

Sustainability Committee Meeting

Date: 25 October 2021

Time: 10:00 Hours to 12:00 Hours

AGENDA

SN	Items	Paper	Lead	Overview
1.	Apologies	NA	P. Lloyd	<ul style="list-style-type: none"> Information
2.	Draft Minutes	NA	P. Lloyd	<ul style="list-style-type: none"> Approval
3.	Action Log & Matters Arising	NA	P. Lloyd	<ul style="list-style-type: none"> Discussion Approval
4. Environmental Sustainability Action Plan (ESAP)				
4a.	Environmental Policy	SC.21/38	P. Tamuno / P. Lloyd / I. McManus	<ul style="list-style-type: none"> Information Discussion Approval
4b.	Maiden Sustainability Week: Interim Recap (Verbal)		P. Tamuno / P. Lloyd / I. McManus	<ul style="list-style-type: none"> Information Discussion
5. Teaching and Research				
5a.	The Campus as a Living Laboratory	Presentation	L. Belyea	<ul style="list-style-type: none"> Information Discussion
6. UN SDGs: Sustainability Leadership Scorecard 2020/21				
6a.	Construction and Renovation	SC.21/39	R. Halsall	<ul style="list-style-type: none"> Information Discussion Approval
6b.	Resource Efficiency and Recycling	SC.21/40	S. Keeble	<ul style="list-style-type: none"> Information Discussion Approval
6c.	Biodiversity	SC.21/41	D. Sopsisz	<ul style="list-style-type: none"> Information Discussion Approval
6d.	Student Engagement	SC.21/42	T. Stockton	<ul style="list-style-type: none"> Information Discussion Approval
6f.	Procurement and Supplier Engagement	SC.21/43	B Shahin	<ul style="list-style-type: none"> Information Discussion Approval
7. Energy Management and Road to Net Zero				
7a.	Road to Net Zero: Building Profile and Decarbonisation Opportunities	SC.21/44	L. Pasichnichenko	<ul style="list-style-type: none"> Information Discussion Assurance

SN	Items	Paper	Lead	Overview
7b.	Road to Net Zero: Energy Performance Trend	SC.21/45	P. Tamuno & G. Pritchard	<ul style="list-style-type: none"> • Information • Discussion • Assurance
8. Other Business				
8a.	Any Other Business	NA	P. Lloyd	<ul style="list-style-type: none"> • Information • Discussion • Actions
Date of Next Meeting: Monday 24 January 2022 (15:00 Hours to 17:00 Hours)				



Environmental Policy

Outcome requested:	<p>That the Sustainability Committee should:</p> <ul style="list-style-type: none"> • Endorse this updated Environmental Policy • Approve the presentation of this Policy for approval by the Senior Executive Team (SET)
Executive Summary:	<p>This updated Environmental Policy details the current environmental objectives of the Queen Mary, University of London (Queen Mary). This policy would be reviewed annually to ensure that it continues to be fit for purpose, reflects all significant areas in which we interact with the environment and would be used as the framework on which we deliver our environmental commitments and responsibilities.</p>
Alignment with: <ul style="list-style-type: none"> • QMUL Strategy • Internal Policies/Regulations • External Statutory Requirements 	<ul style="list-style-type: none"> • Queen Mary Environmental Sustainability Policy 2020 • Queen Mary's Environmental Sustainability Action Plan (2020-23) • The Environmental Protection Act 1990 • The Environment Act 1995 • The Clean Air Act 1993 • The Climate Change Act 2008 • Environmental Permitting Regulation (England and Wales) 2016
Consideration of Strategic Risks:	<ul style="list-style-type: none"> • Regulatory compliance • Reputation
Subject to Prior and Onward Approval by:	<ul style="list-style-type: none"> • Senior Executive Team (SET)
Confidentiality and Distribution:	Not Restricted
Equality Impact Assessment:	Not Applicable
Author(s) :	Philip Tamuno, Head of Sustainability
Executive Lead(s):	Ian McManus, Director of Estates, Facilities and Capital Development Philippa Lloyd, Vice Principal Strategic Partnerships
Date:	20 October 2021

Environmental Policy

Queen Mary University of London is a Russell Group University and one of the UK's lead research-focused higher education institutions. We offer our students a stimulating, supportive and high-quality learning experience, and we have a strong vision, mission and values focused on 'opening the doors of opportunity' and being the most inclusive research-intensive university in the world by 2030.

We recognise that current and emerging environmental changes are some of the greatest challenges society faces. We have a responsibility through our research, education, partnerships and operations to enhance knowledge about environmental change, maximise the societal and policy impacts of our research in this area, through our education, develop the agents and leaders of change for the future and minimise the impacts of our operations on the environment.

Our research directly feeds into our teaching. Students of law study climate change law and policy, our mathematicians model and predict the progression of environmental change, and our engineers, geographers, biologists and other scientists learn and research about mitigations. Every student at Queen Mary has the opportunity to undertake project work, and many work in multi-disciplinary teams on sustainability issues, under the leadership of our academic staff. Our students are passionate about sustainability, and are working with us to co-create our curricula and develop their own research.

