

Board of Management

Finance & Physical Resources Committee

Date of Meeting	Wednesday 23 November 2016
Paper No.	FPRC2-J
Agenda Item	12
Subject of Paper	BRE: Post Occupancy Evaluation Report
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Primary Contact	Janis Carson, Depute Principal
Date of production	14.11.2016
Action	To note

1. Recommendations

- The Committee are asked note the contents of the BRE Post Occupancy Evaluation.

2. Purpose of report

BRE were appointed in February 2016 to undertake Post Occupancy Evaluation (POE) of our Riverside and City campus projects. This is a mandatory condition of grant from SFC and must be conducted independently. This report provides a structured review of the process of delivering a project as well as a review of the operational functionality of the building. It is very much an initial impressions review and will be followed up by two further increasingly detailed review phases.

3. Context

The Evaluation report provides an extensive review of our project documentation and follows up with both building observation and quite extensive perceptions surveys.

Executive Summary (Extract)

The City of Glasgow College is one of Scotland's largest colleges, and accommodates approximately 30,000 students from 135 different countries. The College was formed in 2010 as a result of the merger of:

- Central College Glasgow;
- Glasgow College of Nautical Studies; and
- Glasgow Metropolitan College.

The college has recently benefited from significant capital investment to significantly enhance teaching and learning by creating world leading Campuses at the City and Riverside locations.

The original business case for the capital investment programme highlighted fundamental issues and weaknesses associated with the condition, characteristics, configuration and disposition of the existing educational agenda. Nor did the existing estate match the expectations of students, staff or the commercial and community stakeholders. As a result, the new City of Glasgow College Riverside Campus was officially opened 17th August 2015, and the new City Campus based on Cathedral Street was completed in the latter half of 2016.

BRE was appointed in February 2016 to undertake Post Occupancy Evaluation (POE) of both the City of Glasgow College's Riverside Campus and City Campus projects.

Post Occupancy Evaluation provides a structured review of the process of delivering a project as well as a review of operational functional and strategic performance of the building during operation. This report supports the College in demonstrating its success in meeting the strategic objectives that we are initially identified for the new campus project, as follows:

- Provide an inspiring and flexible world class learning environment that supports the College's vision to "Inspire, Excel and Innovate" **(from the objectives set during DP2a)**.
- Maximise the benefits that can be derived from the new campus investment and obtain value for money from the College's commercial relationship with its NPD partner Glasgow Learning Quarter; and
- Maintain and improve the economic, social and environmental sustainability of the new campus.

BRE has undertaken a number of initial activities as part of the Operation Review, the first stage of POE activity, which included:

- Observational and operational walk-round survey;
- Facilitated occupant feedback workshops, and closed question format questionnaires;
- Internal environmental monitoring;
- Energy consumption benchmarking and analysis;
- Post project review with delivery team.

Initial BRE operational review activities and feedback from user consultation confirm that the building is not only performing well from an operational standpoint, but that it is also providing a healthy, productive investment and delivery against the full business case objectives.

4. Impact and implications

The College can take comfort from the largely positive feedback from this initial review phase. There are also elements within the report which can be fed into our operational practice and performance improvement strategies. It makes interesting reading alongside the further evaluative reportage provided through the Socio, Economic, Academic and Place-making Evaluation and together paint a successful independent positive overview of the successful delivery of this phase of our New Campus development.

BRE Client Report

POE - City of Glasgow College, Riverside Campus Operational Review

Prepared for: City of Glasgow College, Janis MG Carson, Vice Principal

Date: 11 November 2016

Report Reference: Riverside OR Issue: 1.0

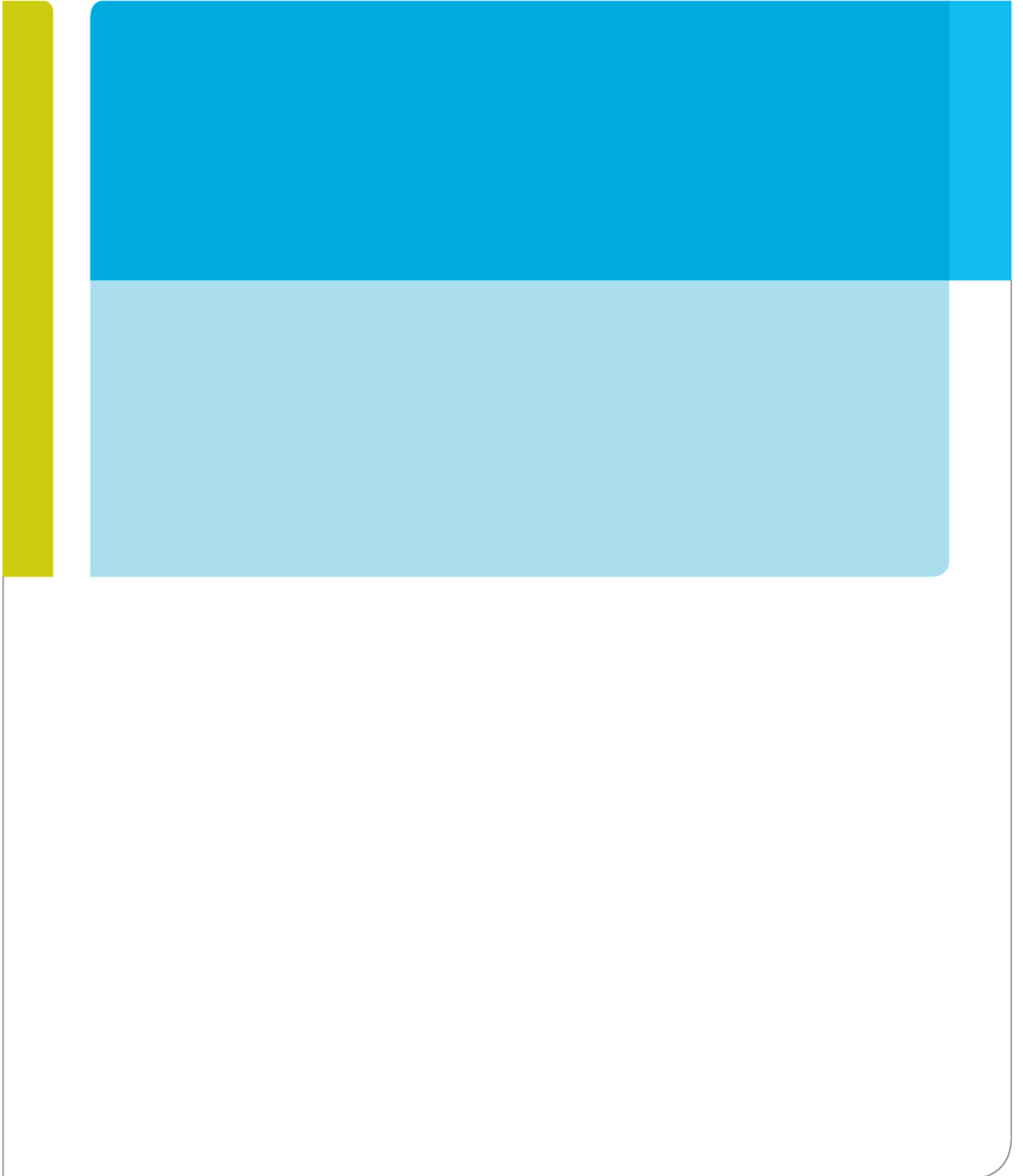
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Date 11 November 2016

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Executive Summary

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Post Occupancy Evaluation provides a structured review of the process of delivering a project as well as a review of the operational, functional and strategic performance of the building during operation. This supports the College in demonstrating its success in meeting the strategic objectives that were initially identified for the new campus project, as follows:

- *Provide an inspiring and flexible world class learning environment that supports the College's vision to 'Inspire, Excel and Innovate';*
- *Maximise the benefits that can be derived from the new campus investment and obtain value for money from the College's commercial relationship with its NPD partner Glasgow Learning Quarter; and*
- *Maintain and improve the economic, social and environmental sustainability of the new campus.*

BRE has undertaken a number of initial activities as part of the Operational Review, the first stage of POE activity, which include:

- Observational and operational walk-round survey
- Facilitated occupant feedback workshops, and closed question format questionnaires
- Internal environment monitoring
- Energy consumption benchmarking and analysis
- Post project review with delivery team

Initial BRE operational review activities and feedback from user consultation confirm that the building is not only performing well from an operational standpoint, but that it is also providing a healthy, productive and happy learning and working environment – already going some way to demonstrating value for investment and delivery against the full business case objectives.



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1 Introduction

BRE was appointed in February 2016 to undertake Post Occupancy Evaluation (POE) of the City of Glasgow College's Riverside Campus and City Campus projects.

City of Glasgow College is one of Scotland's largest colleges, and accommodates approximately 30,000 students from 135 different countries. The College was formed in 2010 as a result of the merger of:

- Central College Glasgow
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The new City of Glasgow College Riverside Campus was officially opened 17th August 2015, and the new City Campus based on Cathedral Street is due to be completed in August 2016.

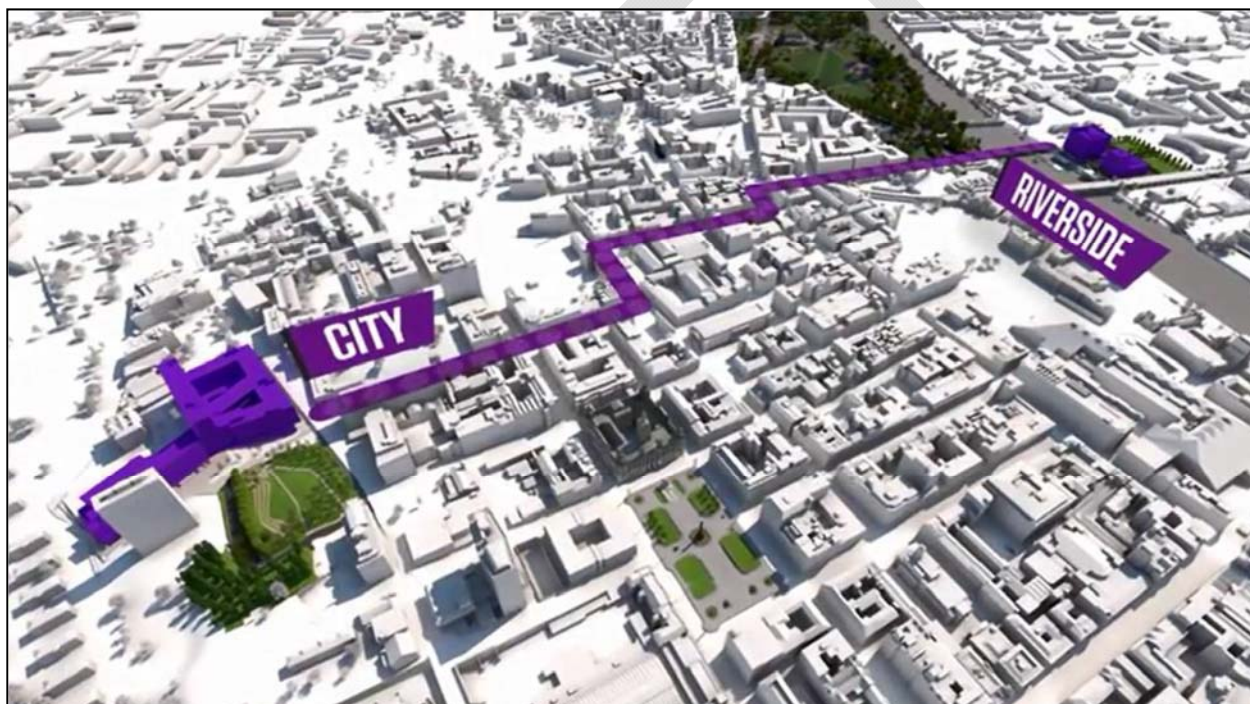


Figure 1 – The new Campuses on a map

As a condition of capital funding requirements from the Scottish Funding Council (SFC), POE must be carried out on all capital projects with a total capital value of £3 million or more. POE provides a structured review of the process of delivering a project as well as a review of the operational, functional and strategic performance of the building during occupation. This is a recognised way of providing feedback on the performance of the project throughout a building's lifecycle, from initial concept through to occupation. The POE outcomes help to validate building performance and identify both areas of good practice and for improvement.

Key lessons are recorded, providing information that is useful in terms of assisting existing occupants realise operational efficiencies and that can also be used to inform future projects and processes. The POE exercise will also enable the City of Glasgow College and SFC to determine if value for investment has been recognised and if the aims and objectives of the business case, as outlined within the capital



case put forward by the College have been met. POE can support the College in demonstrating its success in meeting the strategic objectives that were initially identified for the new campus project, as follows:

- Provide an inspiring and flexible world class learning environment that supports the College's vision to 'Inspire, Excel and Innovate';
- Maximise the benefits that can be derived from the new campus investment and obtain value for money from the College's commercial relationship with its NPD partner Glasgow Learning Quarter; and
- Maintain and improve the economic, social and environmental sustainability of the new campus.

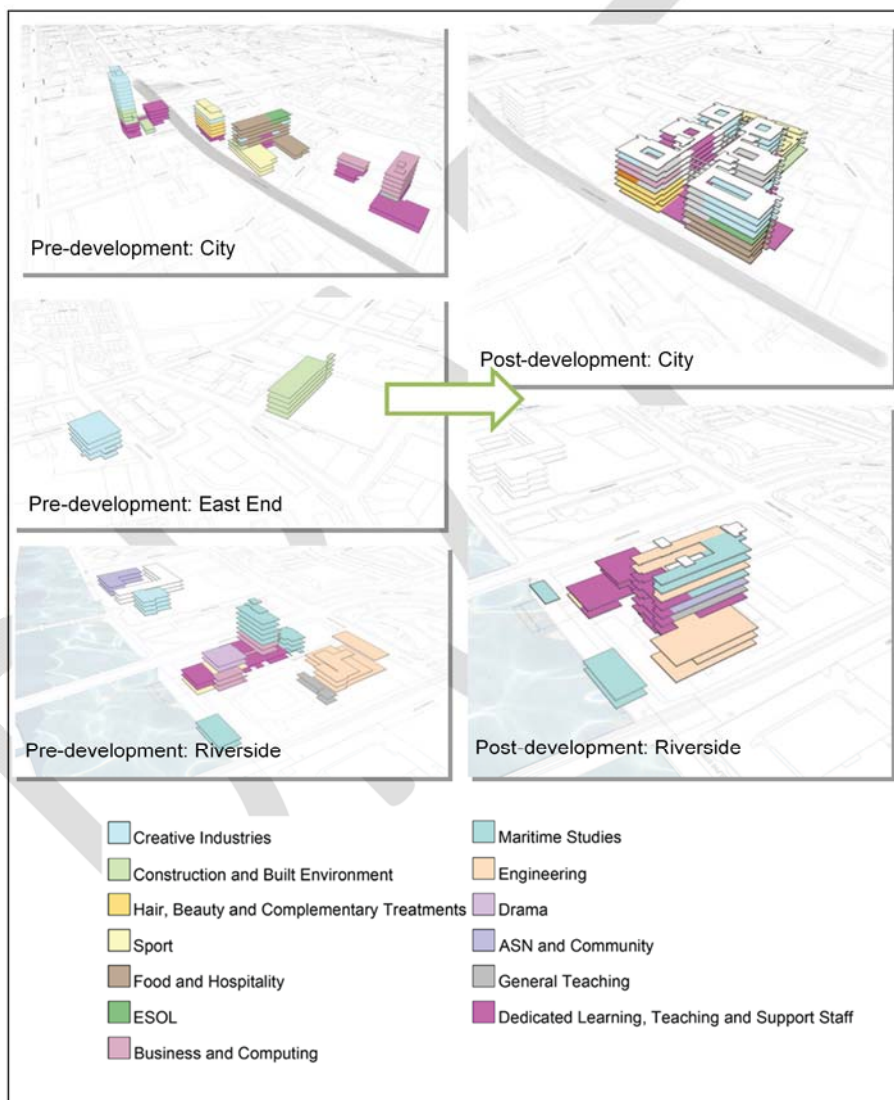


Figure 2 – City of Glasgow College pre and post redevelopment



2 Methodology

POE provides a structured review of the process of delivering a project as well as a review of the operational, functional and strategic performance of the building during operation. As recommended in SFC's POE Guidance, the POE for the City of Glasgow College, Riverside Campus will be delivered over three stages within the following timescales, where practical and possible.

POE Stage	Timescale for Delivery Post-Handover
Operational Review	3 - 6 Months
Functional Performance Review	12 – 18 Months
Strategic Review	3 – 5 Years

Table 1 – POE timescales

Please note that this methodology will be adopted on both Campuses, ensuring consistency and therefore allowing comparisons to be made where appropriate. POE evaluation of the City Campus will commence later in 2016.

For City of Glasgow College POE will be delivered in the following stages:

- Operational Review (OR)
 - Stage 1: Initial understanding
 - Initial occupant engagement
 - Initial operational walk-round survey
 - Initial internal environment monitoring
 - Stage 2: Detailed discussion and feedback
 - Project review
 - Stage 3: Reporting
- Functional Performance Review (FPR)
 - Stage 1: Operational performance comparison
 - Stage 2: Functional performance
 - Occupant consultation
 - Function performance audit
 - Stage 3: Review against Full Business Case and reporting
- Strategic Review (SR)
 - Stage 1: Reviewing current performance against OR and FPR results and wider social and community impact
 - Stage 2: Reporting

This is the OR report for Riverside Campus, which is the first stage of the POE delivery and focuses on:

- Initial operational walk-round survey
- Initial internal environment monitoring
- Occupant consultation



- Review against Full Business Case and reporting

The adopted methodology for the OR delivery is summarised in the following sections.

Initial occupant engagement

Initial occupant engagement is part of the Operational Review (OR) – the first delivery stage in the POE process. The OR aims to look back over the project process from inception to initial occupation of the building, providing feedback on the effectiveness of this process and an initial overview of performance. Key to reviewing the operational and technical performance of the building is establishing an immediate understanding of the building, and identifying any significant issues that restrict the operation or occupant satisfaction. To establish an initial understanding, a review of Full Business Case (FBC) documents was undertaken and a 'Kick-off' meeting was scheduled with the Project Sponsor and Estates Staff to discuss the project delivery and handover and identify any areas within the building that the College would like the POE activity to specifically focus on.

Initial operational walk-round survey and occupant consultation

An initial building walk-round with a member of the Estates Team was arranged to help gather information that would support the evaluation of the technical and functional performance of the Campus. BRE deployed relevant energy, sustainability and construction staff to undertake an observational walk-round survey of the building. This included;

- Building layout and functionality considering:
 - Movement of occupants, zoning/layout of departments and provision of facilities
- Fabric and finishing materials review considering:
 - Type and quality of material and robustness and longevity of finish
- Plant and renewable technology review to include:
 - Access and location review and initial operational inspection
- Building services and systems including:
 - Provision and zoning of service, accessibility for operation and maintenance and operational inspection
- Operational controls and patterns considering:
 - Provision of local and central control for occupants and building
- Space provision and utilisation considering:
 - Effective use and management of space and any accessibility or inclusivity considerations.

In addition to the walk-round survey, BRE also arranged occupant consultation sessions to gather additional information in relation to the operational building performance and the overall functional performance. A number of staff and students, representing different work areas and courses, were invited to attend an occupant focus group session and provide feedback via a structured questionnaire and facilitated discussion session to provide valuable information in relation to user experience.

Initial internal environment monitoring

During the initial walk-round surveys, suitable occupied areas were selected and scientific measuring and monitoring equipment was installed in a variety of occupied areas across the Campus to allow information to be gathered over a period of time which would allow the internal environmental conditions to be closely monitored. The chosen areas have different functions (classroom, office, library) are utilised in a variety of ways and are located in different parts of building (e.g. different floor plates and elevations). The monitored parameters include;

- Temperature
- Relative humidity
- Air quality



Within this report guidance is provided in relation to the recommended optimum comfort levels for internal environmental conditions for each of the above aspects. The initial monitoring results for the Riverside Campus were analysed and compared against recommended comfort levels in order to help establish environmental performance patterns and to also highlight any areas of concern that may require further monitoring.

Review against Full Business Case and reporting

A review of the College's Full Business Case was undertaken in order to identify key drivers, aims and objectives for this project and to determine the level of success achieved in delivering against the identified objectives and key performance indicators.

Throughout the OR delivery, the FBC objectives were revisited, the project implementation strategy was considered and the associated impact on teaching and working practices was examined. An in-depth FBC review will form part of the functional performance and strategic reviews, which aim to identify the resulting longer-term benefits and wider impacts of the Riverside Campus, and highlights areas of success as well as those for improvement, as well as lessons learned that can be used to inform future projects.

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3 Description of the project

3.1 Project background



Figure 3 – College view from the river

Project data and costs	
Start on site	June 2013
Completion	August 2015
Gross internal floor area	21,403 m ² (teaching facilities 15,646m ² , hall of residence 5,757m ²)
Form of contract	Bespoke NPD with hall of residence on a Design and Build basis
Total project cost	£66 million
Architects	Reiach and Hall Architects and Michael Laird Architects
Client	City of Glasgow College
Structural engineer	Arup
M&E consultant	FES with Hulley & Kirkwood
Quantity surveyor	SRM/Sweett Group
Acoustics	Arup Acoustics
Fire engineer	Jeremy Gardner Associates
Landscape architect	Rankinfraser Landscape Architecture
Interiors	Graven
Signage	Studio LR
CDM co-ordinator	Kirk & Marsh
Main contractor	Sir Robert McAlpine
Cad software used	Revit, AutoCAD, MicroStation
Annual CO₂ emissions	15.36kg/m ² for the teaching block and workshop combined
Substructure	£125.05/m ²
Superstructure	£567.13/m ²
Internal finishes	£213.42/m ²
Fittings and furnishings	£132.24/m ²
Services	£752.52/m ²

Situated on the banks of the River Clyde the City of Glasgow College Riverside Campus was completed in August 2015. Together with City Campus it represents a multi-million investment in tertiary education providing world class facilities for Glasgow, Scotland and the international community.

