestions were put forward which would assist with this. Some felt that the centre should be open for longer hours, with earlier and later opening suggested. Provision of an app to show how busy the gym is, was also mentioned by several respondents; it was noted that other cheaper gyms have this functionality.

Respondents suggested:

'We should open even earlier. People trying to get exercise before work don't have much time.'

'I wish there were more late evening classes!'

'An App that shows you how busy the gym is - Pure Gym do this.'

Some respondents suggest that spaces are sometimes unavailable but not being used. For example, part of the pool roped off for lessons but actually empty, this meaning the rest of the pool feels busier.

The centre is very popular and busy. As a social space, many students like to visit at the same time as their friends and this can exacerbate the feeling of busyness. Whilst this centre could no doubt be expanded; it is the strategy to expand the facilities at Jubilee campus as a priority. This is better located for students living in accommodation, and houses in the Lenton area, and may also reduce the pressure on the David Ross Sports Village.

In relation to tracking how busy the centre is; a contract has been signed to install beacons in spaces so that live data can be provided. This needs to be installed and should provide some of the extra functionality desired.

Unfortunately, it is not commercially viable for the centre to offer the same number of classes outside of term time as offered when students are engaged. This will lead to a reduced programme for public members. The centre is adjusting its programme and adding new classes, particularly around Pilates, in efforts to meet the needs of users.

Additional facilities, spaces and equipment

This feedback suggested that there is an appetite from users for even more. Some of the suggestions were entirely fanciful and some would be expensive to construct, but others may be facilities that could be added within the existing facilities, or if further development took place.

Suggestions included:

'PLEASE, PLEASE, PLEASE get the Keiser machines in the gym. Everybody wants them. It is what they are missing in the gym.'

'More cable machines in the gym.'

'More private space for Pilates/yoga.'

'Add a bar or social space.'

'Padel court.'

'More water fountains

'Add a small prayer room.'

Booking, systems and communication

Feedback about the website and booking was not positive and suggested that some updating would be beneficial. Some users suggested that it feels out of date and not user friendly. They would like to see a specific portal, or app, to make this easier; they would also like to be able to book classes further in advance.

Users commented:

'Your website is dreadful. You need to make it easier to sign up for membership and book sessions and lessons.'

'Have a proper online booking portal. The booking system is currently very 1990's.'

'Be able to book onto all classes more than 3 days in advance.'

When visiting David Ross Sports Village users feel the systems don't ease access. Members are frustrated by having to keep signing in to avoid a 'strike' if they have attended site for multiple classes, and some would like passes to be digitised.

Users said:

'If I book multiple classes/sessions and if I don't sign in within a timeframe, I get a strike on my account, meaning I have to sign in multiple times in one visit.'

'Digitalised gym pass to enable access via phone app.'

There was also feedback that booking information is not always accurate, with facilities sometimes busier than booking indicates, or classes which indicate they are full when they are not.

Members suggested:

'Pool booking system sometimes does not match reality.'

'Classes say they are booked but they aren't.'

There is a real desire from the Sport team to have an app to improve user experience. The team is working very hard towards this, and it is the intent to make this happen.

Affordability and cost

With increases to the cost of living, it is perhaps unsurprising that some feel the membership is quite expensive or suggest that they would like to get something 'extra' for their money. Having to pay 'on-top' to use facilities even as a member was something that was raised by a number of respondents. Given reduced membership fees are unlikely, making people feel that they are getting more may be the better option to resolve this.

In relation to cost, members noted:

'Even with gym membership, you have to pay for all the other facilities.'

'Sauna should be included in the membership.'

'Access to one or two free sessions for the sauna or physio specialists with the membership as it is fairly expensive compared to other gyms and it would be helpful for people who come often.'

'Have a loyalty discount'

Recommendations

- Develop the plans to expand the sports facility provision at Jubilee campus.
- Install tracking beacons to provide live centre data, thus allowing users to understand how busy spaces are and plan their visit accordingly.
- Continue to review and adapt the programme of classes to best meet the needs of users.
- Roll out an app to aid booking of classes, checking into the centre, monitoring for quiet times and communication.

APPENDIX 1: POE RECOMMENDATIONS

Best practice

Numerous areas of best practice were identified, which can be used to influence the success of future projects. These centred around having a clear brief and vision, plus collaborative relationships supported by face-to-face contact.

- As best practice learning: ensure that project briefs are as clear as possible and place functionality at the heart of the vision. As appropriate, consider the importance of external aesthetics based on the location and demands of the specific development site.
- As best practice learning: at the outset of projects, try to engage stakeholders who have time available for the project and can think strategically and understand project requirements over future years.
- As best practice learning: ensure that the project group culture supports sharing of ideas and involvement in decision making, in a manner that does not delay project progress.
- As a best practice learning: ensure that design meetings take place face-to-face, to allow for the improved review of design drawings and design detail discussions. Only use online meetings for more straightforward information transfer.
- As best practice learning: where possible within competitive tender restrictions, select consultants and contractors where there are existing relationships.
- As best practice: on all projects, aim to have a ‘one team’ culture. Where issues arise, focus on working together to resolve the issue whilst maintaining an engaged project group.

Involvement of stakeholders and supporting functions

Whilst engagement with Sport stakeholders was generally excellent, the building has other core functions and consultation with these stakeholders could have been greater. There is acceptance that a greater focus on these secondary functions might have reduced friction when events are taking place in David Ross Sports Village. In addition, greater involvement from the wider Estates team may have improved some design details and ongoing maintenance. However, much of this has been addressed by change which has already taken place since the completion of this project.