This policy statement covers all activities across all our UK and Malta campuses.

We are committed to continue to improve our environmental performance and reduce our environmental impact. We commit to:

- Integrating the principles of sustainable development across all areas of our operations and academic programmes
- Protecting the environment, including prevention of pollution as well as ensure that we comply with the remits of our trade effluent permits
- Responding to adverse impacts of climate change through our operations, teaching, research and collaborations
- Delivering our six-year, 30% carbon reduction target against our 2018/19 baseline and long-term net zero aspiration by 2050
- Implementing energy efficiency and decarbonisation measures across our campuses as well as exploring all relevant sources of renewable energy generation
- Exploring and implementing initiatives that reduce the environmental and public health impacts of our travel and transportation in line with our six-year, 30% carbon reduction target
- Implementing water efficiency measures and promoting the benefits of water efficiency to reduce water use across our campuses in line with our six-year, 30% carbon reduction target
- Developing a sustainable procurement guide by July 2022 as well as continue to embedding environmental specifications into all relevant aspects of our procurement and commissioning processes
- Achieving 'Excellent' and 'Very Good' ratings from the Building Research Establishment Environmental Assessment Method (BREEAM) for all major new builds and refurbishment projects respectively
- Integrate the principles and applications of sustainable food into our catering and conferencing services
- Developing our biodiversity action plan by July 2022, improving the biodiversity across our campuses and doubling the Black Poplars across our campuses by 2030 against our 2018/19 baseline
- Integrating the waste hierarchy into our waste management processes, segregating all wastes generated across our campuses as well as maintain our no general waste to landfill status
- Using quantitative and qualitative indicators to monitor and report our environmental performances
- Fulfilling our compliance obligations including complying with all relevant environmental regulations and wherever feasible exceed these standards
- Supporting the delivery of the UN Sustainable Development Goals (SDGs) across all aspects of our operations and academic programmes
- Continue to be involved in all relevant community activities and collaborate with like-minded organisation in responding to all current and emerging environmental challenges and optimising all environmental opportunities
- Attain ISO 14001:2015 environmental management system (EMS) by July 2022 and continual improvement of our EMS to enhance our environmental performance
- Ensuring that we have adequate resources to coordinate and support the delivery of our environmental objectives
- Making this environmental policy readily available to all our staff, students and relevant stakeholders

Our environmental sustainability policy was developed under the oversight of our Sustainability Committee (with representation from the academic side, professional services and the Students' Union), and approved by our Senior Executive Team (SET). We will continue to report our progress against this policy and accompanying action plan via our governance structure.



Dr Philippa Lloyd
VP Policy and Strategic Partnerships (Chair Sustainability Committee)



Professor Colin Bailey (CBE)
President and Principal



Sustainability Leadership Scorecard: Construction, and Renovation

Outcome requested:	<p>That the Sustainability Committee should:</p> <ul style="list-style-type: none"> • Take assurance of this report • Consider issue(s) that should be escalated and • Approve this report
Executive Summary:	<p>During the 2019/20 academic year our construction and renovation Sustainability Leadership Scorecard (SLS) score was 23/32 and were optimistic to improve this score to 29/32 by the end of the 2020/21 academic year.</p> <p>We are pleased to report our 2020/21 SLS score improved to 27/32 (2 scores less than our target). We are currently working towards improve our current SLS score to 31/32 by July 2022.</p> <p>The above performance is in spite of the impact of Brexit and availability of construction materials, which imply that we eventually had to accept some compromises (which did not affect quality) to our aspirational and higher than standard specifications to ensure that projects were completed on schedule.</p> <p>Our long-term ambition is to integrate innovative building energy efficiency technologies and good environmental approaches into all our new builds and refurbishment projects.</p> <p>We will continue to use the SLS to monitor our performance against the above objectives as well as the UN Sustainable Development Goals (SDGs).</p>
Alignment with: <ul style="list-style-type: none"> • QMUL Strategy • Internal Policies/Regulations 	<ul style="list-style-type: none"> • Supporting research and innovation • Financial sustainability

• External Statutory Requirements	
Consideration of Strategic Risks:	Not Applicable
Subject to Prior and Onward Approval by:	Not Applicable
Confidentiality and Distribution:	<i>Non-restricted</i>
Equality Impact Assessment:	<i>Not Applicable</i>
Author(s) :	Richard Halsall, Assistant Director Capital Develop, Estates and Facilities
Date:	19 October 2021

Sustainability Leadership Scorecard: Construction and Renovation

Executive Summary

This report presents an overview of Queen Mary's construction and renovation environmental sustainability performances through the lens of the Sustainability Leadership Scorecard (SLS).