This multi-award winning building is considered to be the most modern and most technologically advanced maritime campus in the world. It is home to over 3,000 Marine and Engineering students and offers a 198-bed student accommodation which sits alongside the main college building. The accommodation provides a safe, secure, clean and welcoming environment for all students who stay there.

The key facilities of the Campus include:

- The first 360-degree Shipping Simulation Suite in Scotland



- The first women-only engineering and construction classes in Scotland
- Marine Skills Centre with its own jetty, rescue lifeboats and a free fall lifeboat
- State-of-the-art Nautical Chart Rooms
- One of few STEM Centre's of Excellence in Scotland
- One of only four UK colleges recognised to deliver Merchant Navy Officer training to Chief Engineer and Master Mariner level
- One of the most modern working ships engine rooms in the UK

3.2 Mission and values

The mission of the College is *“to deliver world class learning for individuals and enterprises, for Glasgow, Scotland, and the International community”* with the following vision:

“As a world class institution of the future, we seek to redefine the learners' experience of a college education. Our staff, clustered in Schools of national expertise, will pioneer new ways of learning, with seamless learning support opportunities.

Our curriculum and international partnership sharing will encourage individual learners to flourish, amidst an inclusive and diverse learning community.

Our vision is to be a positive catalyst for change via our centres of excellence, and, in partnership with other civic institutions, to regenerate and renew Glasgow City Centre and the riverside”.

City of Glasgow College has established the key values of:

- The individual.
- Equality, diversity and inclusiveness.
- Integrity, honesty and transparency.
- Excellence and achievement.
- Partnership.
- Innovation and enterprise.



4 Review of Full Business Case and Project Delivery Approach

4.1 Business Case summary

The need for a new estate for the city centre Colleges was identified in a report prepared by Atkins in 2000. This was followed up in December 2006 when a full business case was submitted to SFC recommending rationalisation of what were then four colleges over 11 separate sites into a twin site campus with new buildings at Cathedral Street and at the former Glasgow College of Nautical Studies.

The original case highlighted fundamental issues and weaknesses associated with the condition, characteristics, configuration and disposition of the existing estate. None of these were conducive to the effective and efficient delivery of a 21st century skills and educational agenda. Nor did the existing estate match the expectations of students, staff or the commercial and community stakeholders.

With the organisational imperative of the newly merged City of Glasgow College and the ongoing deterioration of the existing estate during the intervening period, the original logic of the first business case was reinforced by circumstances at the time.

A review of the existing estate in December 2010 based on surveys carried out over the last ten years showed:

- A £100 million cost to reach basic building fabric and servicing standards.
- A shortage of large spaces and surplus of small spaces presenting a misfit with an effective operational brief.
- A fragmented, disparate estate with too many sites, listed buildings and floorplates fundamentally prejudicing the opportunities to consolidate, integrate and collaborate.
- Very limited opportunities to improve utilisation, achieve flexibility and to promote innovation.

City of Glasgow College is the largest college in Scotland delivering over 2600 courses for 40,000 students, including 40% from Glasgow's most deprived areas. The new estate aimed to allow the College to realise its educational vision and provide its learning community with fit for purpose facilities as previously enjoyed by all five of Glasgow's Community Colleges. The investment aimed to deliver significant educational benefits, improve efficiency and effectiveness and create a sustainable estate that evidences the Scottish Government's commitment to education, regeneration and carbon reduction.

The new campus supports a wide range of priorities and policies for the Scottish Government, the Scottish Funding Council and Glasgow City Council, including:

- The Scottish Government's priority for *“Colleges as highly effective, world-class organisations; with high-quality buildings, facilities and equipment contributing to enhancing the experience for learners.”*
- In Skills for Scotland: Accelerating the Recovery (Oct 2010) the Scottish Government highlights the role of Scotland's colleges: *“Scotland's economic geography will change over the next decade. As businesses seek to take advantage of new economic opportunities, colleges will play a fundamental role in developing the skills and expertise that will be required to exploit them”*
- The Scottish Funding Council's priority for Colleges to look at *“collaboration and co-location in order to ensure an effective and efficient solution... to provide the most effective learning environment for the 21st century.”*
- Delivery of the Scottish Funding Council's five strategic themes:



- Governance and leadership
- Quality and enhancement
- Global engagement
- Sustainable development
- Equality and diversity

The new campus supports delivery of key benefits that support the College's strategic objectives:

- Delivering the Curriculum for Glasgow
- Facilitating new learning styles
- Providing stimulating and relevant workspaces equipped to industry standard
- Reducing property and utility costs and achieving the lowest whole life cost
- Improving public realm and playing a key role in regenerating local communities
- Reducing CO₂ emissions and energy requirements

The overall scale of the accommodation requirement was driven by SFC's consultation on the Curriculum for Glasgow dating back to November 2009, reconfirmed in March 2010 and again in February and April 2011.

The new estate was to accommodate 210,000 WSUMs of SFC-funded curriculum activity. The curriculum mix is consistent with the current portfolio of CGC plus planned additional activity in key areas identified in the Curriculum for Glasgow review. A further 20,661 EWSUMs commercial activity is also to be accommodated. (EWSUMs stands for Equivalent Weighted Student Units of Measurement – used to measure non - SFC funded commercial activity).

The new estate aimed to consolidate and complete the process of integration and curriculum realignment which was followed the creation of the City of Glasgow College.

It provides a further catalyst for innovation and for the development of sectoral best practice in specialist areas which are central to Glasgow's economic recovery.

The educational rationale for the new estate was well established and took cognisance of recent research and reportage linking successful student experience outcome with positive learning environments combined with responsive and engaging pedagogical approaches. The Project was fundamentally driven by the need to realise educational benefits and would build on the outcomes and recommendations of reports such as the SFC commissioned 'Spaces for Learning', Learning Landscapes in Higher Education (2010), the GEMS Report and inspiration from the educational experiences of other European education systems.

CGC Schools	WSUMs
Construction & Built Environment	18,643
Art & Design	18,292
Creative Industries	15,070
Community, Care & Social Sciences	11,718
Business & Enterprise	24,122
Computing	19,464
Engineering, Energy and Applied Science	34,607
Nautical Studies	12,365
Food, Hospitality & Tourism	21,675
Sport	10,869
Languages & ESOL	11,135
Hair & Beauty	12,040
Total Activity	210,000

Table 2 – Weighted Student Units of Measurement per school

The curriculum was to be delivered through CGC's schools of national expertise as shown in the table above with associated distribution of WSUM activity. (WSUM - Weighted Student Units of Measurement)



This CGC curriculum strongly reflects and responds to the Scottish Government's identification of Scotland's seven key sectors "which have the potential to drive sustainable growth in the long-term through their exploitation of Scotland's key assets":

1. **Tourism** – tourist expenditure of £4billion in 2008.
2. **Creative Industries** – supports over 60,000 jobs, and worth £5.2 billion annually.
3. **Energy** – the Climate Change Delivery Plan and Renewables Action Plan, 2009 drive activity in CO₂ emissions reduction and renewable energy production.
4. **Financial and Business Services** – The finance services industry accounts for around 8% of Scotland's GDP.
5. **Food and Drink** – a recently refreshed strategy provides direction for growth from £10 billion to £12.5 billion by 2017.
6. **Life Sciences** – contributes £1.3 billion to the economy.
7. **Universities** – the Joint Future Thinking taskforce recognised Universities as Scotland's 7th Key sector with the Government investing over £1 billion annually.

City of Glasgow College was already contributing to the majority of these priority areas and in realising a new estate can realistically anticipate playing a yet more significant role in supporting the future prosperity of the region.

4.2 Sustainability strategy and achieved results

The City of Glasgow College aimed to adopt a best practice approach to the planning, design and development of the new campus – addressing a number of important environmental, economic and social aspects, aiming to showcase an exemplar approach to sustainable development.

4.2.1 Environmental Strategy

1. **Reducing demand (passive features)** - An integrated approach by the building design team looked to create a building form, massing, disposition and fabric that minimises energy demand. Features include fabric U-Values that exceed minimum technical standards, enhanced glazing specification (optimises light transmittance and controls solar gain) and ambitious air tightness (to avoid energy losses)
2. **Efficient Design (active features)** – the building design incorporates leading edge technology that maximises efficiency and optimises Low and Zero Carbon technologies, including biodiesel CHP and solar. The brief demanded zero token features ('eco-bling').
3. **Monitoring, Targeting and Efficient Operation** – Comprehensive commissioning and training strategies, advanced building energy management systems (BEMS), sub-metering and automatic controls are complemented by strong monitoring, reporting and management processes. Together these can help to ensure the buildings actual energy consumption matches or improves design parameters.

Results:

- ✓ BREEAM Excellent rating (all buildings including Halls of Residence)
- ✓ Energy Performance Certificate (EPC) A rating
- ✓ Energy consumption and CO₂ emissions reduced by over 50%
- ✓ Rainwater harvesting, supporting reduced mains water use
- ✓ Outstanding quality environment – excellent lighting and air quality
- ✓ Excellent cyclist facilities, reducing transport emissions



4.2.2 Economic Strategy

The building design and underpinning operating strategies aim to minimise property ownership and operating costs, key efficiencies the City of Glasgow College should realise from:

- Reduced energy costs
- Reduced building area (achieved from higher utilisation, flexibility strategies and design efficiency) lowers cleaning costs
- Efficient design and zoning strategy permits partial opening and reduces security costs
- Design quality creates opportunities for generating additional income from catering and non-educational uses
- The NPD procurement strategy provides cost certainty over building maintenance costs over the next 25 years and transfers lifecycle cost risks to the College's private sector partner

4.2.3 Social Strategy

The planning and development of the new campus has involved one of the largest consultation exercises undertaken in connection with a property development in Scotland.

City of Glasgow College adopted a detailed consultation strategy that ensured communities were consulted from the earliest project delivery stages and that liaison continued during the construction phase to help mitigate and minimise inconvenience caused by the site works.

As a result of this in-depth process the new campus design is hoped to deliver significant benefits to the College's stakeholders, these include:

- ✓ Enhanced public realm – the creation of significant soft and hard landscaped areas that are publicly accessible
- ✓ Accessible facilities within the buildings including cafes, a student operated restaurant, shops and health and beauty services
- ✓ Improved site connections and permeability – the quality of paths through the sites are enhanced to create more logical, safer and pleasant routes connecting the City centre and residential communities

5 Initial operational walk-round survey

In April 2016 BRE visited the newly completed Riverside Campus to undertake an initial walk round survey of the Campus to gain a general understanding about the operational building. This involved collecting information about a variety of spaces, including for any controls available to the estates team and building users and an overview of building services serving the Campus. This initial site visit focussed upon:

- A building tour focusing on a variety of spaces available to building users;
- An overview of energy and lighting monitoring and controls; and
- Installation of internal environment monitors in the most appropriate areas to compare the environment already monitored throughout the college building.

5.1 The Spaces and Facilities

The Riverside Campus is home to the world-leading Maritime College including marine engineering and science, technology, engineering and mathematics. The College specialises in learning, teaching and research into renewable technologies including industry-leading test facilities on a wide range of renewable energy solutions.

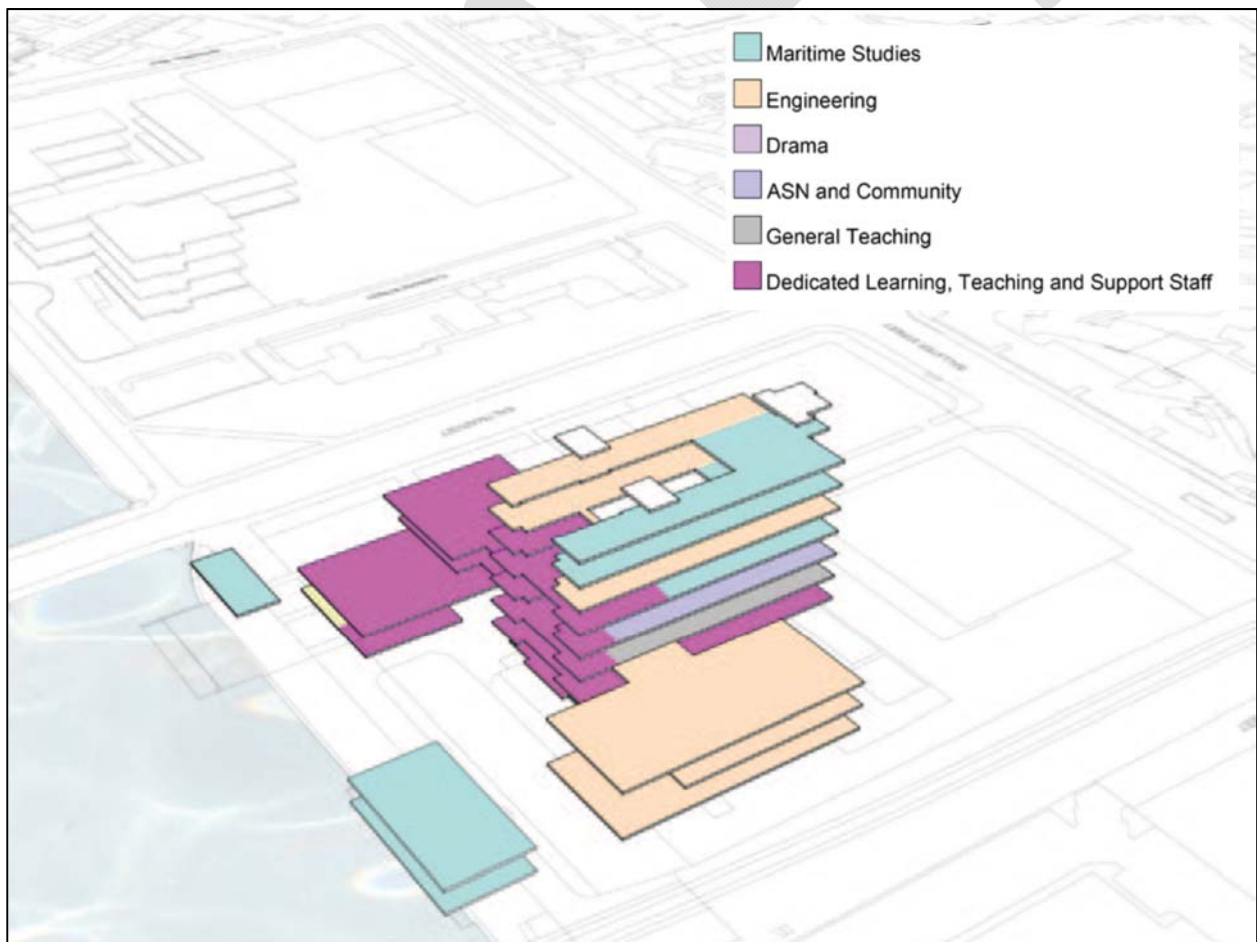


Figure 4 – Agreement of spaces in Riverside Campus



The buildings on site are organised around two new civic spaces – a cloistered garden and a grand hall. These are welcoming social spaces aiming to encourage students to mix and realise opportunities for blended learning across disciplines. They act as the community heart of the buildings. The design is open and simple, and projects the College brand to the city as an open and welcoming institution. Three buildings are clustered and organised around a garden at the edge of the Clyde and all the rooms are given either direct or oblique aspects to the river and the city to the North.

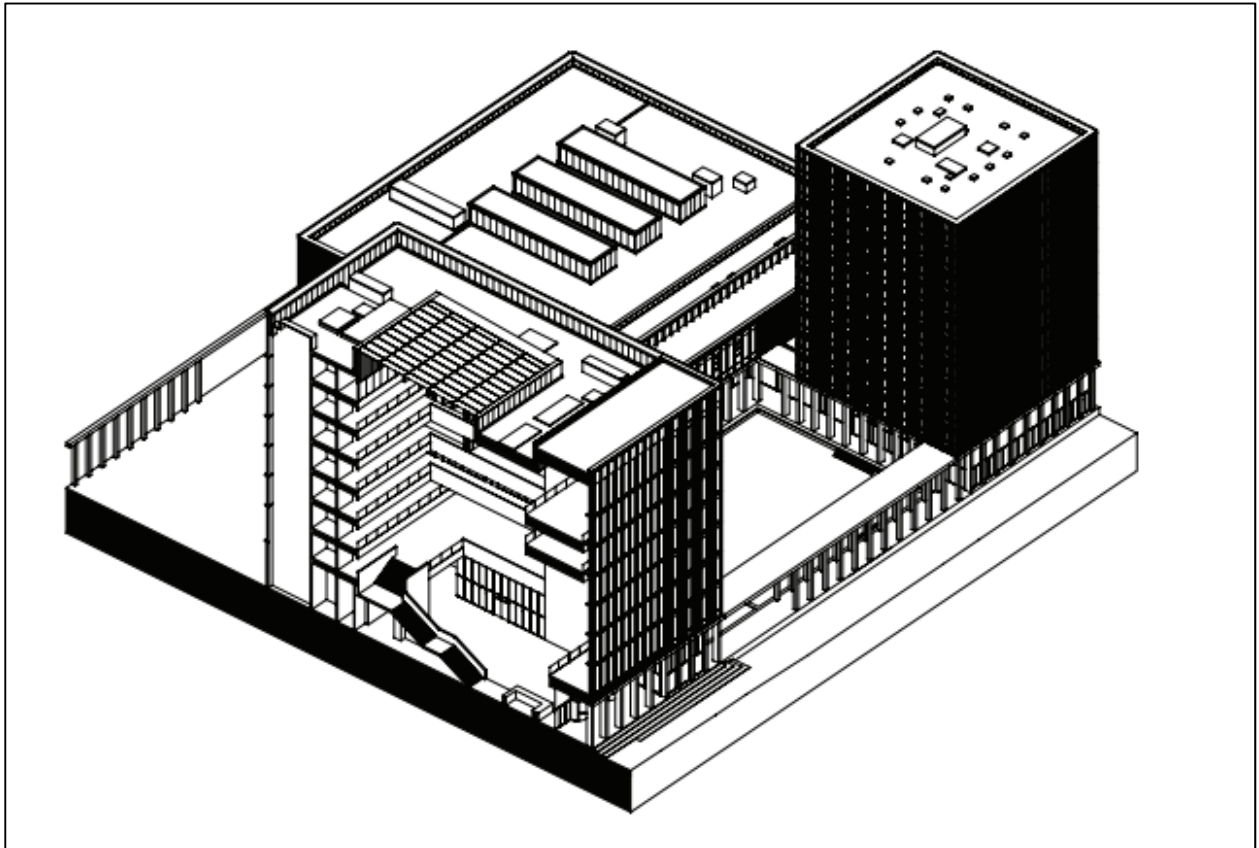


Figure 5 – Buildings on site: Grand hall (8 floors), Workshop (double height space) and student accommodation with a cloister garden amongst them.

Internally the accommodation is purposely arranged around a central atrium space to help make create a simple and intuitive layout. All teaching spaces are accessed through this sizable, flexible and adaptable space. Many internal and external rooms have dramatic views across the city and visually engage with the City Campus on Cathedral Street at the top of the city's skyline. The atrium space was placed at the heart of the key design principle, to encourage cross discipline study and blended learning. The completed buildings were deliberately formed by the project delivery team from a community of rooms and places that are all geared towards enhancing the opportunities for teaching and learning. The careful arrangement of spaces means that students and staff need to pass through areas of study that are not their own, encouraging different disciplines to engage and interact. The entire building was purposely designed as a learning landscape – from the deliberate way the buildings confidently relate and connect to the city, through street and park, through the unfolding and connected 'learning ribbon' of internal circulation and spaces that flow from street to roof, to detailed aspects of finishes and furniture.

5.2 Facilities

Specialist facilities include a working ships engine, cross-discipline project bases to encourage blended learning, an innovative multi-discipline engineering hall, a ships bridge simulation suite - alongside



generic teaching, learning and support spaces. The buildings blend together innovative strategies with industry leading incorporation of on-site renewables. The buildings are largely naturally ventilated, with the atrium acting as a natural stack helping to drive ventilation crossflows through the buildings. Manually openable windows are supplemented with automatic actuators ensuring temperature and air quality is maintained at high levels of comfort. Bespoke acoustic attenuators are included to ensure acoustic privacy between rooms and the atrium. Supporting all of these passive approaches is a comprehensive suite of onsite energy generation. The project delivery team ensured that the building incorporated a range of low carbon and energy generation measures including: exposed thermal mass to reduce cooling loads, natural ventilation, night purging to remove heat from the structure, modelling of external facades for solar shading, on-site energy generation with solar thermal panels and solar photovoltaic panels, bio-oil boilers (suitable for clean air city centres) and intelligent lighting systems.



Figure 6 - Workshop and a simulation room



5.3 Utilities

A requirement of the College's Sustainability Strategy was to ensure the building achieved a highly efficient design and operation of its 'active' features. The building design incorporates leading edge technology that aims to maximise efficiency and integrate Low and Zero Carbon energy supply, including biodiesel CHP and solar. Utilities at the Campus are managed by an on-site contractor – FES, who are contracted by the College to provide rapid response support to building users of the Campus and generate monthly reports for the estates team. BRE was provided with a sample copy of one of these reports which summarised findings for the Campus utility consumption profiles during May 2016. The report is included in Appendix B.