- Where a building has multiple functions, ensure that the design bias is correct between primary and secondary functions. Ensure that there is the correct amount of dialogue with different teams to ensure that appropriate consideration is given to secondary stakeholders.
- Continue to develop and implement the updated processes to engage the wider Estates team, including building surveyors, in the design process and selection of equipment.

- Involve the university's catering team at an early stage of the design process to ensure that the overall space provided for catering is sufficient and to ensure that there is enough space for both staff and storage.
- For future projects consider visits to similar facilities by stakeholders of all critical functions, to improve understanding and identify unforeseen challenges and risks.
- For future projects, use personas to track the journeys of different types of users to identify potential issues during the design phase. For catering use 'sequence of service'.
- For future projects, consider the evolving requirements of students and ensure that spaces provided for cafés have sufficient capacity.
- For future projects, where noise generation and reverberation may be an issue from upper floors, place plant rooms and transitional spaces underneath, rather than spaces such as offices, where users will be far more sensitive to noise transfer.

Handover and defects

It is recognised that handover took place too soon and that this impacted the number of snags; in addition, some defects have taken too long to be resolved. Considerable work has been done within the university since 2016, which already address many of the issues experienced during this project. However, a small number of recommendations were still identified which could be beneficial to future projects, including the recruitment of a university clerk of works when resource allows.

- For future projects, ensure that there are agreed drawings and minutes from meetings throughout the delivery process, to give clarity that the whole team is working to the same agreed construction detail.
- For future projects, where temporary facilities are being provided, ensure that there is some spare capacity at the end of the planned programme to allow for reasonable, required project overrun.
- When resource allows, recruit an internal Clerk of Works to support in the delivery of high-quality works. Where appropriate, continue to engage an external clerk of works until this position is realised within the Estates team.

Support of events

The need to use David Ross Sports Village for graduation, exams and events continues to be a critical mission for the facility. There are some changes which could be made which would make this easier for the teams planning and delivering the events. Some of these will involve additional budget spend, but most notably the provision of on-site storage may also result in considerable savings which should assist the business case.

- Continue the project to create an on-site logistics hub to store equipment required for mission critical events. Use existing cost information to justify the implementation of this new facility.
- Work with colleagues who manage the BMS to review whether there would be a benefit to scheduled adjustments to temperature to coincide with exams. Implement and review.

- Review the flow plans developed as part of the design and compare these to the current reality around exams, graduation and events. Use the findings to identify whether any improvements can be made.
- Consider using the direct goods-in route for exams as this will give an easier route once in the building. Use gazebos to give external cover, if budgets allow.
- In the longer term, review whether a second entrance would be a worthwhile upgrade and if so, create a robust business case to support this.

Operational improvements

A number of improvements are identified which could improve user satisfaction, customer experience and resolve operational issues. Some of these would involve additional budget spend and hence robust business cases will need to be produced if they are to be realised. The user satisfaction data gathered as part of this study may assist in prioritising these. It certainly supports the view that creating additional parking spaces is the most critical update which would improve overall satisfaction and reduce complaints.

- Continue to work to obtain approval to create an additional 150 parking spaces on ‘the slab’.
- Review whether the plan to move reception to an island set up is necessary based on satisfaction levels indicated by the user satisfaction survey.
- Catering and Sport teams to put together a business case to justify the extension of the café, to maximise income and improve user experience.
- Add additional toilets near the dojo and disabled changing room at the sports injury clinic, if space and budget allow.
- As adding additional lockers would compromise spaces, review and refresh the customer journey videos to guide users to the best located lockers for them.
- If ever commercially viable, bring the outdoor viewing terraces indoors to increase the value of this space.
- Consider the use of portable seating on the external terrace and the addition of further relocatable bleacher seating in the main hall.
- Continue to review the performance of air handling equipment, particularly in relation to the dojo, to maximise performance and identify the source of issues relating to ventilation. Make equipment adjustments if required.
- Continue to use the BMS data to review energy use and identify any potential efficiencies to heating strategies.

Planned maintenance and maintaining the facility standards

David Ross Sports village is now over eight years old and ongoing maintenance will be required to maintain the current high standards, particularly because of the very high levels of use. Currently there is no long-term plan of maintenance and this needs to be developed and costed. Whilst spending limited maintenance budget on a newer facility may seem a lower priority, dealing with maintenance whilst condition is still good is generally a more cost-effective solution in the long term. A programme of replacement of lights to LED will reduce future running costs.

- Use BMS data and light maintenance information to identify the current running costs of the existing lighting units. Use this information to demonstrate the long-term payback of a switch to LED lighting, and when budgets allow, upgrade the lighting units.
- Review any information currently in place for planned preventative maintenance and the condition surveys, to define a costed programme of required maintenance for the facility. Use this to project, plan and allocate the required budget for future maintenance.

APPENDIX 2: USER EXPERIENCE RECOMMENDATIONS

How busy David Ross Sports Village is

The centre has a very high membership from both the student population, alumni and members of the public. This can lead to the centre, and most notably the fitness suite, feeling especially busy. In addition, users would like additional class and opening availability. Recommendations were identified which may assist in this, although some will be longer term and require financial investment.

- Develop the plans to expand the sports facility provision at Jubilee campus.
- Install tracking beacons to provide live centre data, thus allowing users to understand how busy spaces are and plan their visit accordingly.
- Continue to review and adapt the programme of classes to best meet the needs of users.

Booking systems and app

The current website feels outdated and is not as user-friendly as it could be. Current technology also impacts the ease of accessing the centre and checking into classes when on-site. Developing and implementing an app would improve user experience and could be used to resolve some of the niggles reported.

- Roll out an app to aid booking of classes, checking into the centre, monitoring for quiet times and communication.