Construction, refurbishment and new-builds re integral aspects of our current Environmental Sustainability Action Plan (ESAP). Our immediate objectives are:

- We aim to achieve 'Excellent' ratings where possible from the Building Research Establishment Environmental Assessment Method (BREEAM) for all our major new build construction projects through formal third-party assessment.
- We aim to achieve 'Very Good' ratings where possible from the Building Research Establishment Environmental Assessment Method (BREEAM) for all our major extension, refurbishment and conversion projects through formal third-party assessment.
- We aim to achieve "Gold" ratings where possible from the RICS Ska Assessment for all major fit out projects through formal assessment.
- We aim to achieve "Silver" ratings where possible from the RICS Ska Assessment for all minor fit out, conversion, refurbishment and alteration projects through formal assessment
- We aim to achieve "Silver" ratings where possible from the RICA Ska Assessment or all small works projects , through informal self-assessment
- We will monitor the contribution of all prospective refurbishment projects towards our target of achieving 30% carbon reduction over six years.
- Contribute to Improving the DEC scores of our existing buildings during refurbishment (assuming no major energy hungry processes are introduced into these buildings (i.e. data centres etc.).
- Improve on the requirements of Part of the Building Regulations
- Meet the targets of the London Plan

Our long-term ambition is to integrate innovative building energy efficiency technologies and good environmental approaches into all our new builds and refurbishment projects.

Construction and Refurbishment at Queen Mary

The Service undertakes works broadly split into three categories:

1. Major Capital Projects: Generally above £3m in nett construction value
2. Minor Capital Projects: Generally £500k-£3m in nett construction value
3. Small Works Projects: Generally £100-500k in nett construction value

The service undertakes new build, refurbishment, conversion, adaptation and alteration projects as well as legacy interventions into life-expired building services installations that are larger than the works carried out under Long-Term Maintenance.

In all cases energy efficient fixtures and fittings are specified as standard. The building services installations to the Library and Frances Bancroft Building have been completely overhauled recently resulting in significant energy reduction (when compared to the existing plant running at the same load).

Major projects are formally assessed under the Building Research Establishment Environmental Assessment Method (BREEAM). The most recent of which included achieving a design stage excellent score for the new-build School of Business Management (building on hold following rejection of planning permission) and achieving a post construction stage excellent score for the refurbishment of the Maths Building which also recently included the shortlisting of the project for the national BREEAM 2021 awards. In addition to this achievement, we attained BREEAM Excellent score in the Fit-out and refurbishment of Empire House.

Overview of SLS results: Current scores and target scores

During the 2019/20 academic year our construction and renovation Sustainability Leadership Scorecard (SLS) score was 23/32 and were optimistic to improve this score to 29/32 by the end of the 2020/21 academic year.

We are pleased to report our 2020/21 SLS score improved to 27/32 (2 scores less than our target). We are currently working towards improve our current SLS score to 31/32 by July 2022.

The above performance is in spite of the impact of Brexit and availability of construction materials, which imply that we eventually had to accept some compromises (which did not

affect quality) to our aspirational and higher than standard specifications to ensure that projects were completed on schedule.

The Table below summarises the trend in our SLS performances in construction and renovation

Criteria	Academic Year	1	2	3	4
Policy and Strategy	2019/20	■			
	2020/21 Target	■			
	Current	■			
	2021/22 Target	■			
Stakeholder Engagement	2019/20	■			
	2020/21 Target	■			
	Current	■			
	2021/22 Target	■			
Action Planning	2019/20	■			
	2020/21 Target	■			
	Current	■			
	2021/22 Target	■			
Measurement	2019/20	■			
	2020/21 Target	■			
	Current	■			
	2021/22 Target	■			
Communication	2019/20	■			
	2020/21 Target	■			
	Current	■			
	2021/22 Target	■			
Training and Support	2019/20	■			
	2020/21 Target	■			
	Current	■			
	2021/22 Target	■			
Implementation and Performance	2019/20	■			
	2020/21 Target	■			
	Current	■			
	2021/22 Target	■			
Link to the Curriculum	2019/20	■			
	2020/21 Target	■			
	Current	■			

Criteria	Academic Year	1	2	3	4
	2021/22 Target				

Details of SLS results

1. Policy and Strategy

The institution's sustainable construction principles are aligned with the institution's Sustainability Strategy and Carbon Management Plan and supports local and national priorities. Activity is reviewed on a regular basis. There are clear reporting lines into formal institution management structures.