Figure 7 – PV panels located on workshop roof

FES report to the College on electricity, thermal and water consumption as total consumptions per whole site (three blocks). Separate meter readings for teaching block and workshop should be reported on by BRE in later stages of the POE project. Table 3 summarises the reported total utility consumptions that have been recorded by FES for the May 2016 period.

Riverside Campus	May 2016
Electricity	180,198 kWh
Gas	161,581 kWh
Water	1,081 m ³

Table 3 – Riverside Utility Consumption in May 2016



During the POE project BRE will collect yearly electricity, gas and water consumption data and will compare these figures against relevant benchmarks to establish whether the Campus operates efficiently and identify opportunities for improvement. Additionally, a detailed consumption analysis listing all sub-meters across the buildings, teaching block and workshop, will be carried out. This will highlight areas of good practice and will also enable BRE to provide recommendations where there are opportunities to optimise efficiency through targeted consumption reduction strategies.



Figure 8 – The plantroom (R.01.042)

5.3.1 Electricity

Electricity is generated onsite by a Combined Heat & Power (CHP) unit that works alongside a solar Photovoltaic (PV) array. The majority of electricity is supplied via the main electricity grid supply.

FES reports the College’s electricity consumption at building / block level; Teaching Block (TB) – essential and non-essential supply, Halls of Residence (HoR) - essential and non-essential supply and Workshops. BRE will not report on performance of Halls of Residence as it is out with the scope of this POE programme.

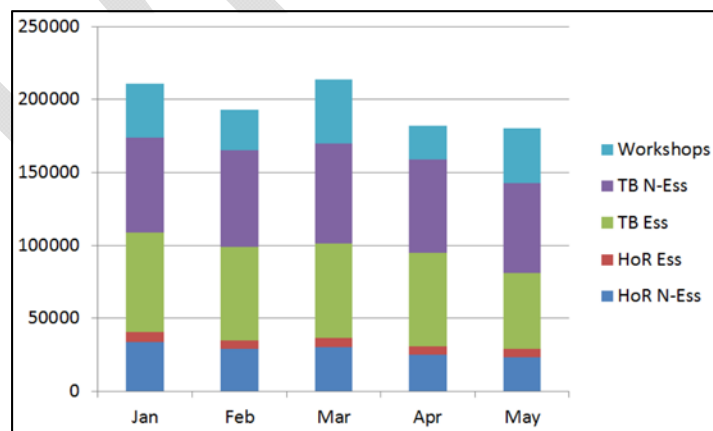


Figure 9 – Profile of monthly Electricity consumption by supply (kWh)



It was noted by FES that Riverside Campus consumed less electricity in May 2016 than in April 2016 due to the reduction in the Riverside Campus coms room equipment. However, the consumption from the coms room was still considered to be high. Also, the variable baseload of non-essential supplies suggested that opportunities existed to reduce consumption and that this would be investigated further. BRE will review future utility reports and consumption readings during the later stages of this POE project.

5.3.2 Thermal

FES also report on thermal energy consumption, following the demands of heating degree days, so that a statistical picture can be built of demand, and unnecessary usage can be identified and targeted reduction strategies can be put in place for future periods. During May 2016 the gas consumption levels were less than the College had expected from observed performance. Ongoing variability between actual consumption and demands of heating degree days is examined for opportunities to reduce consumption. While FES collate the necessary readings, they liaise with the control specialists to ensure that the heating is running as per commissioning requirements and service standards.

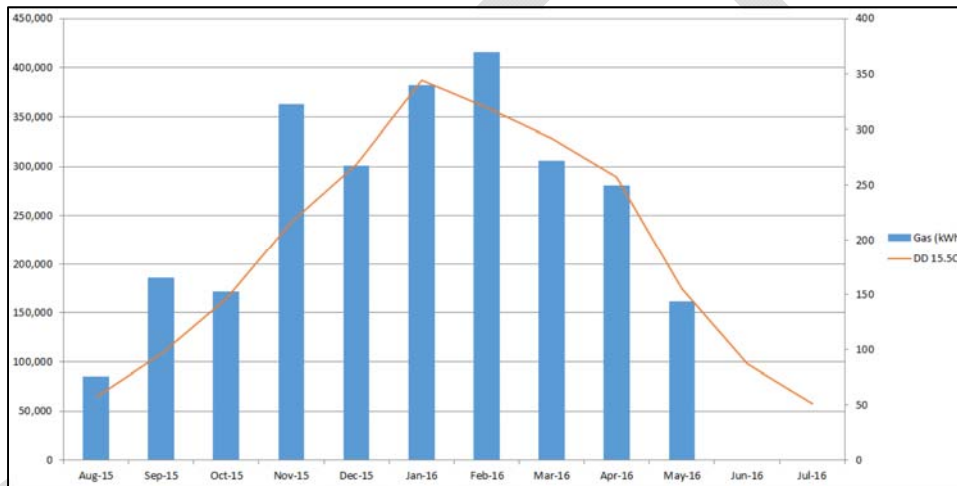


Figure 10 – Profile of monthly Gas consumption vs demands of heating degree days

5.3.3 Water

Water is consumed within the building for toilet flushing, wash hand basins, catering needs and providing occupants with a fresh water drinking supply. Figure 11 profiles the monthly water rates recorded by the College during May 2016 period. This will be monitored and reported in more detail within the FPR report.

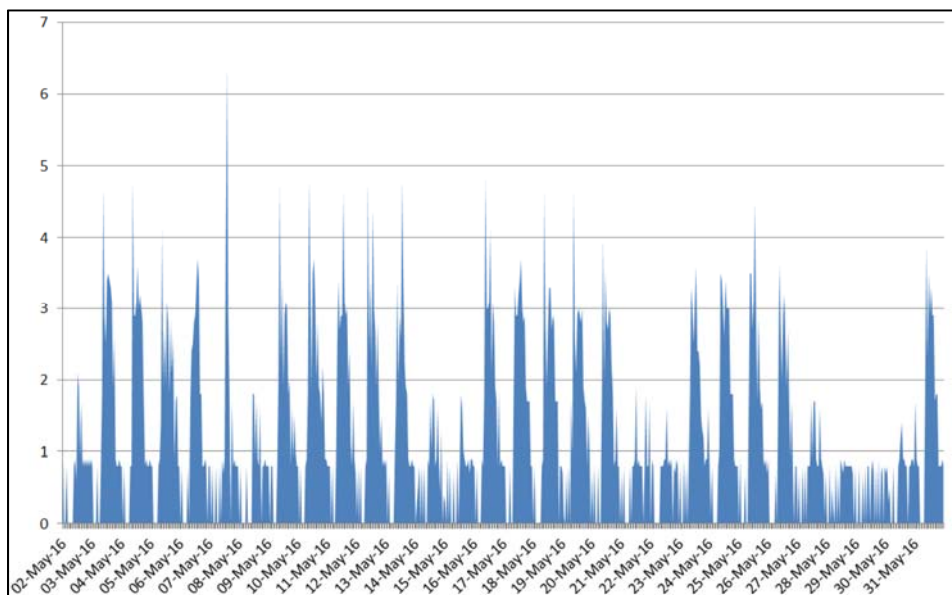


Figure 11 - Profile of Hourly Water consumption in May 2016

The hourly profile for water consumption confirms that the majority of water is consumed during normal operational hours as expected. Variations in use will be monitored and compared with building activity and out of use periods over a longer period to help identify if there is any opportunity to further reduce water consumption below current levels.

FES reported that the highest water consuming areas are the teaching and workshops areas and historic data reveals variable and possibly unnecessary night-time consumption. Further investigations are ongoing to help identify the reasons / sources of the water consumption baseload that has created irregular night-time water consumption. A review of leak detection systems and any notable variation in pressure differences during these periods would be advised.

5.3.4 Monitoring, controls and information available

The Campus incorporates a range of automated technologies which have been designed to enable accurate data collection and to provide some opportunity to change or adjust settings wirelessly, e.g. lighting control, instant alerts when building services malfunction and various displays for building users. Some examples of those technologies, include;

- Online Building Energy Management System by Siemens, read only mode
- Automated Meter Readings (AMR) system
- Lighting control system – lux levels, sensor timers can be changed by the estates team
- Automated windows are triggered by high temperatures or high concentration of CO₂
- Interactive floor plans at the foyer illustrate functionality and location of all spaces for both campuses of City of Glasgow College
- Internal environment displays show temperature and air quality (indicated as 'good', etc.)
- Building users can manually change internal temperatures in occupied teaching and staff rooms by 2 degrees (up or down)
- For security reasons all internal doors leading to classrooms and offices lock automatically after 6pm and can be unlocked using smart cards

In order to help users interact with and get the most from their building, occupants have been invited to attend various training and induction sessions regarding the use of temperature controls, use of



projectors, operation of security doors, etc. Additionally, various guidance is available for building users on College intranet.

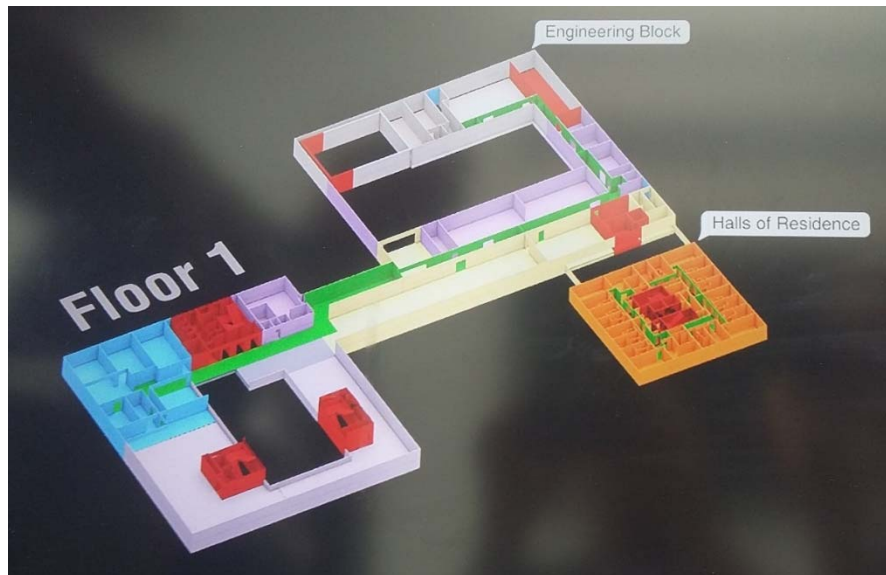


Figure 12 – A view from the interactive screen, located in the atrium, showing features of City of Glasgow College buildings

6 Initial occupant consultation

6.1 Methodology

Occupant consultation is a vital and important aspect of POE as it provides direct feedback from building users and helps to determine if the building is fit for purpose and satisfying end user needs. The content of this section has been derived from consultation workshops held with students and staff at City of Glasgow College, Riverside Campus on 16 June 2016.

The purpose of the occupant consultation workshops was to gain initial feedback from users to help evaluate how well a small sample of building users perceived the completed building to have been designed and constructed and to identify to what extent these users believed the building was able to meet their needs. A questionnaire containing short, non-technical statements looking at the functionality, build quality and impact of a building was provided to all attendees. The 11 workshop attendees represented various staff and students groups from teaching and support areas and also from across a range of curriculums.

The group were encouraged to discuss each of the following topics to assess the user's perception of the building:

- Functionality looking at the way the building is designed to be useful
- Build Quality looking at the materials and the different systems and conditions inside the building
- Impact referring to a building's effects on the local community and environment

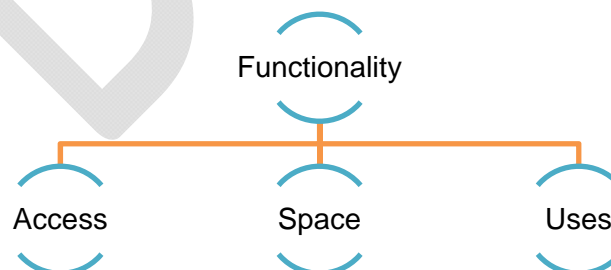
The groups were introduced to each of the topics and asked to discuss their experience and feelings.

6.2 Occupant responses

The following sections include graphical representations of occupant's responses to the questionnaire along with summaries of discussions and any additional written responses provided by the attendees. Appendix C details all of the attendees written responses.

6.2.1 Functionality

Functionality is concerned with the arrangement, quantity and interrelationship of spaces and how the building is designed to be useful. This topic covers 3 areas: access, space and uses.



6.2.1.1 Access

Access is concerned with how easy it is for all people to get to, and around the building. The statements regarding Access, included in the questionnaire, are listed below.



- The building provides good access for everyone
- The layout and landscape around the building provides safe and convenient access for pedestrians
- There is good access to public transport
- The building caters for cyclists
- There is sufficient car parking (it was noted that this project development stage is not yet complete and therefore is likely to have a negative influence on responses)
- There is safe access and secure storage for goods and waste
- It's easy to find your way round the building
- The building layout is easily understood
- The signage is clear
- The building is accessible to users and visitors with disabilities
- The building caters for the need of people with impaired sight
- The building caters for the needs of those people with impaired hearing

The graphs below illustrate a summary of responses regarding Access.

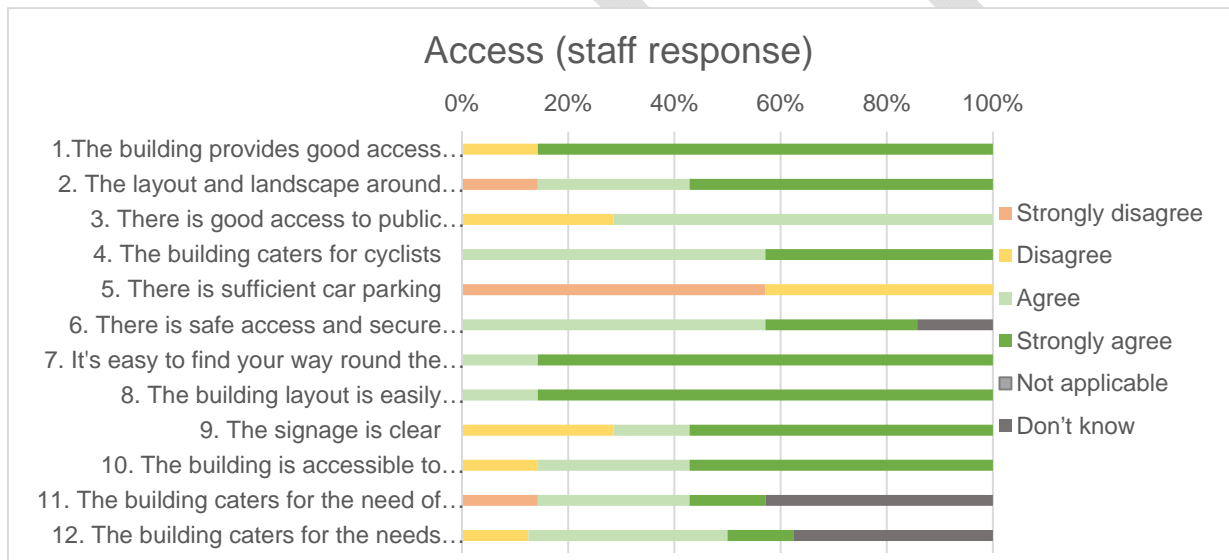


Figure 13 – A summary of staff response regarding Access

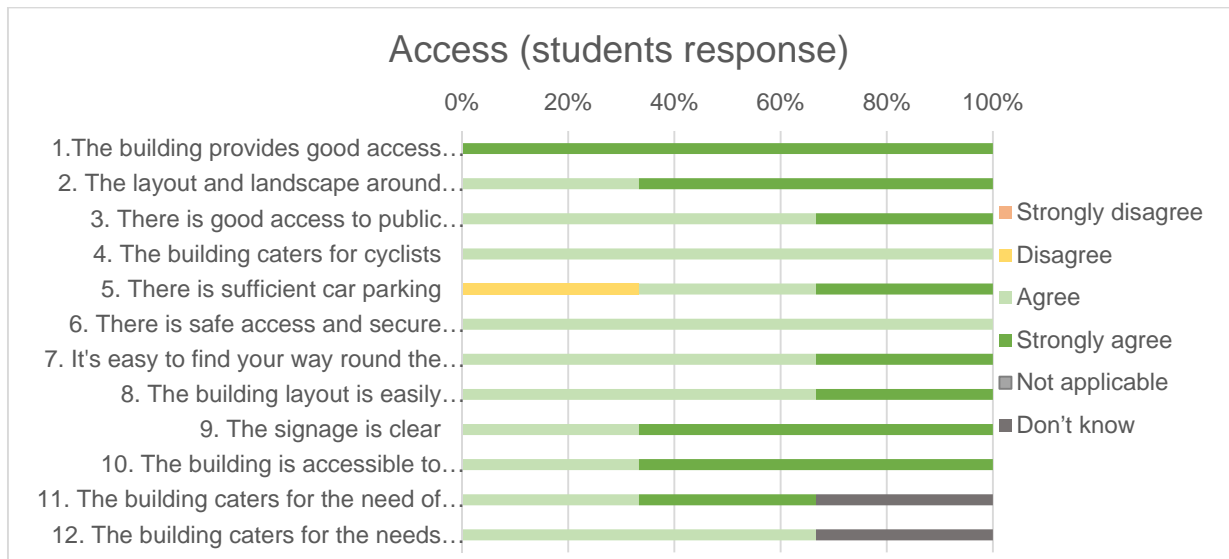


Figure 14 – A summary of students' response regarding Access

The graphs illustrate that the majority of responses relating to access to and within the College building were very positive. Generally, respondents commented that they felt the building is very accessible and easy to navigate around. During workshop discussion sessions, all staff and students agreed that the building layout is easily understood and that they found it is easy to find their way around the building, with all spaces being deliberately arranged around the central, open and bright atrium.

The majority of occupants agreed that they find the signage in the building to be very clear and consistent and that there is a good level of signage throughout the building. It was also reported that having each of the individual floors marked with a different symbol (themed to reflect course curriculum) made it easy for occupants to make their way to their desired location. However, some occupants did raise a concern that some parts of the building could possibly create invisible obstacles for visually impaired people. The glass balustrade beside the canteen on the 7th floor was given as an example. A staff member suggested that some colour or pattern could be added to the glass surface to make it more clearly visible to all users. No other concerns were raised by users in terms of access for disabled visitors or people with impaired hearing. Some of the 'don't' know' answers that were given by occupants in response to the questions raised in the questionnaire and during workshop session suggested that some building users are simply not aware of any challenges which disabled or impaired users might face. However, during the discussions session occupants did all agree that they felt access and inclusivity had greatly improved overall when compared with previous building. Users did suggest that the College could benefit from arranging for the new Campus to undergo an audit to allow a range of users with different disabilities to help fully evaluate whether the building fully meets the needs of all or if any further enhancements could be made.

Although a lack of car parking provision was reported as a concern for some members of staff, it was discussed that limited car parking provision is becoming a common planning requirement and is largely dictated by Local Authority planning requirements. The user group did acknowledge that by restricting private car parking provision, other forms of transport can be more widely encouraged such as the use of well served public transport network and the dedicated cycle and walking routes, which in turn help to reduce congestion and carbon emissions and the College's environmental footprint overall. Occupants also commented that enhanced cycle storage and changing facilities incentivised building users to



consider adopting this form of transport when the weather permits. Students reported that they are very satisfied with the number and frequency of public transport services running from or close to the College to different parts of the City and the City Campus. A member of staff did comment that they felt private taxi hire companies could benefit from further guidance and information sharing in relation to scheduled pick-up and drop-offs for the newly constructed Campus and that perhaps a more convenient location would be on Florence Street.

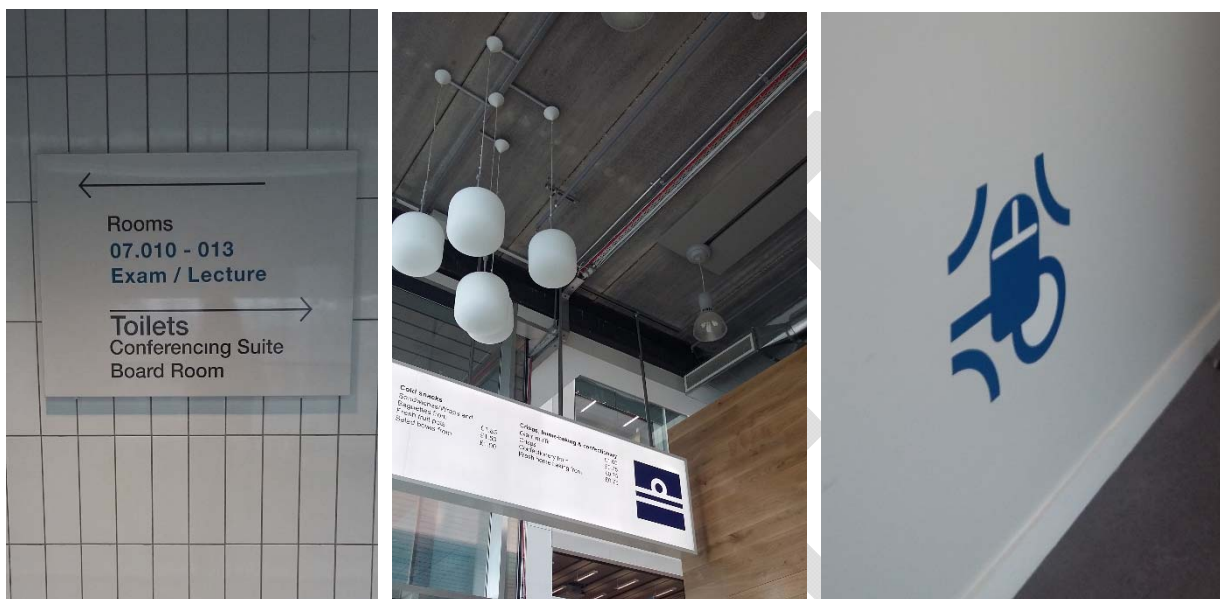


Figure 15 – Various signage types within the building

6.2.1.2 Space

Space is about the size and interrelationship of the buildings or component spaces. The statements regarding space, included in the questionnaire, are listed below.