Current Score: 4	Target Score: 4
There is an aligned Policy for sustainable construction, reviewed regularly with clear reporting lines but not within the formal management structure.	There is an aligned Policy for sustainable construction, reviewed regularly with clear reporting lines within the formal management structure.
<p>Score Narrative:</p> <ul style="list-style-type: none"> • Sustainable construction and refurbishment is an integral aspect of our current Environmental Sustainability Action Plan (ESAP) and Environmental Sustainability Policy. • Attaining BREEAM Very Good and Excellent for all major refurbishment and new-build projects. Such as BREEAM Excellent for Maths Building • Our Construction and Refurbishment Environmental Management System (EMS) Procedure details our approach towards meeting the relevant clauses associated with ISO 14001:2015 EMS. • Attain RICS SKA Gold for all major fit out projects (Department W) • Attained BREEAM Excellent Score the recent Fit-out and refurbishment of the Empire House. 	<p>Target Narrative:</p> <ul style="list-style-type: none"> • Maintain current performances • Services and Commissioning Manager (Richard Frost) becomes a certified a SKA Assessor

2. Stakeholder Engagement

Key stakeholders (including contractors, suppliers, sub-contractors, service providers and building occupiers) actively inform the review of sustainable construction practices through

appropriate post occupancy evaluation and shape the future development of the institution's built environment.

Current Score: 4	Target Score: 4
Relevant stakeholders are actively informing the review of the Policy and help shape its development. The Policy is leading good practice.	Relevant stakeholders are actively informing the review of the Policy and help shape its development. The Policy is leading good practice.
<p>Score Narrative:</p> <ul style="list-style-type: none"> • Identify key stakeholders through the life of the project • All relevant stakeholders are involved in the review of all our refurbishment and new-builds proposals via our Estate Strategy Board (ESB). The ESB is chaired by our President and Principal • Sustainable construction and refurbishment is a standing item in the agenda of our quarterly Sustainability Committee meetings. The membership of our Sustainability Committee reflects all stakeholders across our University. • SPD for the Mile End Masterplan (Supplementary Planning Document) now embedded into London Borough of Tower Hamlet Planning Policy 	<p>Target Narrative:</p> <ul style="list-style-type: none"> • Maintain our current performance and continue to engage with all relevant stakeholders

3. Action Planning

Action Plans, which incorporate objectives and associated targets, drive activity across the institution in relation to sustainable construction.

Current Score: 3	Target Score: 4
Action plans incorporate objectives but little evidence of driving activity across the institution.	Action plans incorporate objectives and associated targets and clearly demonstrate activity across the institution.
<p>Score Narrative:</p> <ul style="list-style-type: none"> • We are meeting the BREEM and SKA targets for major projects (over £3 million). 	<p>Target Narrative:</p> <ul style="list-style-type: none"> • Include targets for minor projects (less than £3 million)

Current Score: 3	Target Score: 4
<ul style="list-style-type: none"> Developing sustainability plans for Campus strategic infrastructure (Mile End and Charterhouse Square) over the next two years. These will be aligned with the London Plan. 	<ul style="list-style-type: none"> Services and Commissioning Manager (Richard Frost) becomes a certified a SKA Assessor

4. Measurement

The impacts and benefits of the sustainable design and construction are routinely monitored and evaluated as part of existing institution practices, including post occupancy evaluations.

Current Score: 3	Target Score: 4
All impacts and benefits of the Policy are formally routinely monitored and evaluated as part of existing institutional practices. There is some limited evidence of continual improvement and feed-back loops.	All impacts and benefits of the Policy are routinely monitored and evaluated as part of existing institutional practices. There is significant evidence of continual improvement and feed-back loops.
Score Narrative: <ul style="list-style-type: none"> One of our recent projects (Mathematics Building) have been short-listed for a BREEAM award. SKA Gold Department W On tract BREEAM Very Good for Library Extension SKA Silver for Library Ground Floor Refurbishment. This was the best that we could attain at the time due to time constraints CVD (Robin Brook Centre) aiming SKA Silver. This is the most that can be achieved because this is an old rented building with numerous challenges 	Target Narrative: <ul style="list-style-type: none"> Continue to collate evidences and embed good practices into all our minor and major construction works.

5. Communication

The principles are in the public domain. There is a planned approach to communicating to relevant stakeholders those principles, including development staff, suppliers and contractors. The principles have clear, high-level support within the institution.

Current Score: 4	Target Score: 4
There is a Policy with clear high level support and a formal communication	There is a Policy with clear high level support and a formal communication

Current Score: 4	Target Score: 4
approach with all stakeholders to be found in the public domain.	approach with all stakeholders to be found in the public domain.
<p>Score Narrative:</p> <ul style="list-style-type: none"> • Our environmental sustainability action plan (ESAP 2020-23) and environmental sustainability policy (2020) are available in the public domain • Our 2019/20 environmental sustainability annual report which contain highlights our environmental sustainability performances is also available in the public domain. 	<p>Target Narrative:</p> <ul style="list-style-type: none"> • Maintain current performances

6. Training and Support

Commitments are linked to named individuals or teams within the institution who are responsible for identifying and managing opportunities to implement sustainable construction, design and retrofit solutions. Staff have either appropriate sustainability and/or design and construction management skills and knowledge, or opportunities to develop them through access to specialist support.

Current Score: 3	Target Score: 4
A clear training and support programme is in place for all staff.	All key staff have the appropriate training, knowledge and skills. All staff are aware of opportunities available to them. Staff are supported through access to specialist support where and when required.
<p>Score Narrative:</p> <ul style="list-style-type: none"> • We have continued to provide relevant CPD training opportunities to all members of our Capital Project Team • We offer all our staff an opportunity to undertake a CPD course on Environmental Sustainability Skills for the Workforce • We also bespoke environmental compliance training sessions to all relevant staff 	<p>Target Narrative:</p> <ul style="list-style-type: none"> • Services and Commissioning Manager (Richard Frost) becomes a certified a SKA Assessor

7. Implementation and Performance

There is evidence of staff and student-led initiatives promoting sustainable building use across the institution and beyond via the Student Union, student societies, staff groups, trade unions or individual sustainability champions. Performance is reviewed and there is evidence of continual improvement and feedback loops.

Current Score: 2	Target Score: 3
There is good evidence of staff and student-led initiatives which are restricted to student groups or sustainability champions but not across all of the institution.	There is good evidence of staff and student-led initiatives across the institution but it does not go beyond the institution.
Score Narrative: <ul style="list-style-type: none"> • Via Project Board and ESB. The Students' Union and the BLSA Presidents are Members of the ESB • Vice Presidents sit in our Project Boards • Coordinator of Environmental Champions are members of our SC 	Target Narrative: <ul style="list-style-type: none"> • Increase opportunities for wider members of our community to be involved in the implementation and reviewing our performances.

8. Link to the Curriculum

Sustainable design and construction practices link to, and where appropriate, are embedded into formal and informal curriculum and research.

Current Score: 3	Target Score: 4
There is a draft Policy or senior commitment to drafting a Policy which ensures that practice is linked, where appropriate, and embedded into all formal and informal curriculum and research.	There is a ratified Policy which ensures that practice is linked to and where appropriate embedded into all formal and informal curriculum and research.
Score Narrative: <ul style="list-style-type: none"> • We currently offer all our Students opportunity to enrol for an optional module on sustainable development 	Target Narrative: <ul style="list-style-type: none"> • Capital Project Team offer examples of sustainable interventions within its projects to assist in teaching of the sustainable elements of the curriculum. • The current Graduate Attribute work-stream would support the delivery of our commitment of integrating sustainable development into all our academic offerings

Conclusion and Recommendation

We will continue to monitor our performance against our ESAP as well as the UN SDGs.

That the Sustainability Committee should:

- Take assurance of this performance report
- Consider issue(s) that should be escalated and
- Approve this report



Sustainability Leadership Scorecard: Resource Efficiency and Recycling

Outcome requested:	That the Sustainability Committee should: <ul style="list-style-type: none"> • Take assurance of this report • Consider issues that should be escalated and • Approve this report
Executive Summary:	<p>This report presents a summary of the Queen Mary's Resource Efficiency and Recycling performances based on the Sustainability Leadership Scorecard (SLS). This report covers the 2020/21 academic year.</p> <p>Previous Score</p> <p>The score for 2019/20 was 22/32, the target score for 31 July 2021 was 26/32. The key area for improvement was Action Planning.</p> <p>Current and Predicted Score</p> <p>The score for the 2020/21 academic year is 24/32 and the target score for 31 July 2022 based on planned activities is 28/32, which we predict will be more achievable due to a return to more normal working practices.</p>
Consideration of Strategic Risks:	<i>Not Applicable</i>
Subject to Prior and Onward Approval by:	<i>Not Applicable</i>
Confidentiality and Distribution:	<i>Non-restricted</i>
Equality Impact Assessment:	<i>Not Applicable</i>
Author(s) :	Scott Keeble, Assistant Facility Manager, Estates and Facilities
Date:	21 October 2021

Sustainability Leadership Scorecard: Resource Efficiency and Recycling

Overview of SLS results: Current scores and target scores

This report presents a summary of the Queen Mary's Resource Efficiency and Recycling performances based on the Sustainability Leadership Scorecard (SLS). This report covers the 2020/21 academic year.

Previous Score

The score for 2019/20 was 22/32, the target score for 31 July 2021 was 26/32. The key area for improvement was Action Planning.

Current and Predicted Score

The score for the 2020/21 academic year is 24/32 and the target score for 31 July 2022 based on planned activities is 28/32, which we predict will be more achievable due to a return to more normal working practices.

Criteria	Academic Year	1	2	3	4
Policy and Strategy	2019/20				
	2020/21 Target				
	Current				
	2021/22 Target				
Stakeholder Engagement	2019/20				
	2020/21 Target				
	Current				
	2021/22 Target				
Action Planning	2019/20				
	2020/21 Target				
	Current				
	2021/22 Target				
Measurement	2019/20				
	2020/21 Target				

Criteria	Academic Year	1	2	3	4
	Current	█			
	2021/22 Target	█			
Communication	2019/20	█			
	2020/21 Target	█			
	Current	█			
	2021/22 Target	█			
Training and Support	2019/20	█			
	2020/21 Target	█			
	Current	█			
	2021/22 Target	█			
Implementation and Performance	2019/20	█			
	2020/21 Target	█			
	Current	█			
	2021/22 Target	█			
Link to the Curriculum	2019/20	█			
	2020/21 Target	█			
	Current	█			
	2021/22 Target	█			

Details of SLS results

1. Policy and Strategy

The Institution's Resource and Waste Management Strategy is aligned with the institutions carbon Management strategy and supports local and national priorities. Activity is reviewed on a regular basis. There are clear reporting lines into formal institution management structures.