- The spaces in the building are the right size for their functions
- The building's layout and the relationships between rooms work well
- The circulation space works well
- The ratio of usable space to the total area is good
- The building's layout provides a good balance of communal and private spaces
- There is adequate storage space

The graphs below illustrate a summary of responses from the sample of building occupants regarding Space.

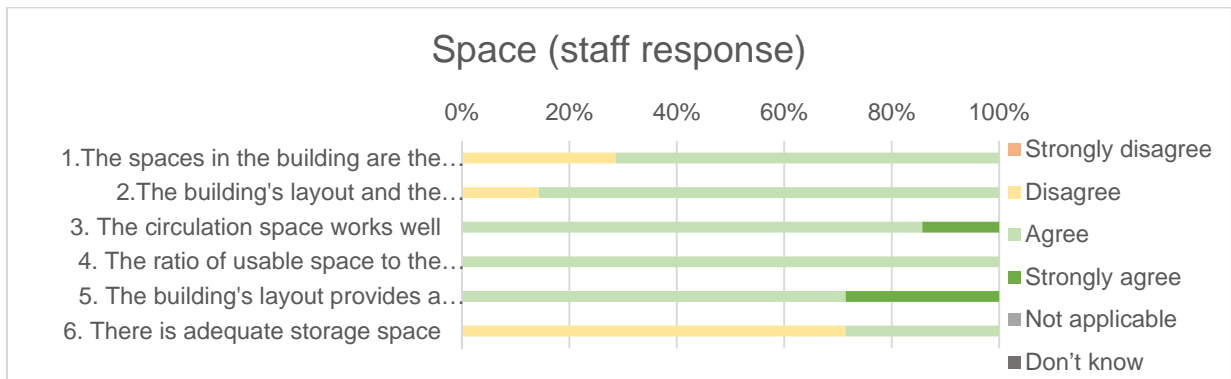


Figure 16 – A summary of staff response regarding *Space*

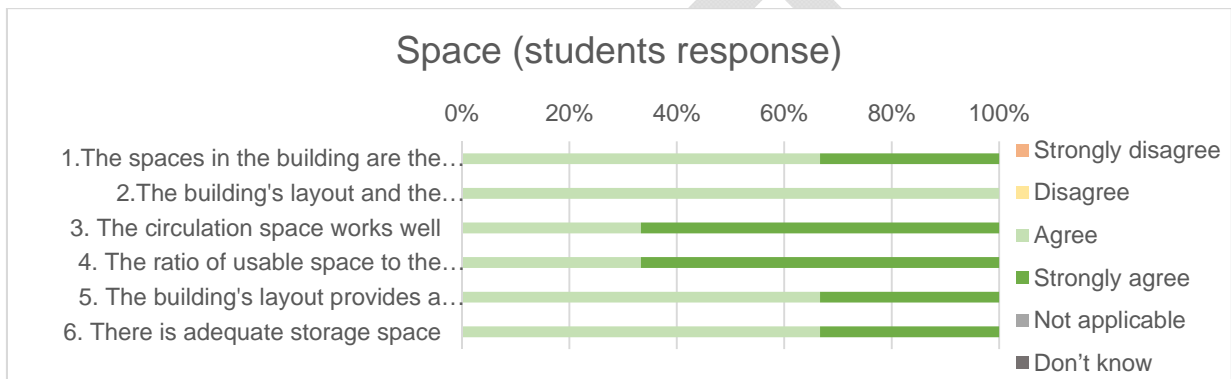


Figure 17 – A summary of student's response regarding *Space*

When describing *Space* as part of the questionnaire, responses from building occupants suggest that building users are very pleased with the building's layout, the relationships between rooms, the circulation space and the ratio of usable space to the total area. While some occupants confirmed that their initial perceptions were that the vast atrium could be viewed as 'wasted space', occupants now appreciate that the central, accessible space provides a dedicated area which is highly appreciated, utilised and enjoyed and that the abundance of natural light entering the building and the remarkable views across the city create a 'buzzing' atmosphere. Users reported to enjoy using this central meeting space as a place to hold informal meetings and somewhere to simply sit and enjoy observing 'College life'.

Occupants reported that the new building has encouraged and enabled a new way of working for many staff who are now occupying space in the in open plan offices and classrooms. Staff did comment that it has taken some time for all users to familiarise themselves with their new surroundings and to adjust to a new open and active environment, having previously occupied smaller, cellular office spaces. All respondents agreed that overall the new setting has created a more positive space and atmosphere for staff to work in. During the workshop session, respondents also commented that they enjoyed having more direct contact with their colleagues and visibility over what others are working on, which has been reported to encourage and support more collaborative ways of working. Staff commented that occupying more vibrant and active spaces within the new building made parts of the old College building appear 'derelict, dull and quiet' in comparison. Staff also discussed their thoughts and feelings in relation to the new breakout spaces that have been provided within the new building and agreed that these are very welcome, comfortable spaces that are well utilised during break times.



Overall staff agreed that they are pleased with the amount of office space that has been provided for, however some did comment that they felt it would be more beneficial if teaching areas were slightly more spacious in some of the classroom areas. Some staff expressed the view that open plan classrooms were not the ideal layout for the delivery of some science subjects as staff reportedly found it difficult to keep students focused on the subject and prevent them from being distracted by other activities going on around them. During the discussion session it was suggested by others that some classrooms could be rearranged, or timetables revised to better utilise the available teaching space and perhaps better match the availability of space with the type of activity being delivered.

Students reported that they are really pleased with their new teaching spaces and the variety of studying and breakout areas that the new building offers. The new library provides an excellent space for both focused individual study and group working activity and is well used by students. Students also agreed that the provision of laptops available from this area is a great improvement over what was previously available in the old facilities. The only concern students voiced was in relation to some of the breakout space that is located beside the library, where at times noise levels can be a distraction to those who are utilising the quieter space in the library.

6.2.1.3 Uses

Use is concerned with how well the building caters for the functions it may accommodate originally and in the future. The statements regarding uses, included in the questionnaire, are listed below.

- The building enhances the activity of the people who use it regularly
- The building contributes to the efficiency of the organisation
- The building easily accommodates the users' needs
- The building provides good security
- The building is adaptable to changing needs
- The lighting allows for different user requirements
- The layout allows for changes of use
- The heating, ventilation and IT installations allow for changes of use
- The structure allows for changes of use

The graphs below illustrate a summary of responses from the sample group of building occupants regarding *Uses*.

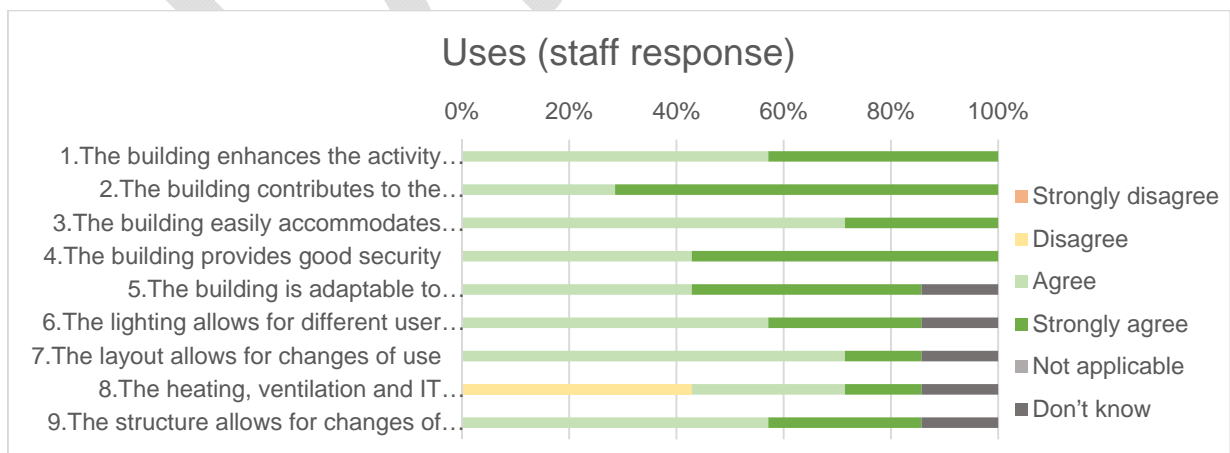


Figure 18 – A summary of staff response regarding *Uses*

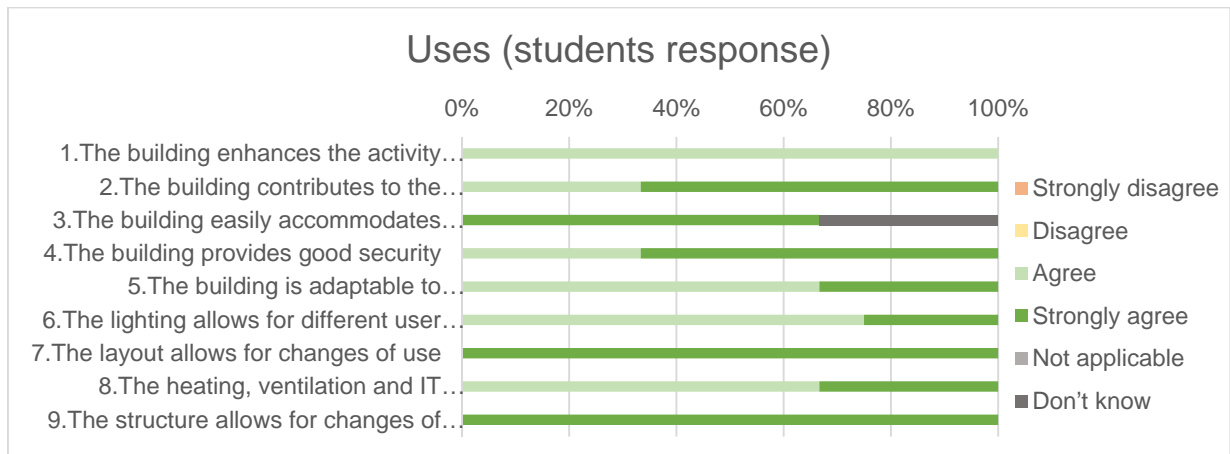


Figure 19 – A summary of students’ response regarding Uses

The questionnaire responses confirm that the majority of building users who responded agree with the statements made regarding the building *Uses*. Respondents commented that the new building enhanced interaction for both staff and students as a result of the open plan working spaces and comfortable, informal breakout areas located across the building: the circulation space, including atrium, the library, coffee shop and the canteen were listed as some examples. Various seating arrangements in the different circulation spaces were reported to encourage a range of different activities, from quiet study, private conversations, to group discussions and informal meetings. The variety of flexible spaces and movable partitions in some areas enable these spaces within the building to be easily adapted ensuring that they can accommodate a number of uses at present and in the future. For instance, some classroom areas can be rearranged to allow for more focussed study or expanded to support larger breakout and group activity where discussion can take place without disturbing others in the quieter teaching areas. Another example was given by a member of staff where the flexible floor layout allowed for some of the equipment to be rearranged in one of the workshop blocks, making that area more useable for a particular user group. Overall, respondents agreed that the building provides great flexibility and enables building users to adapt a variety of spaces at ease according to the College’s changing needs.

The College confirmed that new security measures were introduced, including use of smartcards to access all teaching and studying spaces, with internal doors being automatically locked after 6 pm. These added security features have been well received by building users.

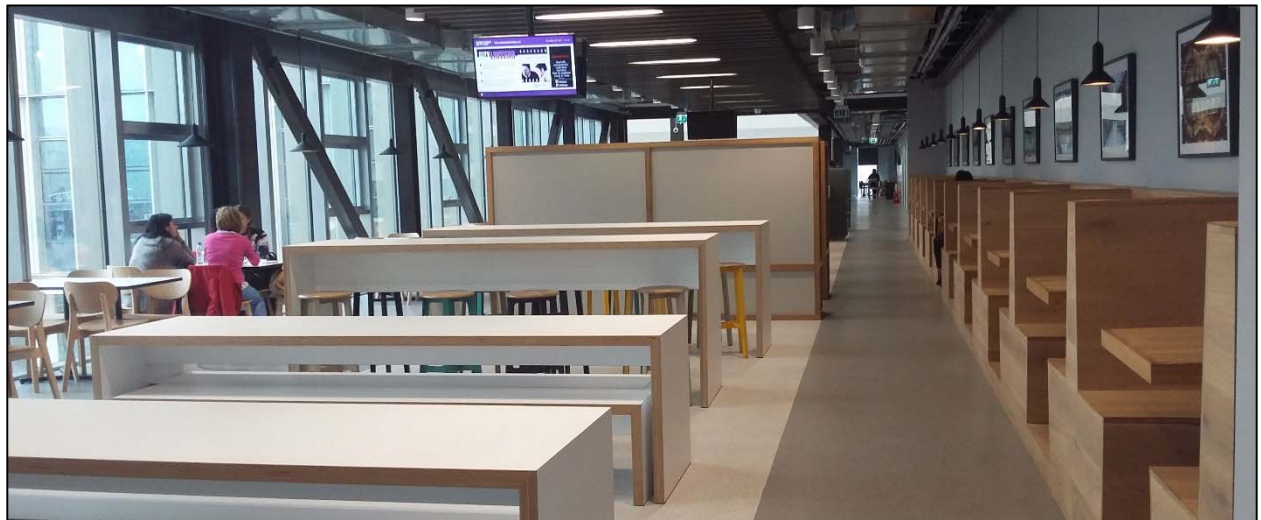
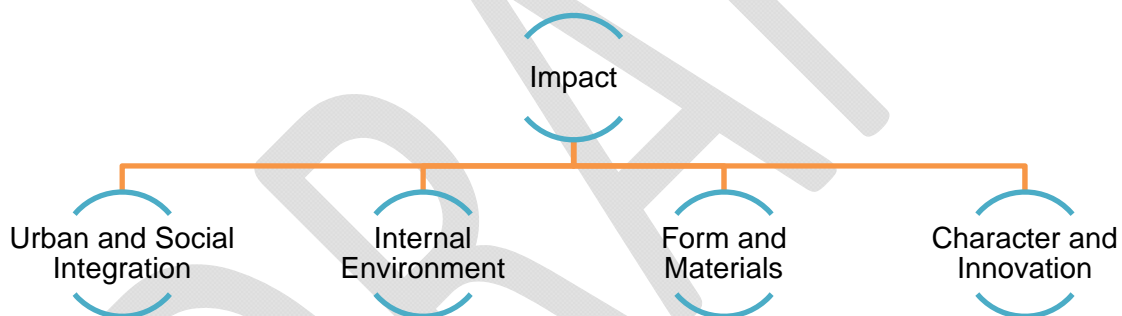


Figure 20 – Canteen

6.2.2 Impact

Impact refers to a building's effects on the local community and environment. This topic covers 4 areas: urban and social integration, internal environment, form and materials, character and innovation.



6.2.2.1 Urban and Social Integration

Urban and Social Integration is concerned with the integration of the building into the local neighbourhood and the relationship of the building with its surroundings. The statements regarding *Urban and Social Integration*, included in the questionnaire, are listed below.

- The building contributes to the neighbourhood
- The building is sited well in relation to its context
- The area immediately outside is pleasant
- The landscape around the building contributes to the neighbourhood
- The building is well located in relation to local facilities
- Members of the public are welcome in the building
- The people in the neighbourhood like the building
- The building stimulates social and economic regeneration

The graphs below illustrate a summary of responses from the sample of building users regarding *Urban and Social Integration*.

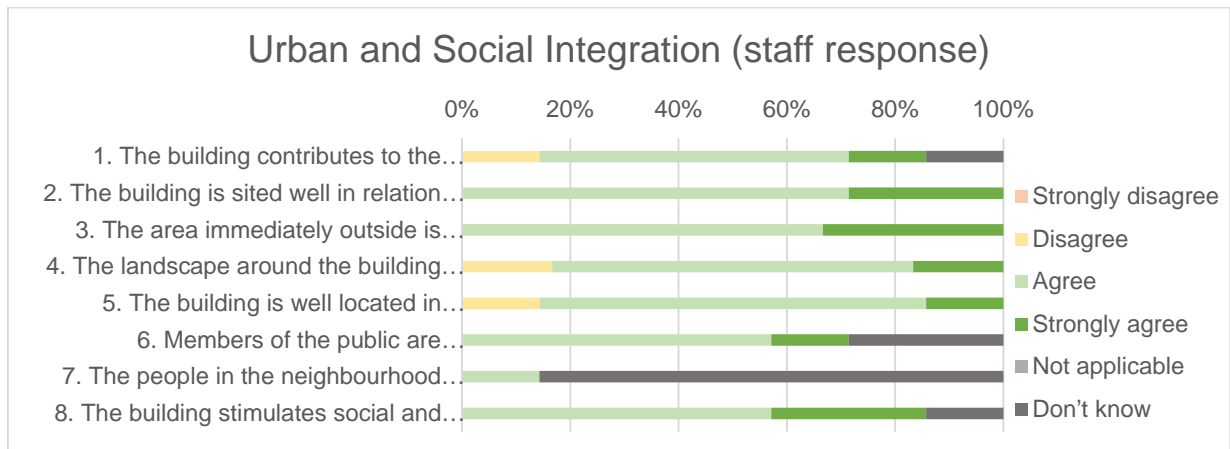


Figure 21 – A summary of staff response regarding *Urban and Social Integration*

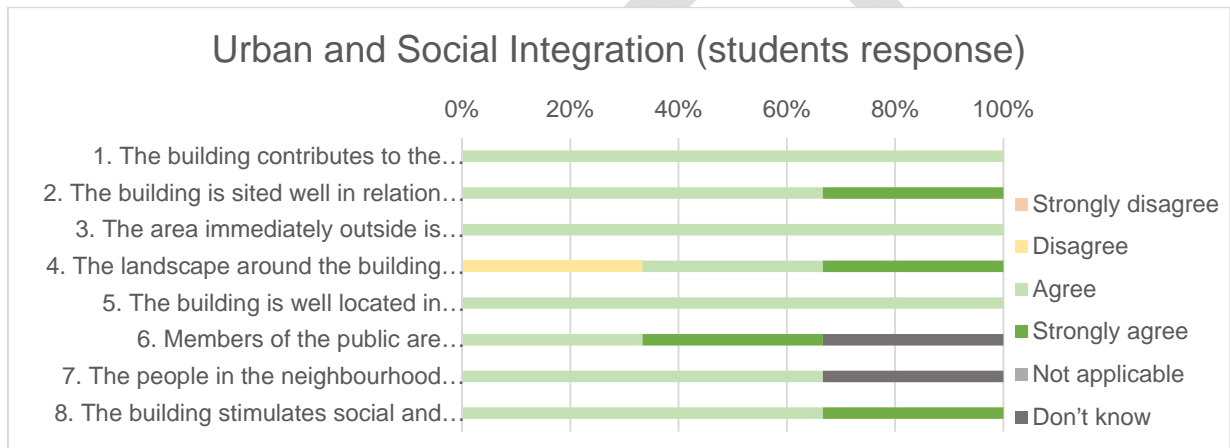


Figure 22 – A summary of students' response regarding *Urban and Social Integration*

Responses confirm that the questionnaire respondents view the new building as a massive improvement when compared with the old building. During the occupant workshop discussion sessions, some building users described the new building as having the 'wow' factor and commented that users and visitors love the dynamic and the 'buzzing' atmosphere. The new landscaping was also reported as adding to the impressive design of the new Campus. The new building is located directly adjacent to where the original College building stood and staff commented that as a result they did not initially expect there to be any difference in terms of access to facilities or connection to the external environment. However, with the new building sitting slightly closer to the river bank and directly accessed via the enhanced walkway workshop participants commented that they felt this provides an even better link with the College's nautical theme. Furthermore, users commented that the enhanced landscaping and positioning of the main entrance provides a better feel and connection with the City Centre, encouraging users to walk across to the river during lunch break and to access the walkway to travel to a variety of shops or the nearby park, Glasgow Green. Building users reported that they believe the new building and its surroundings have already had a positive impact to the surrounding area and hope that the area will continue to benefit from investment and will be regenerated further.