Current Score: 3	Target: 4
There is an aligned Policy regarding resource and waste, reviewed regularly with clear reporting lines but not within the formal management structure.	There is an aligned Policy regarding resource and waste reviewed regularly with clear reporting lines within the formal management structure.
Score Narrative: Queen Mary's waste management strategy have been written and will be regularly review at by the sustainability committee meetings.	Target Narrative: Update the current strategy and align it with Queen Mary's environmental sustainability action plan (ESAP)

2. Stakeholder Engagement

Key stakeholders (including staff, students and contractors) actively inform the review of the Resource and Waste Management Strategy and shape its development. Development of the Strategy emulates or begins best practice.

Current Score: 4	Target: 4
Relevant stakeholders are actively informing the review of the Policy and help shape its development. The Policy is leading good practice.	Relevant stakeholders are actively informing the review of the Policy and help shape its development. The Policy is leading good practice.
Score Narrative: The waste management procedure is coordinated by the Assistant Facilities Manager with the support of the Environmental Associates and Colleagues across the Health and Safety Directorate.	Target Narrative: This procedure will continued to be reviewed under the guidance of the Sustainability Committee.

3. Action planning

Action Plans, which incorporate objectives and associated targets, drive activity across the institution in relation to resource efficiency and Waste

Current Score: 3	Target: 4
Action plans incorporate objectives but little evidence of driving activity across the institution.	Action plans incorporate objectives and associated targets and clearly demonstrate activity across the institution.
Score Narrative: Objectives and targets incorporated into Queen Mary's ESAP and Environmental Policy.	Target Narrative: Bywaters (Queen Mary's appointed non-hazardous waste collection service contractor) have now started returning to campus and can complete across campus giving feedback and helping to install initiatives. Action plan to take place in the monthly meetings and updates provided.

4. Measurement

The impacts and benefits of the Resource and Waste Management strategy are routinely monitored and evaluated as part of existing institution practice. There is evidence of continual improvement and feedback loops.

Current Score: 2	Target: 3
Many impacts and benefits of the Policy are formally routinely monitored as part of existing institutional practices.	All impacts and benefits of the Policy are formally routinely monitored and evaluated as part of existing institutional practices. There is some limited evidence of continual improvement and feed-back loops.
Score Narrative: Most of the waste streams within the waste process document are routinely monitored.	Target Narrative: To ensure that all waste streams are regularly monitored and appropriately managed <ul style="list-style-type: none"> • Begin to implement routine monitoring of all waste streams. Provide feedback at the contractor meetings to find ways to improve. • The feedbacks from stakeholders within the Sustainability Committee will be used to improve the current processes

5. Communication

The Resource and Waste management Strategy is in the public domain. There is a planned approach to communicating the strategy to relevant stakeholders together with its associated activities and their implications. The strategy has clear, high-level support within the institution.

Current Score: 4	Target: 4
There is a policy with clear high level support and a formal communication approach with all stakeholders.	There is a policy with clear high level support and a formal communication approach with all stakeholders.
Score Narrative: The ESAP, hazardous waste and non-hazardous waste environmental management procedure are accessible in the public domain.	Target Narrative: Maintain the current performance

6. Training and Support

Commitments and/or targets are linked to named individuals or teams within the institution. Staff have either appropriate waste management skills and knowledge, or opportunities to develop them through access to specialist support.

Current Score: 3	Target: 4
A clear training and support programme is in place for all staff.	All key staff have the appropriate training, knowledge and skills. All staff are aware of

Current Score: 3	Target: 4
	opportunities available to them. Staff are supported through access to specialist support where and when required
<p>Score Narrative:</p> <p>There is a training support programme in place to ensure all colleagues have the appropriate level of waste management training.</p>	<p>Target Narrative:</p> <ul style="list-style-type: none"> • Ensure all staff have completed all relevant waste management training for their role. • Ensure any colleagues missing training are on the next available courses. • Ensure all colleagues are booked onto any refresher training should they need it.

7. Implementation and performance

There is evidence of staff and student-led waste reduction initiatives across the institution and beyond via the Student Union, student societies, staff groups, trade unions or individual sustainability champions. Performance is reviewed and there is evidence of continual improvement and feedback loops.

Current Score: 3	Target: 4
There is good evidence of staff and student-led initiatives across the institution, but it does not go beyond the institution.	There is good evidence of staff and student-led initiatives promoting the Policy across the institution and beyond the institution.
<p>Score Narrative:</p> <p>There is evidence of initiatives such as new composting bays for compostable food and garden waste across the institution but not beyond.</p>	<p>Target Narrative:</p> <ul style="list-style-type: none"> • Ensure all new initiatives are planned and promoted across Queen Mary where possible. • Initialise initiatives promoting the waste management processes to all internal and external stakeholders.

8. Link to the Curriculum

Waste management and reduction and resource links to, and where appropriate is embedded into the formal and informal curriculum activity.

Current Score: 3	Target: 4
There is a draft Policy or senior commitment to drafting a Policy which ensures that practice is linked, where appropriate, and embedded into	There is a ratified Policy which ensures that practice is linked to and where appropriate

Current Score: 3	Target: 4
all formal and informal curriculum and research.	embedded into all formal and informal curriculum and research.
Score Narrative: There is an environmental sustainability policy in which waste management is included which is linked to curriculum and research.	Target Narrative: To use the current graduate attribute review process to integrate waste management and education for sustainable development into all our academic offerings.

Conclusion and Recommendation

We will continue to monitor our performance against our ESAP as well as the UN SDGs.

That the Sustainability Committee should:

- Take assurance of this performance report
- Consider issue(s) that should be escalated and
- Approve this report



Sustainability Leadership Scorecard: Biodiversity

Outcome requested:	<p>That the Sustainability Committee should:</p> <ul style="list-style-type: none"> • Take assurance of this report • Consider issues that should be escalated and • Approve this report
Executive Summary:	<p>This report presents an overview of Queen Mary's Biodiversity performance through the lens of the Sustainability Leadership Scorecard (SLS).</p> <p>Our current (2020/21) construction and renovation SLS score is 29/32. We are optimistic that we will be able to increase this score to 31/32 by the end of the current academic year. This is an improvement from the 24/32 score we attained at the end of the 2019/20 academic year.</p> <p>Biodiversity is integral aspects of our current Environmental Sustainability Action Plan (ESAP). Our immediate objectives are:</p> <ul style="list-style-type: none"> • To review and update our current Biodiversity Action Plan • We will monitor and evaluate our current management practices and make steps towards improvement where needed • Extend our biodiversity related network within and beyond the institute. <p>Our long-term ambition is to become a leader in biodiversity enhancement and policy making nationally and internationally.</p>
Consideration of Strategic Risks:	<i>Not Applicable</i>
Subject to Prior and Onward Approval by:	<i>Not Applicable</i>
Confidentiality and Distribution:	<i>Non-restricted</i>
Equality Impact Assessment:	<i>Not Applicable</i>

Author(s) :	Dimitrisz Sopisz, Grounds and Gardens Supervisor
Date:	15 October 2021

Sustainability Leadership Scorecard: Biodiversity

Executive Summary

This report presents an overview of Queen Mary's Biodiversity performance through the lens of the Sustainability Leadership Scorecard (SLS).

Our current (2020/21) construction and renovation SLS score is 29/32. We are optimistic that we will be able to increase this score to 31/32 by the end of the current academic year. This is an improvement from the 24/32 score we attained at the end of the 2019/20 academic year.

Biodiversity is integral aspects of our current Environmental Sustainability Action Plan (ESAP). Our immediate objectives are:

- To review and update our current Biodiversity Action Plan
- We will monitor and evaluate our current management practices and make steps towards improvement where needed
- Extend our biodiversity related network within and beyond the institute.

Our long-term ambition is to become a leader in biodiversity enhancement and policy making nationally and internationally.

Biodiversity at Queen Mary

Biodiversity activities have been actively encouraged through various environmental enhancement projects.

- Wildflower meadow: This 250m² area is located at Westfield Way and Arts 1 building. The meadow consists of ten different type of wildflowers and over 5000 flower bulbs
- Community orchard: The orchard is in the student village and made up by 30 apple and 30 pear trees.
- `Bug hotels` and hedgehog houses: They are made by using natural materials and can be found at various locations across on the Mile End Campus.

- Community allotment: Five raised wooden beds are located in the student village and used for growing seasonal vegetables and herbs. These produce can be picked and used by students, staff and visitors.

Overview of SLS results – current scores and target scores

Each Framework Area is assessed against eight criteria. The table below details our current biodiversity SLS as well as our anticipated scores by 31 July 2022.