Figure 23 – Old College building before demolition

(Image source: Edmund Sumner, from *The Architects Journal*, *Riverside Campus, City of Glasgow College* by Michael Laird Architects with Reiach and Hall, 11 March 2016)

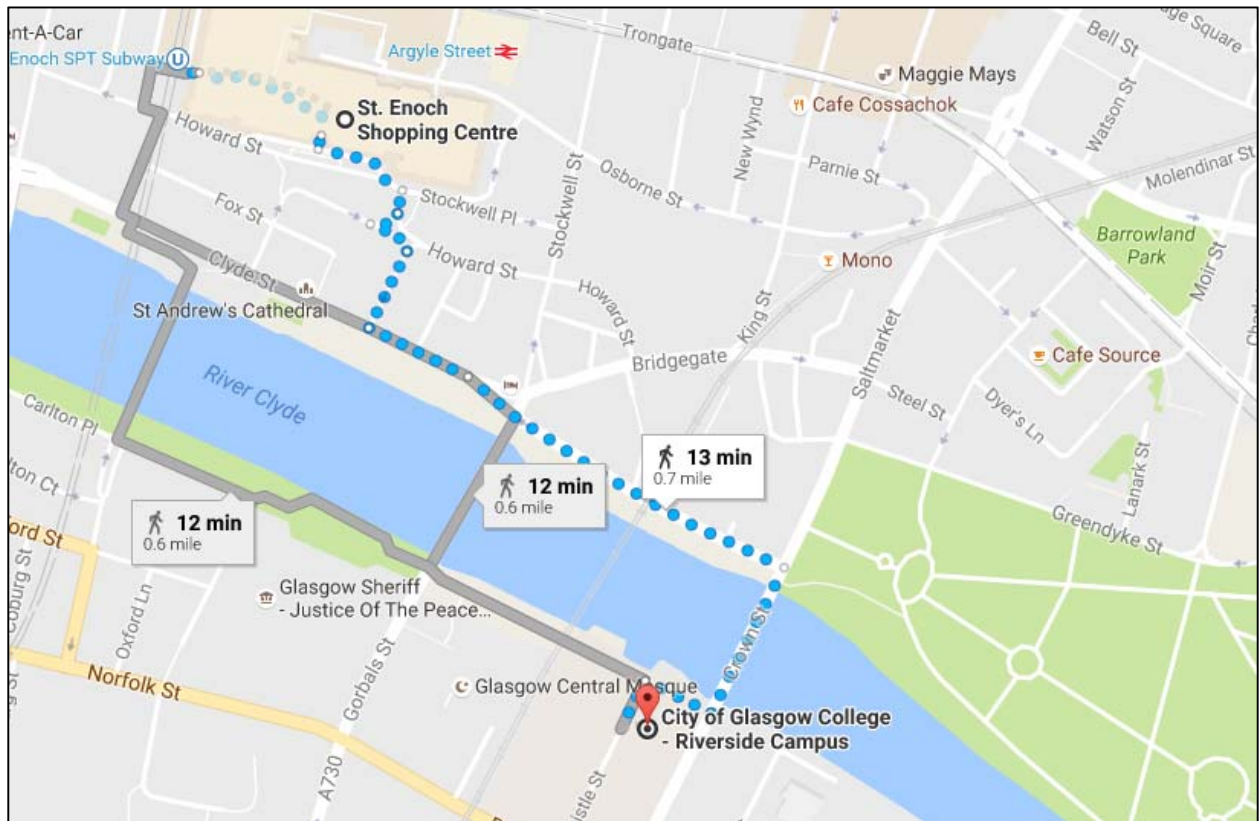


Figure 24 - Main entrance facing the river encourages walks to the city centre / Glasgow Green

6.2.2.2 Internal Environment

Internal Environment is concerned with the quality inside the building's envelope. The quantitative aspects of some of these elements are dealt with under *Performance*. The statements regarding *Internal Environment*, included in the questionnaire, are listed below.

- The building is a pleasure to teach and study in
- The building provides a sense of security
- The building does not feel cramped or overcrowded
- The building reduces stress for users
- The circulation spaces and common areas are enjoyable
- I am satisfied with the level of amenities in the building
- The building provides good views
- The internal environment is of high quality with an appropriate level of person control
- The natural light in the building is sufficient
- The electric light in the building is sufficient
- The indoor temperature of the building is comfortable in all seasons
- The indoor air quality is pleasant
- The building has good acoustics
- The building is clean



The graphs below illustrate a summary of responses from the sample user group regarding *Internal Environment*.

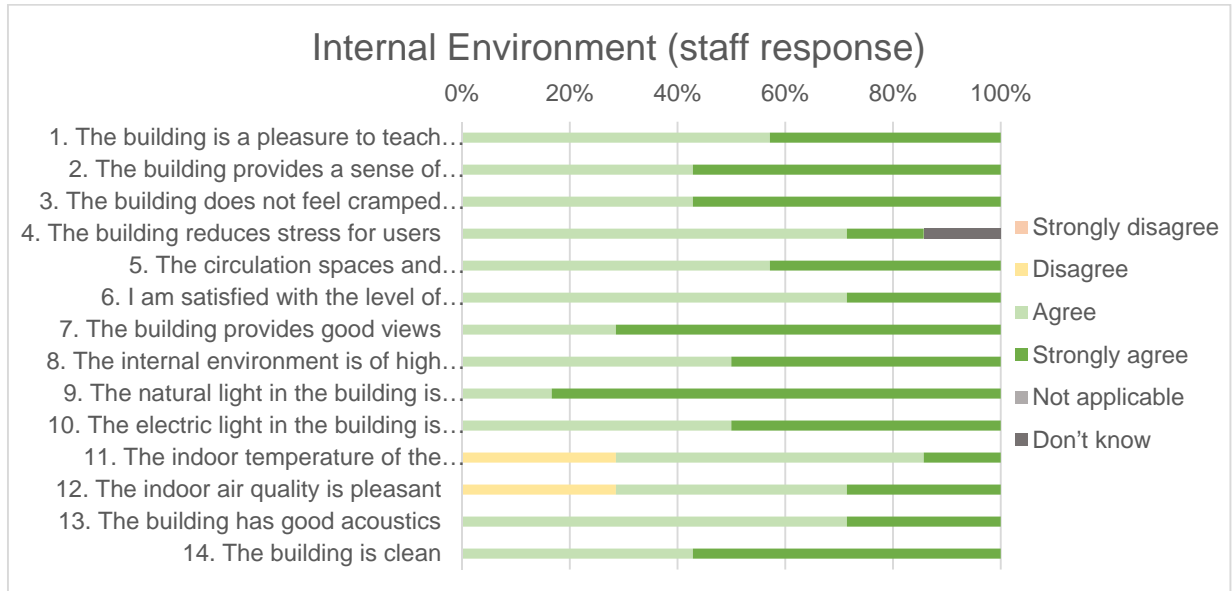


Figure 25 – A summary of staff response regarding *Internal Environment*

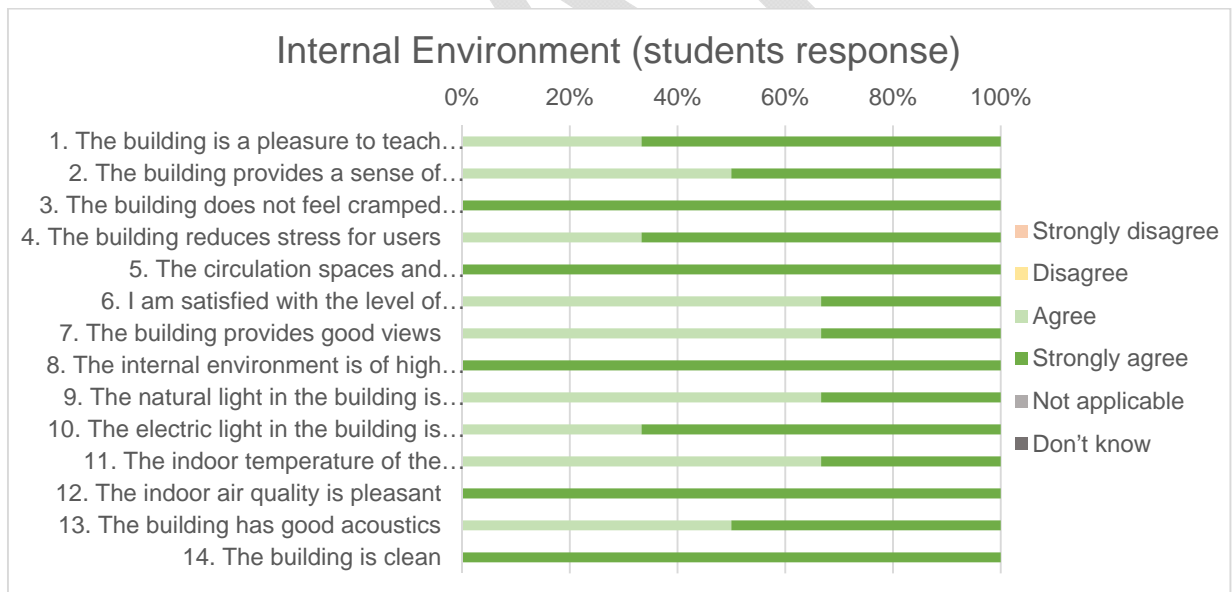


Figure 26 – A summary of student's response regarding *Internal Environment*

Staff and students clearly expressed their feelings about the internal environment of the new campus as being a much more positive experience when compared with the old building. The answers from the questionnaire demonstrate that building users are really pleased with the internal environment the College building provides. During the workshop discussion session the user group agreed that they felt the building offers a pleasant and secure place to study. The airy and bright atrium was reported by users as creating an exciting core for the building which is viewed as a very inviting and functional space, providing spectacular view across the city. All other circulation spaces are widely used as places to relax



and have informal meetings. Overall, respondents reported that they feel the building is clean, well designed acoustically and thermally, and creates comfortable internal environments and provides good air quality levels.

During the discussion sessions, some staff expressed concern in relation to the classrooms that accommodate a larger amount of IT equipment as being too warm. It was suggested that those teaching spaces would benefit from having openable windows, so users could have an element of direct control over the amount of cool air entering these spaces. It was noted that this however, could work against the mechanical ventilation system that has been designed to serve these areas and that perhaps a review of the ventilation settings would be a more appropriate option in order to create a more comfortable environment for end users. In order to avoid additional energy consumption as a result of user behaviour, it was suggested that in situations where users are not satisfied with the internal environment of spaces, they should first report this to the estates team to allow a review of controls and monitoring equipment to be carried out. The Estates Team would have the option to pass this information to the external management contractor who is responsible for maintenance and operation of building services and the internal environment settings. It was also suggested during the discussion sessions that some additional information in regards to internal environment monitoring and control could be added to BREEAM user guide. For instance, it should be made clear to end users that windows should not be opened before the occupant controlled thermostatic radiators valves are turned down. Practical information on the use of the building and systems will help to ensure occupants get the most from the building in terms of comfort and functionality.

6.2.2.3 Form and Materials

Form and Materials is concerned with the building's physical composition, scale and configuration within its boundaries. The statements regarding *Form and Materials*, included in the questionnaire, are listed below.

- The design of the building is inspiring
- The building is easy to navigate

The graphs below illustrate a summary of responses from the sample user group regarding *Form and Materials*.

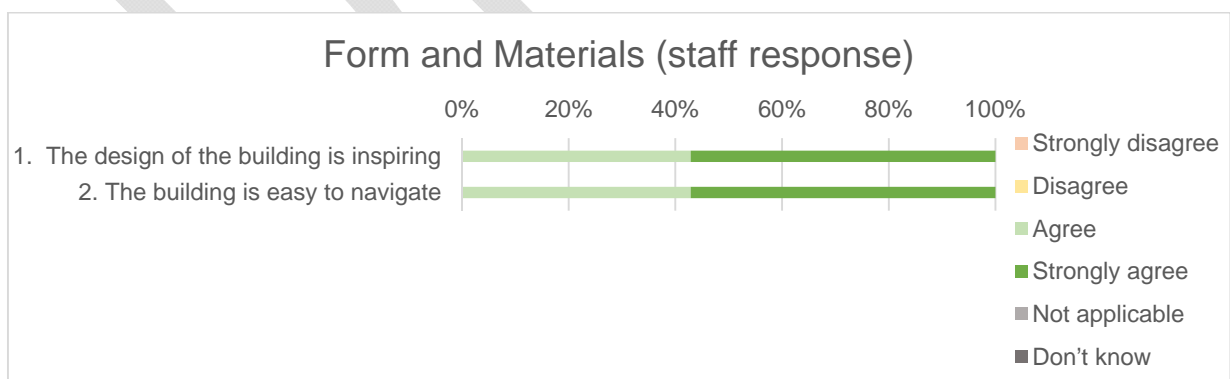


Figure 27 – A summary of staff response regarding *Form and Materials*

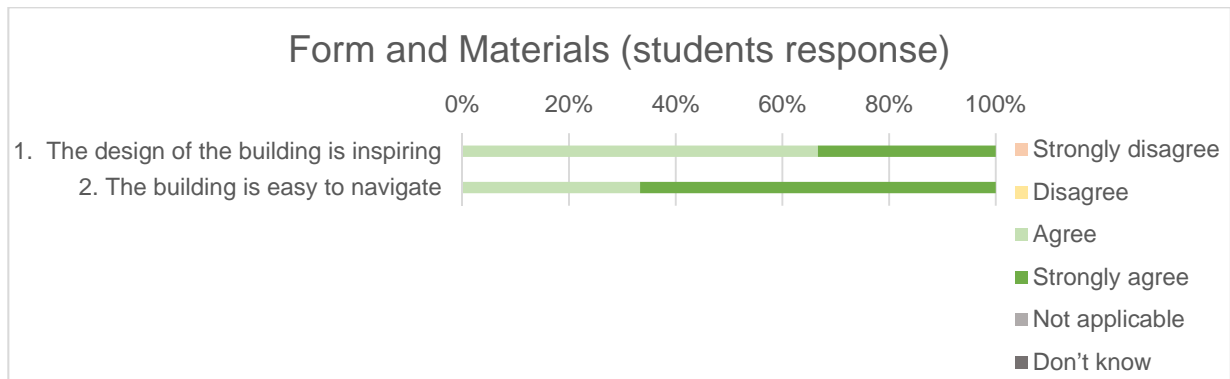


Figure 28 – A summary of students' response regarding *Form and Materials*

All attendees of the workshop reported that they believe that the new building creates a truly inspiring space and provides a pleasant environment for both learning and study. Respondents agreed that the signage and arrangement of spaces around the atrium makes the building is easy to navigate. The only concern that was raised by occupants was in relation to the circulation area and that was that the barriers that are located close to the lifts could have been set a little further back to allow for queueing at the lifts during busy periods and to help avoid blockages.

6.2.2.4 Character and Innovation

Character and Innovation is concerned with what people think of the overall building. The statements regarding *Character and Innovation*, included in the questionnaire, are listed below.

- The building reinforces the image of the College
- The building meets the needs of staff and students
- Visitors like coming here
- The building is widely acclaimed for its quality
- The building has character
- The building makes you think
- The quality and image of the building enhance my experience of teaching and learning
- I am proud of the building
- This building has introduced me to new technologies
- There is leading edge technology in this building
- I feel that my career will prosper as a result of studying/teaching at this College
- The College has an innovative approach to teaching
- The College has a good reputation
- There are leisure facilities available to staff and students
- There are childcare facilities available to staff and students
- The College promotes diversity and inclusion by taking account of religious and cultural practices
- I enjoy coming to College to study/work
- I would recommend the College to a friend as a place to study/work

The graphs below illustrate a summary of responses regarding *Character and Innovation*.

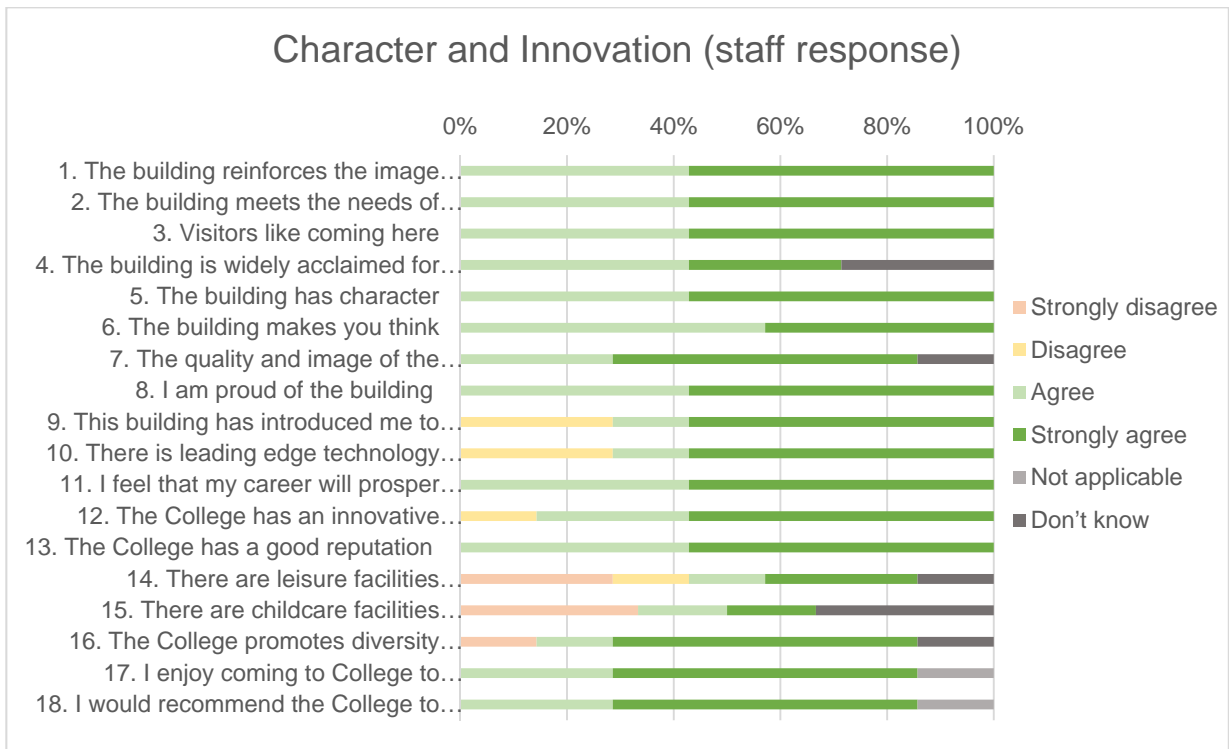


Figure 29 – A summary of staff response regarding *Character and Innovation*

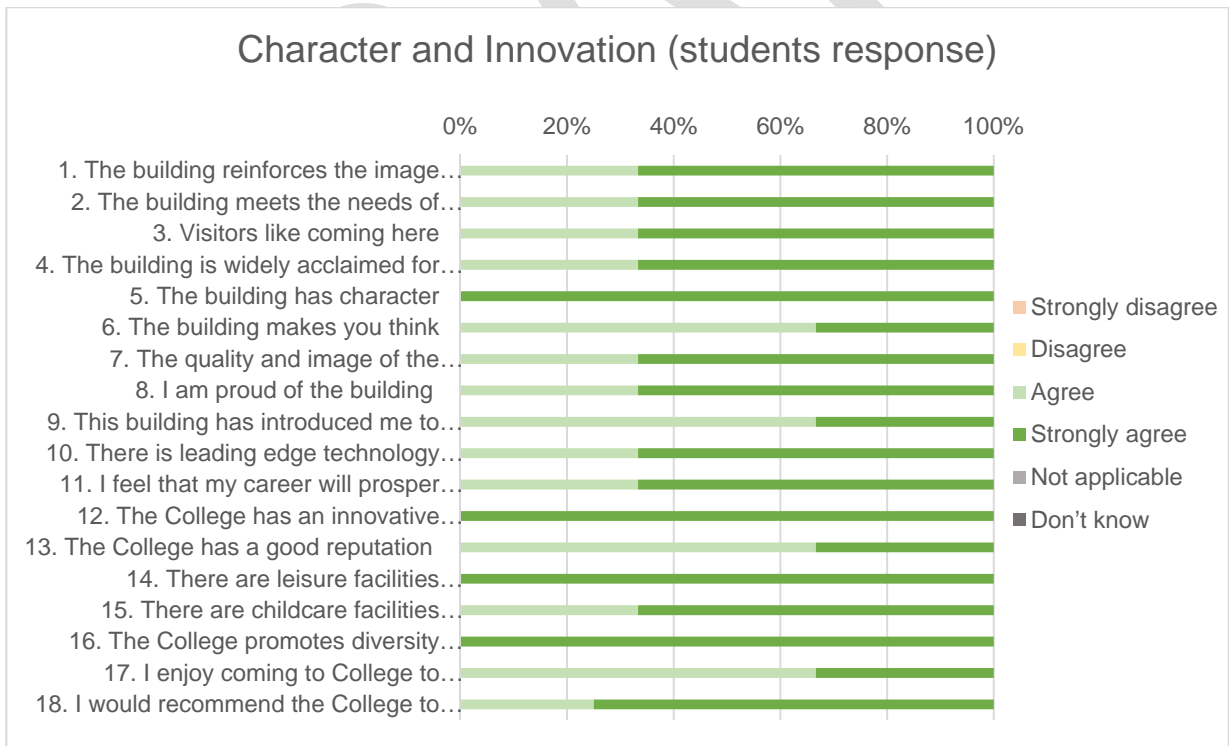


Figure 30 – A summary of students' response regarding *Character and Innovation*



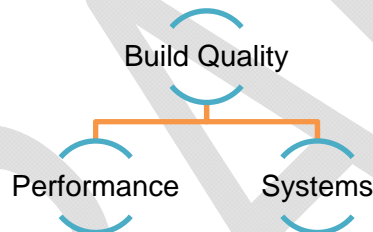
As a result of the new Riverside building the City of Glasgow College was awarded on the 19th of July 2016 with the *Investors in Innovation* Standard. To date, the College is the first and only college or university in Scotland to gain this prestigious status. The Riverside Campus has also been shortlisted for the prestigious RIBA Stirling Award 2016.

It was evident from the discussions that took place during the building user consultation sessions that the majority of users are exceptionally proud to work / study in the building and expressed their positive feedback in terms of the building character and innovation. They reported that they believe that this reinforces the image of the College and enhances their learning experience. Students commented that they would definitely make a recommendation to their friends to study at the new Campus.

The unique facilities of the faculty, including a 360-degree Shipping Simulation Suite, Marine Skills Centre with its own jetty, rescue lifeboats and a free fall lifeboat, state-of-the-art Nautical Chart Rooms and one of the most modern working ships engine rooms in the UK, create a truly unique studying environment that is focused on practical experience. The summary graphs show the positive responses from those who responded to the questionnaire, particularly amongst the student group.

6.2.3 Build Quality

Build Quality stems from how well the building is constructed: its structure, fabric, finishes and fittings, its engineering systems, the co-ordination of all these and how well they perform.



6.2.3.1 Performance

Performance is concerned with the building's mechanical, environmental and safety systems. The statements regarding *Performance*, included in the questionnaire, are listed below.

- The building is easily maintained
- The building withstands wear and tear
- The building is easy to clean
- The building will weather well
- The building's finishes are durable
- The components in the building are easily replaced when necessary
- The internal environment meets recommended standards
- There is sufficient daylight in the building
- The artificial lighting levels in the building are sufficient
- The thermal climate in the building is appropriate to its use
- There are no noise pollution issues
- The air quality is good
- The building environment is healthy, i.e. not stuffy or cold etc.
- The Health & Safety strategy has been clearly communicated to building users
- There is a clear fire safety strategy
- The fire signage is easy to understand
- The building produces a low number of complaints / faults reported by users



The graphs below illustrate a summary of responses from the user group regarding *Performance*.



Figure 31 – A summary of staff response regarding *Performance*

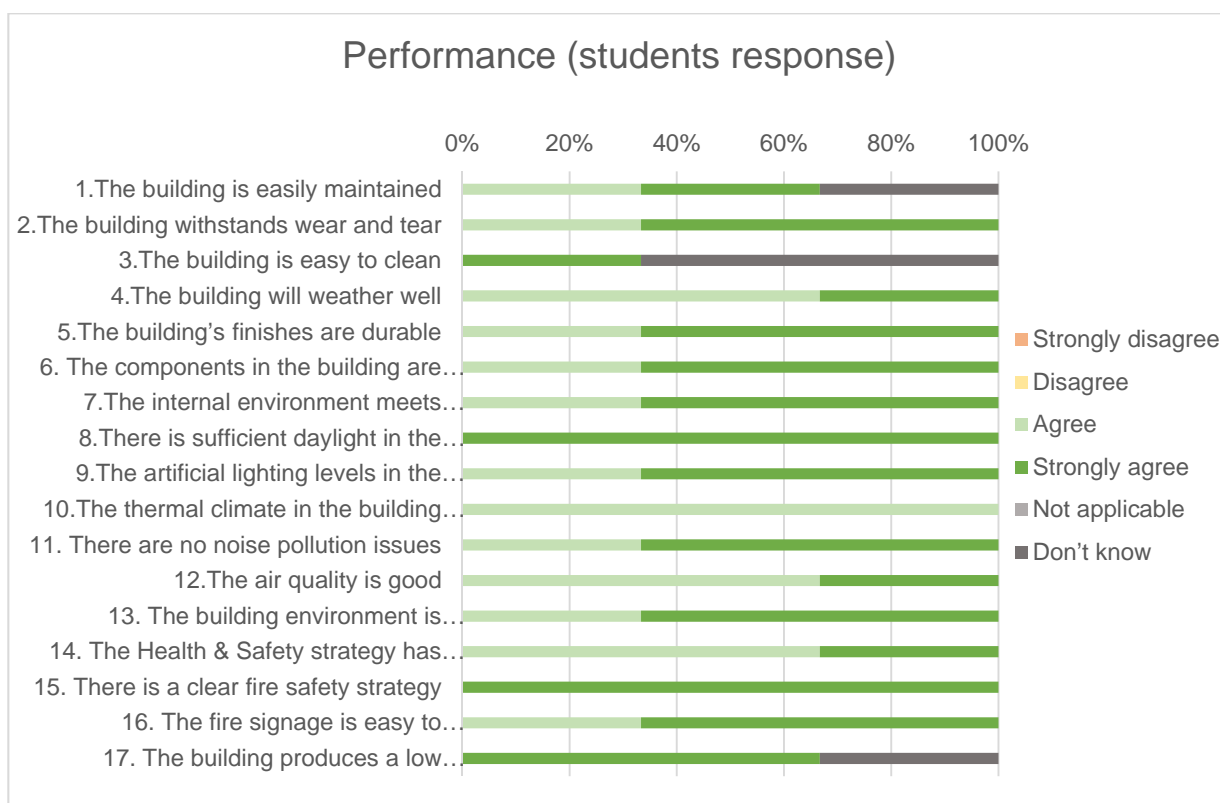


Figure 32 – A summary of students' response regarding *Performance*

Workshop attendees reported that they are pleased with the quality of finishes and furnishings throughout the building. They commented that there is a significant improvement in terms of provision of good quality daylighting levels and the balance of electric lighting and control throughout the new building. During bright and sunny days, occupants reported that both offices and classrooms are filled with natural light, which they reported as one of the biggest contrasts with some of the previously occupied spaces in the old building, such as the basement office which was described by some staff as 'dull and dark'. The daylight levels and the risk of glare is managed by electric blinds that have been installed in all occupied areas. The blinds provide protection for users from direct sunlight, overheating and glare. However, the majority of users at the discussion session did comment that they would like some flexibility in order to exercise more control over the operation of the blinds, As opposed to automatically adjusting throughout the day. This is something that could be reviewed with the Estates Team. In terms of any maintenance requirements, building users agreed that they are really pleased with rapid response from Estates and that any significant issues are generally resolved very quickly by the College's appointed external contactors.

6.2.3.2 Systems

Systems looks at the quality of the building's components. The statements regarding *Systems*, included in the questionnaire, are listed below.

- The building users have been educated on how to use the heating properly
- The building users have been educated on how to use the lighting properly
- The building users have been educated on how to use the ICT (Information, Communication and Technology) systems properly
- This is a sustainable building



The graphs below illustrate a summary of responses from the user group regarding *Systems*.

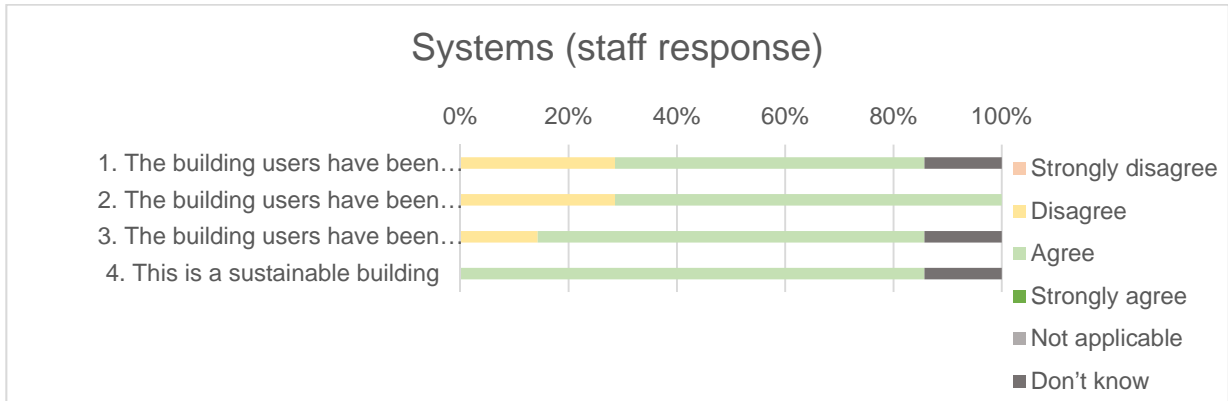


Figure 33 – A summary of staff response regarding *Systems*.

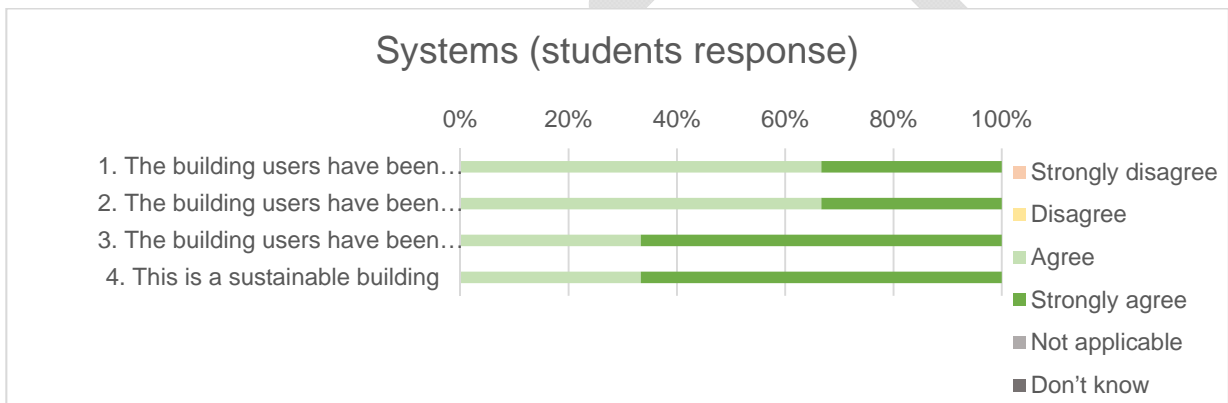


Figure 34 – A summary of students' response regarding *Systems*.

Staff and students confirmed that they have benefited from some user training and that they have a general understanding of the building in relation to the operation of systems and services within the new Campus. Occupants have an opportunity to change temperature settings by +/- 2°C and reported that they felt users are confident with the operation of lighting system. Staff members agreed that if anything concerns them or is not working properly, they report to this to the Estates Team in the first instance to ensure the enquiry is logged and managed correctly. During the workshop session some staff did suggest to the Estates Team representative that the internal environment settings for the computer rooms should be reviewed as those classrooms are reported as areas in the building that do become really warm on occasions.

Overall, initial occupant feedback has been extremely positive for the Riverside Campus, with many users enjoying the enhanced teaching and learning facilities that are available to them in what was described by users as a 'dynamic' and 'buzzing' new space.



7 Initial internal environment monitoring

As a part of BRE's POE of the City of Glasgow College Riverside Campus, a number of internal environment loggers have been located across the campus to help monitor the environmental performance of the building throughout a full seasonal cycle. The recorded parameters include:

- Temperature (°C)
- Humidity (%)
- Air Quality (CO₂, ppm)

All readings are taken using scientific data loggers and effectively provide an overview of the key performance parameters that help to create a comfortable internal environment for building occupants. The results of these measurements and comparative information are detailed in the sections below. Initial results illustrate readings taken during the first two months of POE monitoring.

Temperature and relative humidity measurements were initially recorded at 5 minute intervals and air quality readings were taken at 20 minute intervals. The College Estates Team helped to advise on the most suitable locations for the POE internal monitoring equipment.

Internal environment monitors were located in areas listed in

Table 4.

Location	Area description
Office R.00.014	Open plan office
Library R.01.025	Open plan library
Classroom R.02.013	A specialist classroom

Table 4 – Monitored areas

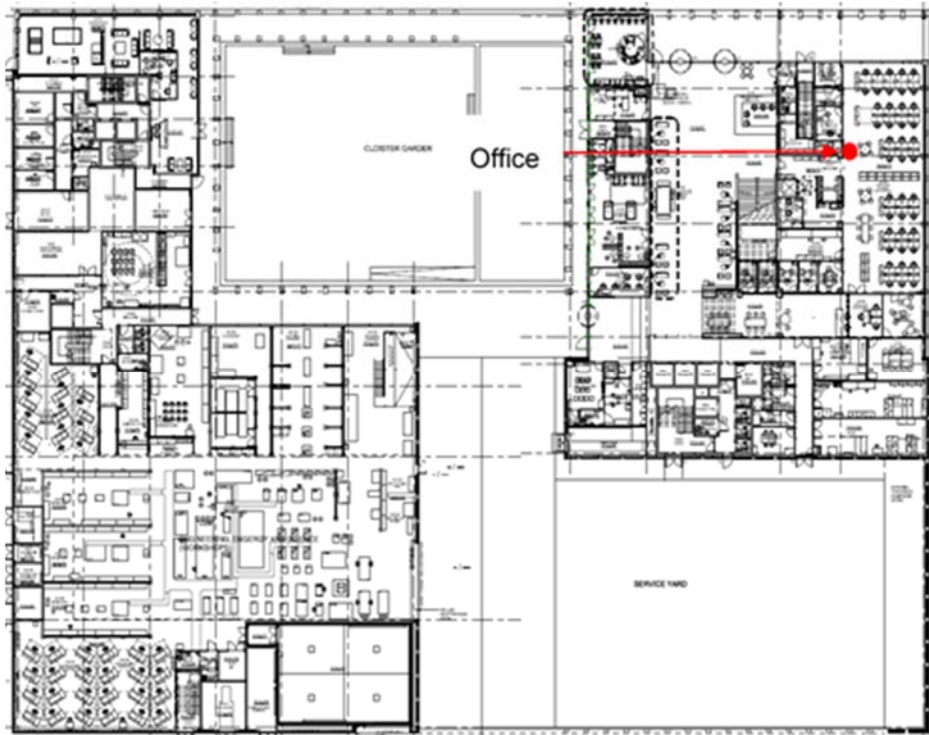


Figure 35 – Loggers' location in the office (Level 00)

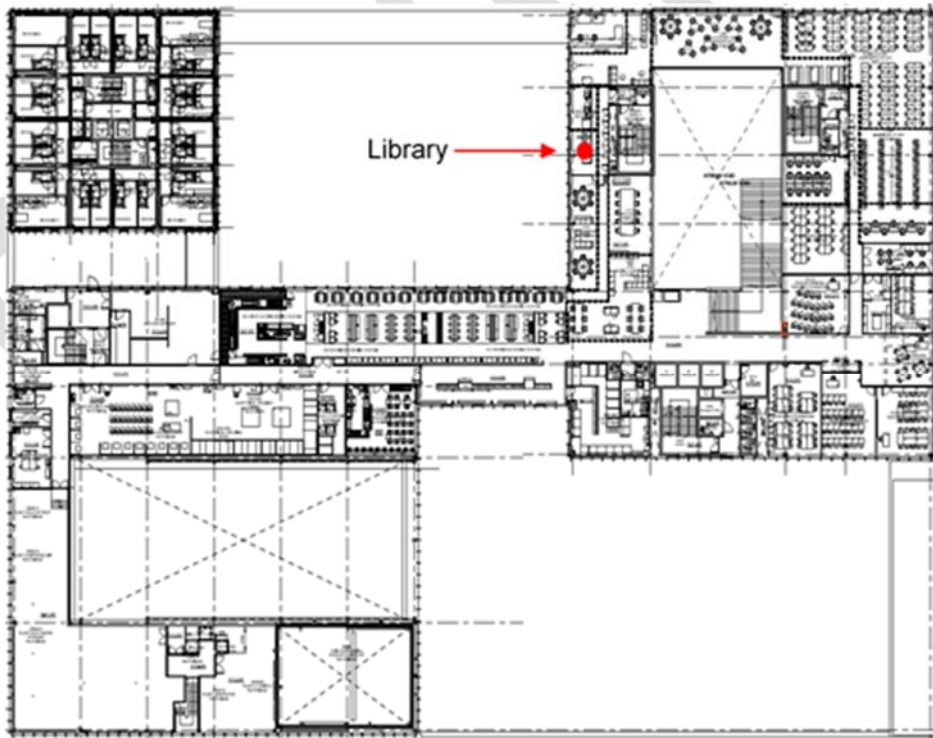


Figure 36 – Loggers' location in the library (Level 01)

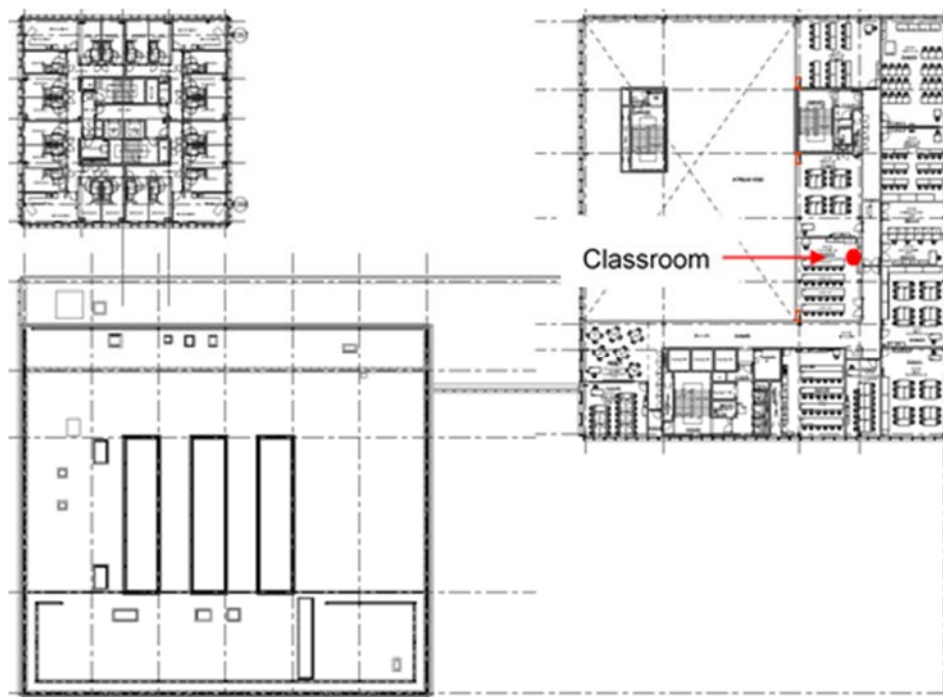


Figure 37 – Logger’s location in the classroom (Level 02)

7.1 Measurement and Analysis

7.1.1 Temperature

Typical thermal comfort levels, in terms of temperature, vary dependent upon the building users clothing type and activity. For a conventional teaching space, it is assumed that the majority of activities involve sitting and wearing normal to heavy clothing. Therefore, typical comfort levels would typically range from between 18 to 21°C for most spaces, as summarised below.

Clothing Type	Typical Comfort Levels - Temperature (°C)			
	Strolling	Standing	Sitting	Sleeping
Light clothing	15	23	25	27
Normal clothing	8	19	21	24
Heavy clothing	0	14	18	21
Very heavy clothing	0	10	14	18

Table 5 – Typical Comfort Levels – Temperature (°C)



Figure 36 illustrates the recorded temperature readings for the monitored classroom. It is evident that during this period, temperatures recorded were higher than the recommended maximum comfort level of 21°C, with recordings relatively constant and most temperatures falling between 22 and 24°C range.

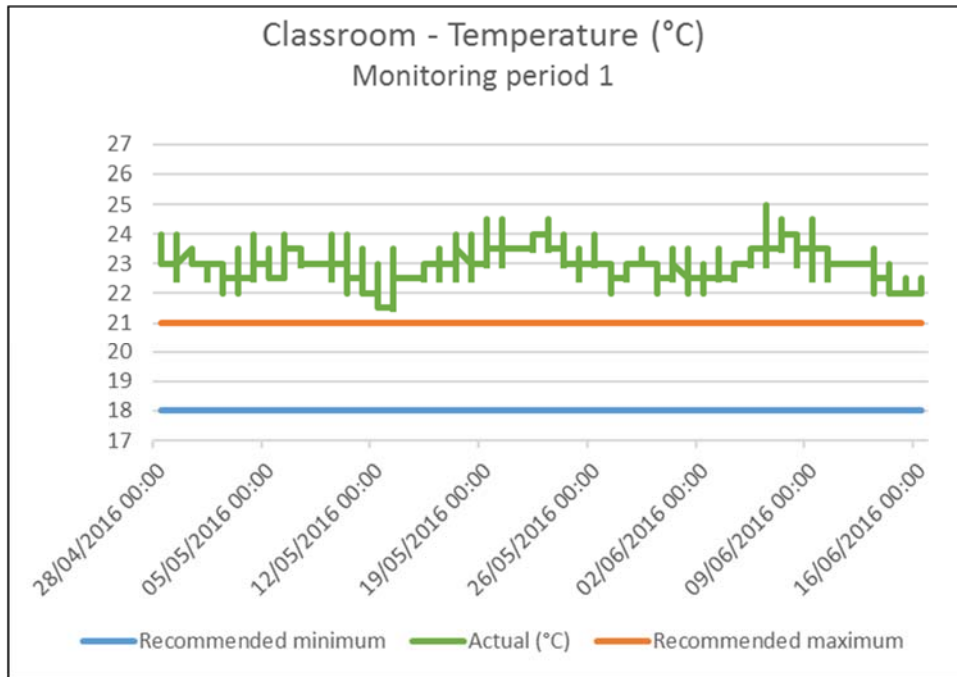


Figure 38 – Classroom temperature during monitoring period 1

As demonstrated in Figure 39 (below), temperatures within the office represent a higher variation than those recorded for the monitored classroom, with temperature ranging between 17 and 26°C. The higher temperatures may indicate that this space is at risk from overheating on warmer, sunny days. It is recommended to continue to monitor this space in the coming months and to continue to compare the readings against the University’s own readings and user feedback. Also, it would be beneficial to review the settings of the BEMS system to monitor the delivery of heating, ventilation and any cooling to this space.

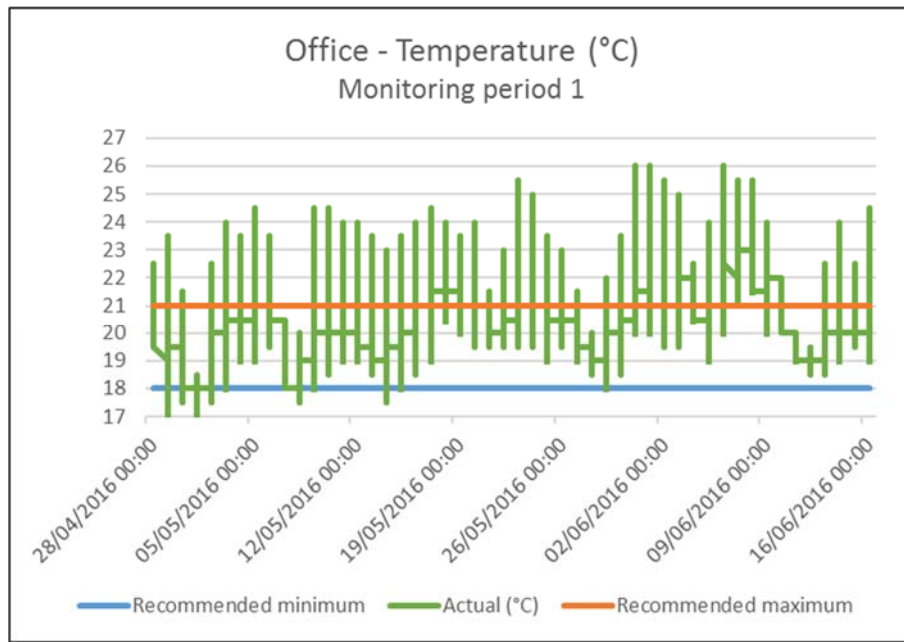


Figure 39 – Office temperature during monitoring period 1

Within the library space, the internal environment logger was placed in the reception area at desk height. Figure 40 confirms that recorded temperature readings were also higher than expected, with some days reaching 27°C. This could indicate that this space, which is located behind large panes of external glazing on the building’s façade, could be at risk of overheating. However, it was noted that the logger was located at desk height close to some IT equipment which may have had an impact on the recorded readings. For this reason, the logger will be relocated and monitoring will continue in this area to allow a more detailed analysis to take place and help to identify if there is any risk of the overheating.

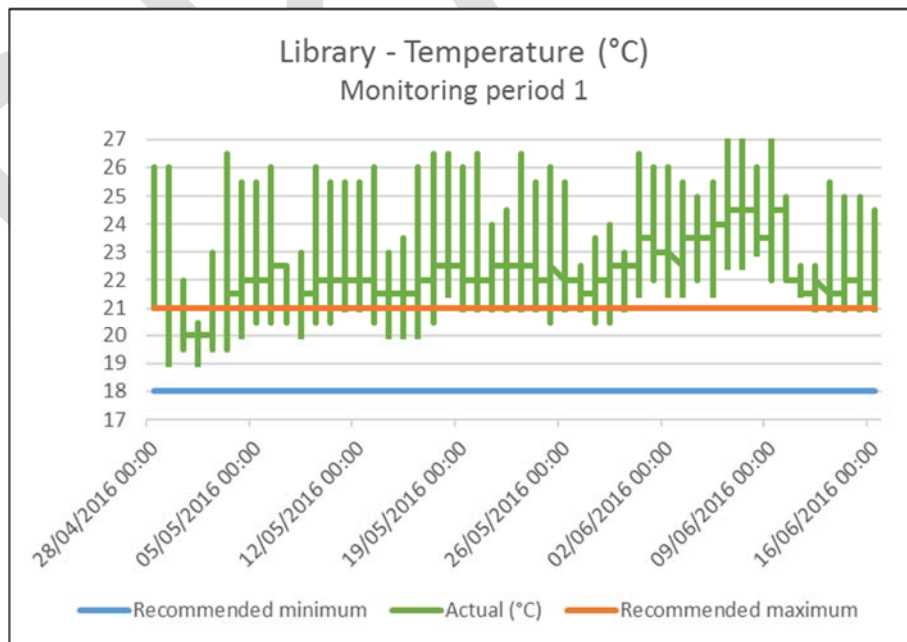


Figure 40 – Library temperature during monitoring period 1



7.1.2 Relative Humidity

Generally, in a working environment, the recommended comfort levels for relative humidity are between 40% and 60%. When temperatures are higher, humidity should be nearer the lower end of this scale. When humidity is too low there can be a wide range of health implications, including eye, nose and throat irritation, respiratory infections and headaches. Similarly, when humidity is high the internal environment can become very uncomfortable. As the human body feels warmer and cannot cool, overheating can occur and lead to dehydration and chemical imbalances within the body.

The graphs below illustrate that in all three monitored spaces relative humidity levels generally fall within the recommended comfort levels, however in all spaces there were a number of occasions where the levels fell below the recommended minimum of 40%. The lowest level of relative humidity was recorded in the library space and this was recorded as 20%. Dry air along with relatively high temperatures can create an uncomfortable working environment, one which occupants can find it difficult to focus. Further monitoring is recommended to verify whether similar internal environment conditions are present during cooler seasons.

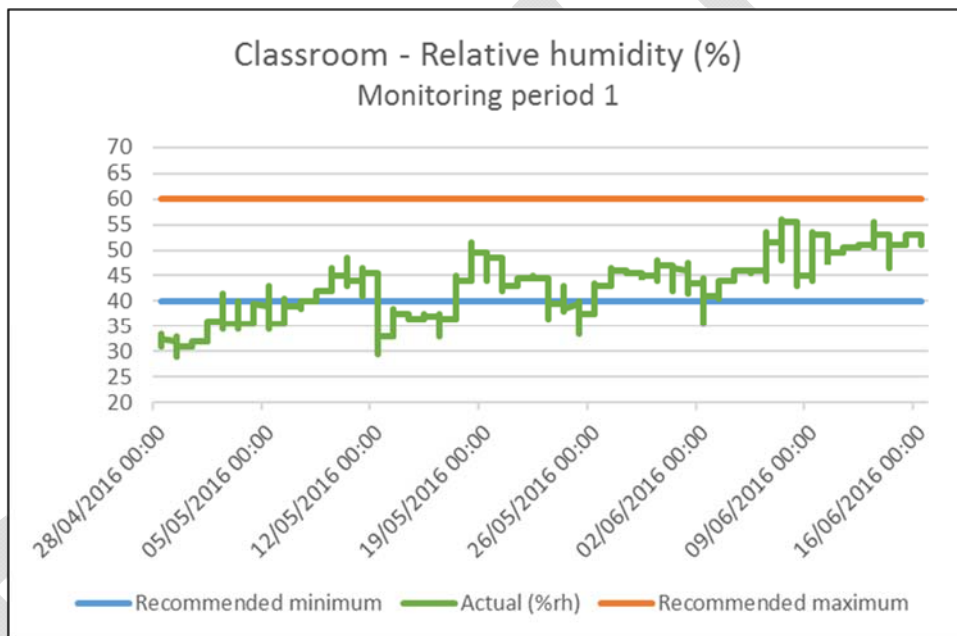


Figure 41 – Classroom relative humidity during monitoring period 1

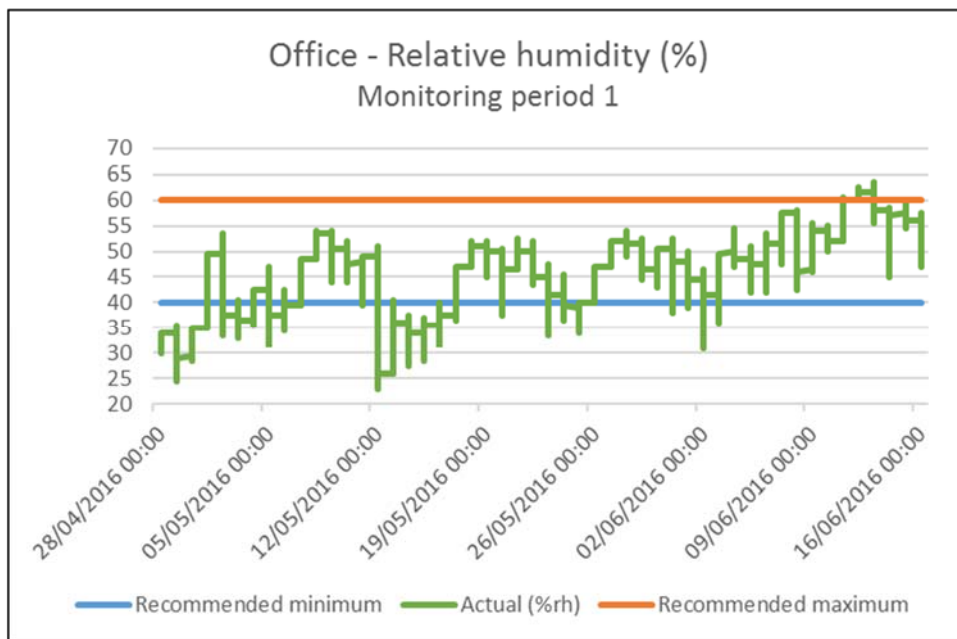


Figure 42 – Office relative humidity during monitoring period 1

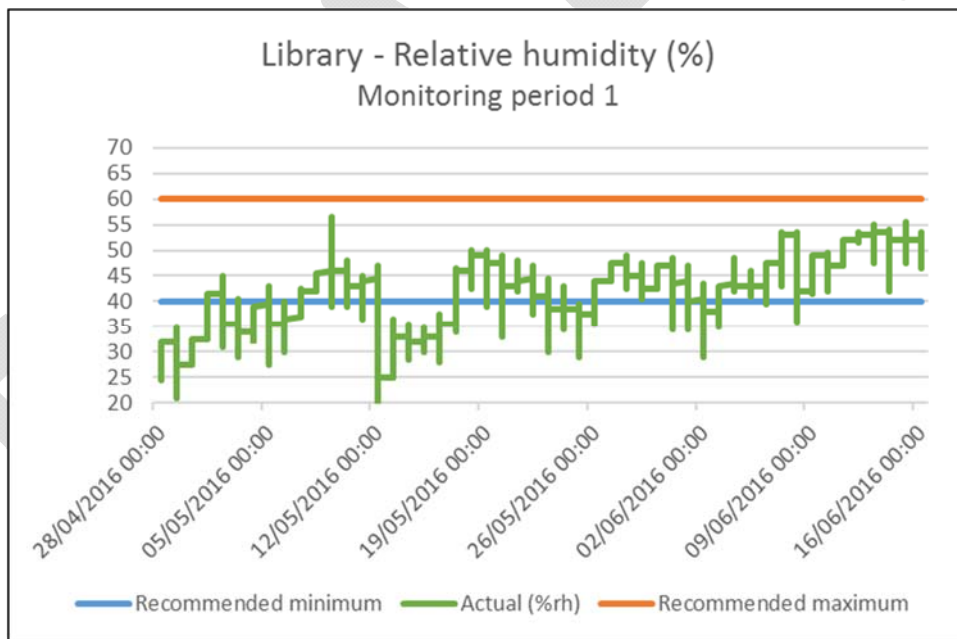


Figure 43 – Library relative humidity during monitoring period 1

7.1.3 Air Quality

Air quality is a measurement of the level of carbon dioxide (CO₂) recorded within the internal environment, and is measured in parts per million (ppm). Typically, ‘Good’ practice levels are generally below 1000 ppm and ideally less than 600 ppm. When CO₂ levels are in excess of 1000 ppm, drowsiness and lethargy are common and are often reported as common side effects, with a noticeable drop in user productivity and concentration. Levels of between 1,000 and 2,700 ppm have been shown to have an adverse effect on building occupants wellbeing and up to a 14% reduction in cognitive function.



Within the College, air quality monitors were installed in the office and the library areas. Results from both spaces show that air quality is well within the ideal recommended level 600 ppm. Readings higher than this benchmark did not exceed 800 ppm which is still much lower than a recommended maximum. Graphs showing readings from sample days illustrate that the higher concentration of carbon dioxide was recorded during hours where spaces were occupied by people the most, approximately between 9:00 and 17:00.

From initial monitoring results, air quality levels within the Riverside Campus building would be described as very good. Further monitoring will continue throughout the project and a more detailed analysis will take place at FPR stage.

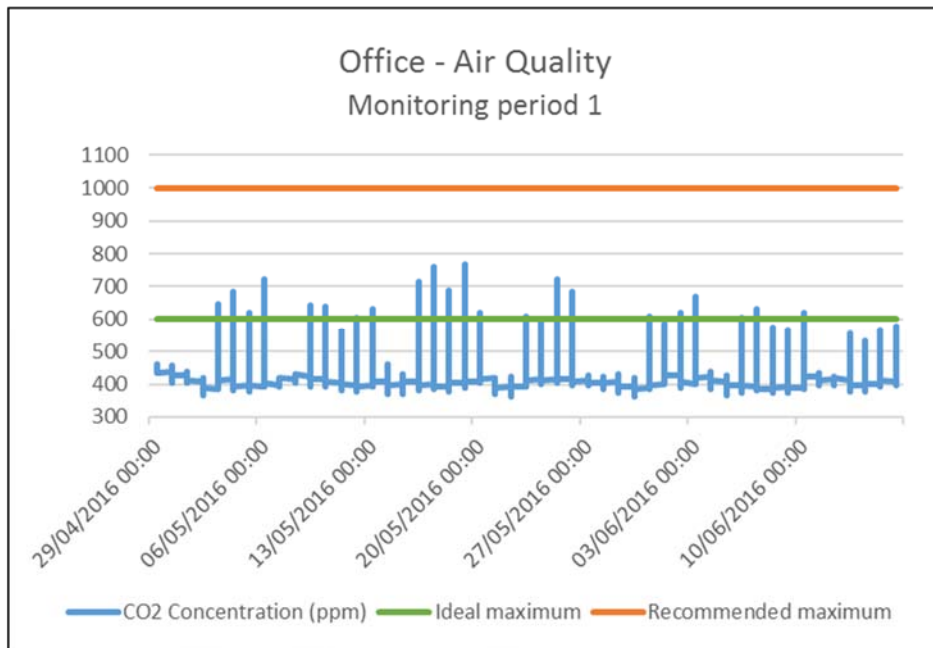


Figure 44 – Office air quality during monitoring period 1

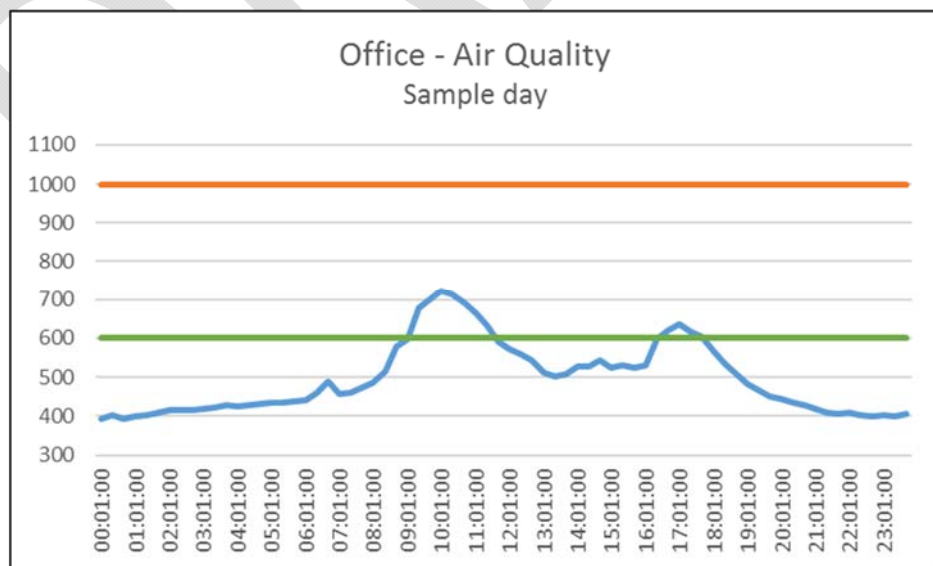


Figure 45 – Office air quality during – sample day

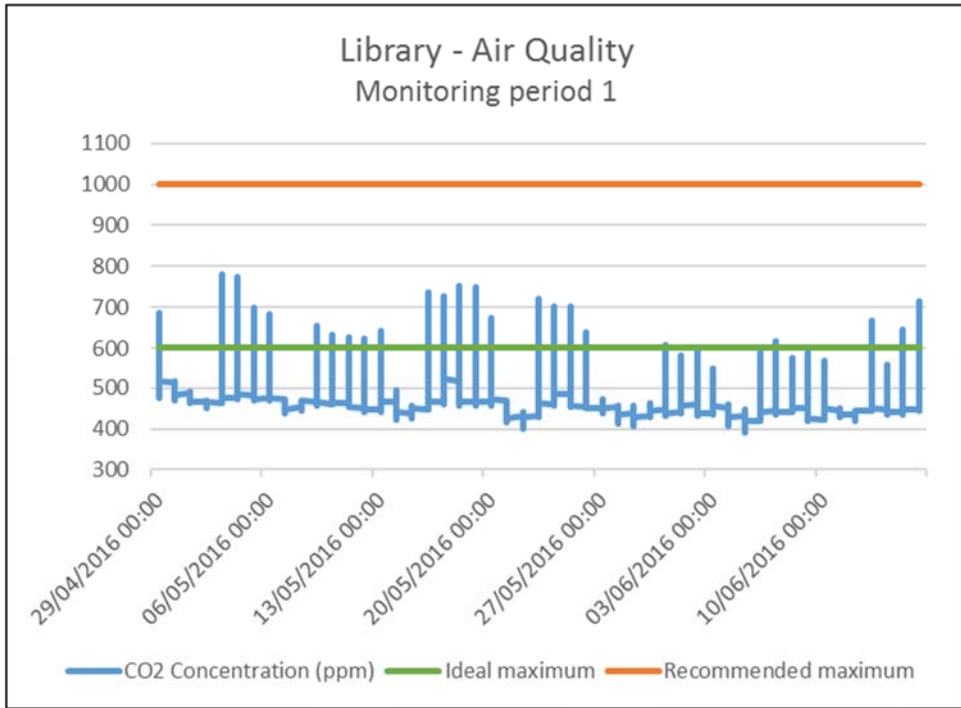


Figure 46 – Library air quality during monitoring period 1

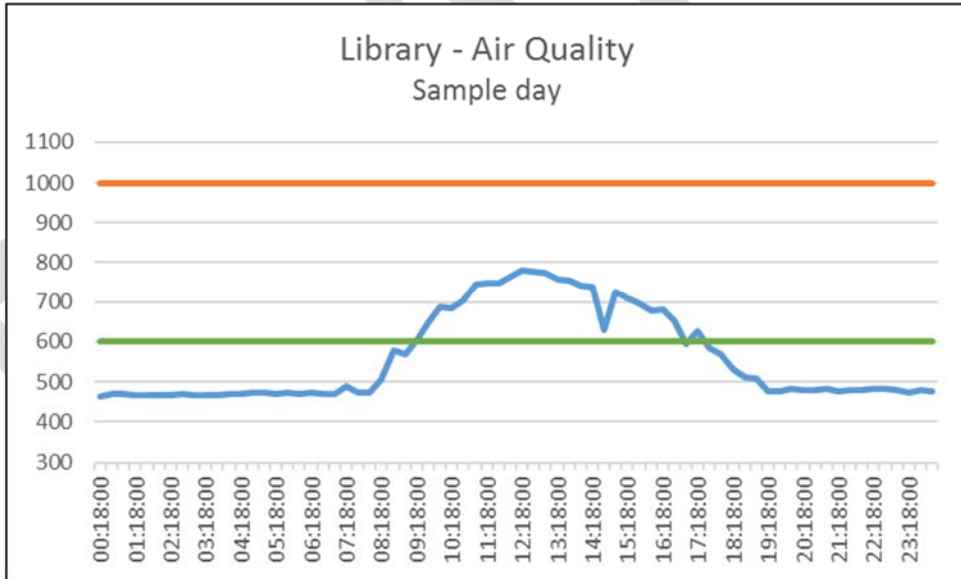


Figure 47 – Library air quality during – sample day



8 Post Project Review

8.1 Overview

As part of the Operational Review process, BRE facilitated a workshop session where members of the client project management team and the externally appointed project team discussed the Riverside Campus project delivery process, from the early briefing and appointment stages through to detailed design, construction and initial handover stages. The objective of the session was to reflect on the effectiveness of the project management process, to review the final outcome and to identify key areas of success for the project and to capture any future learning.

The following project team members were in attendance and participated in the discussion session:

- City of Glasgow College (Client – Project Management and Estates)
- FES (Building Services)
- FES (Facilities Management)
- Sir Robert McAlpine (Contractor)
- Michael Laird Architects (Architect)

The following sections capture the finding from this facilitated discussion session.

8.2 Initial feedback

Initial discussion focused upon the immediate impact and visitor and occupant impression as a result of revisiting the building post-completion, and feedback was extremely positive. The new building was described as a 'great space' which provided 'a real connection to the city' through the open atrium and panoramic views. The project delivery team commented that they feel very proud of the completed building and agreed that the project vision had been well executed through the dynamic mix of space and the initial positive impact that the building has already made. Particular reference was made to the central atrium 'hub' located at the heart of the building, which has been warmly received by both building users and visitors. Both the College and project team are delighted by how well received the building has been by users and visitors during the initial months of occupation.

8.3 Project process

The project team acknowledged that the College had spent significant time and effort preparing a very detailed, comprehensive and well prepared project brief. The highly detailed brief was said to provide a strong base from which to develop the project, providing good insight to what was required by the College and ultimately supported a successful outcome. The College reported that they felt the time and resource investment that went into developing the brief was worth it as it provided them with greater certainty in relation to the end product that would be delivered and the timescales and budgets that the project would adhere to.

The project delivery process was through a DBFM (Design, Build, Finance, and Manage) contract, which was awarded for both campuses (Riverside and City Campus). Initially the College had to consider nine potential bidders, which was eventually narrowed to one preferred choice over an intense evaluation period of 21 months.



Following initial appointment, the College defined project work streams, and these were reported to support and enable continuous and integrated development and improvement over the course of the delivery programme – as follows:

- Technical
- Delivery
- FM (Facilities Management)
- ICT (Information and communications technology)

The project team commented that early collaboration and the open, established and frequent communication channels that were established was key to the successful contract award. The project team described the initial stages more as 'open dialogue' as opposed to a formal tendering process. The collective message from the project team was that 'collaboration was key' to the success of the process and the project outcome.

The project benefitted from having the College, design team and contractor based in a single, on-site building for the duration of the project, enabling a much simpler and more efficient communication process. Having a full-time project based staff member on the City Campus site was reported to enable and support good levels of communication and collaboration between all parties.

The College advised that JM Architects were appointed to act as an independent client advisor to the project, and reviewed technical data with the College to ensure a full and robust understanding of the client requirements, designs and technologies prior to the commencement of any construction. Interior designers were also appointed to work in specific areas of the building, and their input was considered to be useful and valuable as well as enhancing the overall aesthetics of the building.

The make-up of the project team (with FES Facilities Management integrated) supported supply chain engagement, and enabled realistic costs to be assigned to relevant areas, materials and technologies. A detailed Life Cycle Costing and analysis was undertaken with input from FES FM and this supported and enabled a robust procurement policy, which was then utilised as an operational and maintenance forecast. This supported continuous improvement and adjustment, and cost / benefit analysis for decision making. The maintenance forecasting also provided the College with valuable information in relation to future management plans and financial budgeting to support the on-going up-keep and maintenance requirements of the Riverside Campus.

Additionally, as part of the design and construction process a physical demonstration was developed for the building's corridor areas. It was acknowledged that designing the route for the building services was significantly more challenging than servicing the teaching spaces. The physical demonstration allowed for a number of solutions to be considered and the most appropriate design solution to be identified. This was considered by all parties as a 'very beneficial' and 'invaluable' exercise, and led to a redeveloped installation process.

The project was committed to showcasing a responsible approach to environmental and sustainable design and as such integrated the BREEAM standard and targeted an ambitious BREEAM 'Excellent' rating for the project. This requirement was identified as part of the initial contractor proposal. The project team felt that the BREEAM process added value to overall project, but that the paper trail required as an evidence logging exercise for this project was rather resource intensive. It was stated that the project was 'always designed and delivered as a BREEAM Excellent building' and that it 'just required the paperwork to confirm this'.

The project team confirmed that there was little variation from the original performance specification that they developed their initial submission compared with the final building design, and that this was attributed to having a well-developed, comprehensive client brief, ongoing dialogue throughout the process and a detailed specification. The most significant deviation from the original specification was an



enhanced lighting scheme, which while incurring additional capital costs, was considered to be extremely beneficial for the building operations and has been well received post completion.

8.4 Consultation and engagement

In-keeping with the theme of open two-way dialogue and positive communication, extensive consultation and engagement was undertaken with building users from a very early stage in the process and throughout. This included for:

- Detailed room data sheets agreed with all head of departments at an appropriate design stage
- Material samples being made available for inspection
- 2D / 3D drawings to help users visualise design concepts
- Walkthrough with staff (through detailed room plans and elevations)
- Building 'fly through' model (via Revit)
- Classroom 'for the future' demonstration

Room data sheets were used to capture, understand, facilitate and communicate staff requirements for each space within the building. The room data sheets in particular were considered by the project team as critical to the overall design process, and as such care was taken to ensure that these were well organised and comprehensive. As part of the consultation exercise the College provided room data sheets for staff to complete requesting that the information provided focused on their curriculum delivery requirements. A robust feedback process was established to help manage end user expectations for the project and all Room Data Sheets were signed-off by curriculum leaders prior to work commencing on site. The co-ordination and communication of outcomes was considered to be quite a challenge for the team, balancing requests against costs and pragmatism. It was noted that for future projects a key 'lesson learned' would be to further educate stakeholders on the content and detailed completion of Room Data Sheets to allow them to better understand the implications of these and their importance in the consultation process.

As part of the consultation process, the project team implemented a 'generic to specific' process, where initial consultation was undertaken with a large group stakeholders and at a high level. This was considered to be relatively 'broad-brush' and looked at new ways of working, such as open plan offices. Following this, more specific, detailed consultation was undertaken with curriculum heads who focused more on the detailed requirements of each space highlighting key attributes for the space and required technology or equipment.

The 'classroom for the future' and 'exemplar' demonstration rooms were created to enable staff to engage with the consultation process and visualise and review the design concepts prior to construction, and ensure that these met the standard required for the delivery of education. While in hindsight the timing of this exercise was considered by the project team to be 'a little late' in the overall process, it was still considered to be highly beneficial to the design team and the project.

Another key aspect attributed to the successful project delivery was the provision of the change management process. The College confirmed that a conscious decision and effort was made to ensure that all staff were adequately supported through what was described as a 'significant cultural shift'. This was considered as a challenge for the project team, particularly when moving staff from cellular offices with around six staff, to open plan offices with up to forty five staff.

This process was supported through a number of innovative and well managed processes, including for:

- Staff champions to engage, communicate and support with the transition
- Migration representatives for office areas
- 'dump the junk' days to help create more clutter free working environments



- Before and after pictures to highlight benefits and encourage behavioural change

In addition to internal consultation, significant community engagement was also undertaken. The completed Campus was said to have brought 'more life and light' to the local area. The consensus from the project team was that the surrounding area looks and feels much safer, and that the design of the building (particularly the publically accessible atrium 'hub') enables this. There was a noted community interest and support for the project, with many local neighbours having visited the Campus since completion. The community benefit and engagement activity will be something that is monitored over a longer period of time by the College.

8.5 Handover process and support

Given the role of FES Facilities Management within the project team, and the scope of the DBFM contract, the handover process and continued support was considered as very successful. While FES FM have been contracted by the College to take responsibility for the operation and maintenance of the building, a number of bespoke user guides have also been developed to support the College staff and students in optimising performance and best utilising the space available to them.

These included:

- BREEAM Building User Guide (non-technical guide for the whole building)
- 'Mini' Building User Guide (for each individual room type)
- Welcome guide (for all staff)

In addition to this, College staff were provided with training for control over all ICT equipment and building services within their teaching space as part of the handover programme. This included lighting control and use of the projector, two items that have been significantly upgraded within the new building to help enhance the user learning experience. The majority of building services functionality is automated, with some limited local control over heating. The College was said to be 'delivered with energy efficiency in mind, but with cognisance of space flexibility'. The user guides help to communicate what local control options are available to the end user and how best to interact with systems and services in order to allow users to get the most from their environment whilst also supporting the efficient operation of the Campus. Initial occupant consultation confirmed that building occupants found the user guides helpful and have helped to enhance the overall initial user experience.

The DBFM contract supports continuous improvement and the FM team, along with the College Estates staff, regularly review the BEMS data to ensure that the system is operating effectively and efficiently. While the BEMS has been described by the project team as 'self-teaching' and adjusts profiles and set points based on usage patterns, the FM team have continued to make adjustments to help the College realise the predicted operational and environmental performance. This is an on-going task as optimum efficiencies have not yet been currently achieved for all areas within the building. This includes for small adjustments that are required to enhance the operation of the CHP system as well as the ensuring the quarterly seasonal commissioning programme is delivered. In addition to this, other minor operational adjustments are proposed as a result of the initial user feedback that has been gathered, this includes reducing the timing of the PIR sensors to automatically switch off lights down from the current 20 minute interval, to 10 minute and then 5 minute intervals. All of these actions will help the College to further enhance the efficient operation of their systems and services, thus reducing their operating costs as well as their carbon footprint.

8.6 Summary

Towards the end of facilitated discussion session, the project team members were asked to reflect on the discussion topics and describe what they believed attributed to the success of the project. The key themes taken from the project team responses centred on the benefit of client engagement, a well-



developed brief and regular, open dialogue between all project team members and across each of the project work streams. Key words and phrases used by the team during the summary session included:

- 'collaboration'
- 'partnership'
- 'open discussion'
- 'willingness to embrace the learning curve'

The project team cited the presence and consistency of project staff as a significant benefit to the project. It was also highlighted that staff working on the project were very committed to ensuring successful delivery and assumed 'ownership' of the project from the very outset. This perhaps led to minimal staff turnover through the process and as a result there was a good level of consistency and management throughout all stages. The full team agreed that the development of open, honest and constructive dialogue was key to realising a project which they believe has 'delivered something amazing'.

DRAFT



9 Operational Review Summary

As one of Scotland's largest Colleges, the City of Glasgow College has ambitious aspirational objectives for its new City and Riverside Campuses, following on from the significant capital investment programme that aimed to significantly enhance the teaching and learning experience by creating a world leading institution.

The original business case for the capital investment programme highlighted fundamental issues and weaknesses associated with the condition, characteristics, configuration and disposition of the existing estate. The College was committed to ensuring that these were successfully addressed through the design, construction and operation of their newly enhanced facilities.

The POE process aims to evaluate the success of the project by capturing and reporting information over a period of time to consider the functional, operational and technical performance of the new Campuses. The process is a useful mechanism for gathering information that can help to determine value from investment as well as identifying and capturing valuable learning that can be used to positively influence future capital development within this sector.

This report confirms that the initial Operational Review stage of the POE process was extremely positive for the City of Glasgow College's Riverside Campus development. During its first few months of occupation the Riverside Campus has already started to demonstrate that, as a result of the detailed project programming and committed project delivery team, it is already working towards supporting City of Glasgow College in releasing its strategic project objectives:

- *Provide an inspiring and flexible world class learning environment that supports the College's vision to 'Inspire, Excel and Innovate';*
- *Maximise the benefits that can be derived from the new campus investment and obtain value for money from the College's commercial relationship with its NPD partner Glasgow Learning Quarter; and*
- *Maintain and improve the economic, social and environmental sustainability of the new campus.*

Initial user feedback and experience has been very positive and is testament to the dedicated project team and project management approach that was adopted for this project. As a result, a number of good practice behaviours that could positively influence future projects have been identified:

- The dedicated client side project sponsors invested significant time and resource in preparing a very detailed and comprehensive project brief. This investment benefitted the College in the longer-term as they were provided with a degree of certainty in relation to the aspirational operational performance and characteristics building and this also assisted the project delivery team in interpreting the client aims and objectives for the new Campus. This enabled the team to prepare and communicate a very detailed concept during the early competitive tendering stages of the project.
- Dedicated client sponsors were present, available and fully engaged from the initial project stages. The project delivery team agreed that the development of open, honest and constructive dialogue was key to realising a project which they believe has 'delivered something amazing' and that without this the project would have been unlikely to have been delivered as successfully.
- The importance of detailed design and detailed planning was emphasised by all project partners. The College invested time, effort and resource in creating room data sheets and a number of design mock-ups to help ensure building user requirements were adequately recorded and delivered. The College fully recognised the importance of preparing and agreeing detailed Room



Data Sheets during the project design stages and would recommend that even more time is spent communicating the importance and the required level of detail of these with all internal stakeholders. This would help to support end users in fully understanding the type of information as well as the level of detail that is required in order for these sheets to truly represent their needs.

- The College has demonstrated that well developed handover procedures and dedicated resource for staff inductions helps to ensure that all users fully engage with the building in a way that allows them to get the most from their environment. Detailed building user guides and simplified guides for individual teaching rooms has helped to educate users on their building and encourage them to exercise the correct level control over their internal environment.

As with most buildings, there are a small number of actions that could help to further enhance the overall performance and user experience:

- Building users agreed that the new building generally provided a comfortable and healthy internal and initial internal environment monitoring would largely support this. There are some areas that would benefit from more detailed monitoring over future months to ensure there is no risk of overheating or reduced user comfort levels, this includes the library space. Internal monitoring will continue and will be reviewed in more detail with the next stage of the POE project, the Functional Performance Review.
- Occupants commented that they felt the design team had successfully managed to retain some of the character of the old building whilst still delivering a truly inspiring and creative learning environment for users with what was described as state of the art facilities. Building users reported their delight as a result of the enhanced provision and variety of space which supports blended learning approaches. Timetabling for the use of this space to better match activity (such as quiet, open plan etc.) is something that could be improved going forward.
- The Riverside Campus benefits from a sophisticated BEMS system which offers a good level of monitoring and programming of building services. The College has already identified areas for enhancement which will help them to realise operational efficiencies and they will continue to work with FES FM to ensure that this happens.

Detailed monitoring and further, more detailed occupant consultation will be delivered during the Functional Performance Stage of the POE process, once the Riverside Campus and its users have experienced a full seasonal cycle, exposing the building to periods of high and low occupancy and varying weather changes.



References

City of Glasgow College New Campus – Full Business Case, Decision Point 2a (DP2a), 28 April 2011

CITY OF GLASGOW COLLEGE GLASGOW RIVERSIDE CAMPUS Reich and Hall Architects _ Michael Laird Architects available at:

http://www.reiachandhall.co.uk/Images/Project_Pages/GLQ_Riverside.pdf

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Appendix A Riverside Campus – Floor plans diagrams







Appendix B GLQ Riverside Utility Consumption – May 2016

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Appendix C Occupant feedback

Functionality

Access

Staff comments:

- Deliveries (from external printers/suppliers) has been difficult. There is lack of parking for visitors, some cases no parking at all.
- Taxi pick-ups have been a little bit confusing. Sometimes easier to be picked up and dropped off at Florence street.

There are often bottle neck problems at the ground floor lifts,

This is simply down to the security gates being too close to the lifts,

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- In general I believe the building is very accessible.
- There is a lot of space for staff which is very good however, the amount of thought space is limited.

Space

Staff comments:

- In my office the breakdown area is quite small (ground floor – corporate department section). I would like more breakout areas in the building where staff can only access (I've heard lecturing staff sometimes struggles in cafeteria to eat in place as students are constantly interrupting to ask questions about their classes).
- The large table in the atrium is fantastic – I often have meetings here as it's nice and open, but also gives you a bit of privacy.
- Classrooms are too small for some of the larger classes, 26. Not enough seats in some classes or in some classes rooms get too hot. (maths lecturer)
- Some visually impaired people coming into the building I think so much of is not accessible, there are no warnings of barriers, glass doors, etc. I think an audit with a visually impaired person would be beneficial and make the building much more inclusive. Unfortunately I can't talk about any other disability but again an audit with anyone that has a disability would be great.

Uses

Staff comments:

- As a graphic designer, the new environment has been difficult to adjust to, compared to my previous environment at Townhead (basement office which held 3-5 members of staff). As the open plan office has 30-40+ staff, loud music is definitely a no no! I often have ear phones in to focus but can miss important conversations between staff. The colleagues opposite often make



calls (sales/international) which can be quite distracting. The positives are that you are visible and you get to know about your colleagues/interact. I have adjusted to my work environment.

Build Quality

Performance

Staff comments:

- *It's a shame that there are no windows located in our office (ground floor – corporate dept). It would be nice to have the option of letting some fresh air into our office. I understand that the air comes through the vents in the floor but it makes your feet cold and it's not very powerful.*
- *When I had a cold, I found the air to be kept catching making me caught. Does air get cycled in and out?*
- *The blinds in our office have also been a problem, there isn't much control over them – either 4, or 8 blinds all come down or stay up – you can't operate just one blind.*

Systems

Staff comments:

- *There is a staff welcome guide that is produced to let all staff know how to operate all of these functions.*
- *There are how to guides on connected (our internal intranet).*
- *When staff arrived they had at their desk a welcome guide, handy tips and pocket map.*
- *There has been some IT system training. However, I don't think there is enough free time in the rooms to hav a 'play' with IT. This could be looked at in some ways for 2 weeks whilst students away and before come in.*

Impact

Urban and Social Integration

Staff comments:

- *It's hard to tell at the moment as the campus has still got buiding works going on (old nautical building).*
- *I think it will have a positive impact overall and hopehullt the surrounding area will be regenerated further.*

Internal Environment

Staff comments:

- *The overall environment is so much betetr than my previous officie. It's great to have high ceilings. It feels bright and spacious.*
- *The coffee is top quality too!*
- *The open classrooms – not sure if these are good for teaching. Maybe make these into break-out areas for satff/students.*
- *I think having break-out area away form offices/desks is betetr for meetings. Sometimes bookind a meeting room is too much hassle or I have unschedules meeting and don't want to chance it.*

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The building does give a good first impression

You come in each morning and it does give you an uplifting feeling, just because of the natural look.

Students comments:

- The building is very clean, cleaners do a great job
- Student association is really good, spend a lot of time there!

Form and Materials

Staff comments:

- The barriers can often cause blockages. People find them hard to operate with their smart cards. The barriers at the lift should maybe have been set further back to allow for queueing.

All the class rooms are easily ~~used~~ code out, so it is simple to find your way around.

Character and Innovation

Staff comments:

- There is only a college gym available at city campus. I used to use townhead gym 3 times a week for a small fee of £5 a month. I now have to pay £28 per month for Glasgow Club membership which is almost 6x as much as before.
- Innovation – had to use some of the new IT as some software not available and boards don't get used. Many lecturers back to using pens.
- I think childcare facilities should be considered for staff. It is important that family planning and future parents have facilities on-site, for peace of mind and making adjustments to returning back to work more stable/supportive. Having a work/life balance is important.
- The space, the light, the views. All of them provide a positive attitude.

Students comments:

- I would love to recommend to any friends, because the environment is good: good temperature, nice building with good facilities

Likes and dislikes



- **Please indicate the things that you really like about the building?**

Staff comments:

- *I love the brightness of the atrium and space. I have found that I feel much more part of a community with other colleagues from different departments.*
- *The technology inside is fantastic – for teaching.*
- *The wifi is good.*
- *It's open plan, welcoming construction and the facility of its use.*
- *More space*
- *Students know where to find any staff members*
- *Accessibility to colleagues. Brings people together.*
- *I like the open space*
- *The atrium*

Students comments:

- *The building is far better than the last college building*
- *The staff*
- *Security*
- *Good space*
- *Library has a lot of laptops*
- *Bike racks*
- *The building itself*
- *Classrooms*
- *Equipment available*
- *Student association*

- **Please indicate the things that you particularly dislike about the building?**

Staff comments:

- *Lunch time! Can be hard to get a seat between 12-1pm!*
- *The blinds in our office (ground floor – corporate department section)*
- *Dislike the open area staff rooms in terms of not being able to chat and interact*
- *Not enough toilet facilities*
- *I think that some of the building finishes could be better.*
- *Open classrooms*
- *Temperature / windows open etc.*
- *Where the cycle bay is located.*

- **Would you like to make any other comments about the building?**

Staff comments:

- *Might be nice to have some seating in the courtyard for when the weather is hot.*
- *More car parking facilities for staff/students/visitors.*
- *Great job and it's now time to maximise its use for students, staff and stakeholders.*
- *Building itself is a good space. However, not everything can be used due to some of the ongoing issues with IT/boards.*



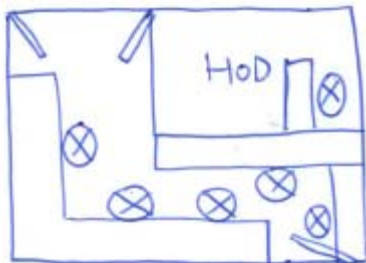
- *It's preety! It lloks impressive when we have visitors.*
- *Overall the buiding is excellent, spacious and modern.*

Students comments:

- *Wonderfull*
 - *Like a 5 star hotel*
 - *Student assiciation is better than in the old building.*
 - *Demonstration of buiding is great.*
 - *The library has a lot of space and has many laptops*
 - *Elegant*
 - *Beautifully constucted*
 - *Spacious*
 - *Good signage*
 - *Very well equiped*
- **Which part of the building do you work / study in most often?**
 - *Ground floor – corporate developemnt. (x2)*
 - *Classrooms of 4th floor workroom*
 - *3rd, 4th and 2nd floor*
 - *5th and 6th floor*
 - *5th floor and enginnering workshop*
 - *5th and 6th foor and classrooms*
 - *Ground floor and atrium*
 - *Library or student association*
 - *Library*
 - *Classroom (3.035)*
- **How does this building compare to the building you previously worked / studied in (if applicable)?**

Staff comments:

- *Townhead Campus – basement: very dark, no windows you could open, the windows had bars on too! Not many people would pass our doors. The Wi-Fi was poor. 5 macs, HOD had own office. So very different now to the new open plan office.*
- *More natural air and light which makes thinking and working easier.*



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- *Much better in every way.*

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*This building does ~~provide~~ give you
a better feeling and attitude than
previous buildings.*

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- *It's much better*
- *Stronger team dynamic within the faculty*
- *World class by comparison*

Student comments:

- *Day + Night. Much better ☺*
- *Library better than last building*
- *Student association is better than last building*
- *Cycle storage is great*
- *I was here 4 years ago and stepping into a new building was a completely new experience: security, classrooms are equipped with more technologies than before, new temperature controls, and many more..., a 'refreshing' student association*