Improvement of our current scores are based on our plans to:

Criteria	Academic Year	1	2	3	4
Policy and Strategy	2019/20 Score	■			
	2020/21 Target	■			
	Current Score	■			
	2021/22 Target	■			
Stakeholder Engagement	2019/20 Score	■			
	2020/21 Target	■			
	Current Score	■			
	2021/22 Target	■			
Action Planning	2019/20 Score	■			
	2020/21 Target	■			
	Current Score	■			
	2021/22 Target	■			
Measurement	2019/20 Score	■			
	2020/21 Target	■			
	Current Score	■			
	2021/22 Target	■			
Communication	2019/20 Score	■			
	2020/21 Target	■			
	Current Score	■			
	2021/22 Target	■			
Training and Support	2019/20 Score	■			
	2020/21 Target	■			
	Current Score	■			
	2021/22 Target	■			
Implementation and Performance	2019/20 Score	■			
	2020/21 Target	■			
	Current Score	■			

Criteria	Academic Year	1	2	3	4
	2021/22 Target				
Link to the Curriculum	2019/20 Score				
	2020/21 Target				
	Current Score				
	2021/22 Target				

1. Policy and Strategy

The institution's Biodiversity Action Plan is produced in support of local and national priorities. Activity is reviewed on a regular basis. There are clear reporting lines into formal institution management structures.

Current Score: 4	Target Score: 4
There is an aligned Policy on Biodiversity, reviewed regularly with clear reporting lines within the formal management structure.	There is an aligned Policy on Biodiversity, reviewed regularly with clear reporting lines within the formal management structure.
Score Narrative: <ul style="list-style-type: none"> To review and update our current Biodiversity Action Plan We will monitor and evaluate our current management practices and make steps towards improvement where needed 	Target Narrative: <ul style="list-style-type: none"> Extend our biodiversity related network within and beyond the institute

2. Stakeholder Engagement

Key stakeholders (including staff, students and contractors) actively inform the review of the Biodiversity Action Plan and shape its development.

Current Score: 3	Target Score: 4
Not all relevant stakeholders are actively involved in the Policy review.	Relevant stakeholders are actively informing the review of the Policy and help shape its development. The Policy is leading good practice.
Score Narrative: <ul style="list-style-type: none"> We are actively working with students and staff but at present moment there are not actively involved in the Policy reviewing yet. 	Target Narrative: <ul style="list-style-type: none"> Keep continuous and close work relationship with stakeholders and encouraging them to actively take part of the Biodiversity Policy review

3. Action Planning

Action Plans, which incorporate objectives and associated targets, drive the cycles of activity across the institution in relation to biodiversity.

Current Score: 4	Target Score: 4
Action plans incorporate objectives and associated targets and clearly demonstrate activity across the institution.	Action plans incorporate objectives and associated targets and clearly demonstrate activity across the institution.
Score Narrative: <ul style="list-style-type: none"> Keep working towards our objectives and targets 	Target Narrative: <ul style="list-style-type: none"> We will continue working with other academic and non-academic departments to enhance the biodiversity on every Campus

4. Measurement

The impacts and benefits of the Biodiversity Action Plan are routinely monitored and evaluated as part of existing institution practice. There is evidence of continual improvement and feedback loops.

Current Score: 4	Target Score: 4
All impacts and benefits of the Policy are routinely monitored and evaluated as part of existing institutional practices. There is significant evidence of continual improvement and feed-back loops.	All impacts and benefits of the Policy are routinely monitored and evaluated as part of existing institutional practices. There is significant evidence of continual improvement and feed-back loops.
Score Narrative: <ul style="list-style-type: none"> The Biodiversity policy is part of the wider Environmental Sustainability Action Plan. We are engaged with scientific academic departments to be able to measure the outcome of our biodiversity enhancement efforts. 	Target Narrative: <ul style="list-style-type: none"> Record scientific evidences which will support and show the benefits of our Biodiversity Action plan.

5. Communication

The Biodiversity Action Plan is in the public domain. There is a planned approach to communicating to relevant stakeholders the Action Plan, its associated activities and their implications. The Action Plan has clear, high-level support within the institution.

Current Score: 4	Target Score: 4
There is a Policy with clear high level support and a formal communication approach with all stakeholders to be found in the public domain	There is a Policy with clear high level support and a formal communication approach with all stakeholders to be found in the public domain
Score Narrative: <ul style="list-style-type: none"> We are actively engaged with academic departments and student union through various activities and projects The Regenerative Horticulture Practices used at Queen Mary were presented at two webinars. 	Target Narrative: <ul style="list-style-type: none"> We are planning to publish the outcome of our various projects.

6. Training and Support

Commitments and/or targets are linked to named individuals or teams within the institution. Staff have either appropriate biodiversity skills and knowledge, or opportunities to develop them through access to specialist support.

Current Score: 3	Target Score: 4
A clear training and support programme is in place for all staff.	All key staff have the appropriate training, knowledge and skills. All staff are aware of opportunities available to them. Staff are supported through access to specialist support where and when required.
Score Narrative: <ul style="list-style-type: none"> We have continued to provide relevant CPD training opportunities to all members of our Grounds Team We offer all our staff an opportunity to undertake a CPD course on Environmental Sustainability Skills for the Workforce We also offer environmental and horticulture related course opportunities to all member of our Grounds Team. 	Target Narrative: <ul style="list-style-type: none"> We will actively encourage all member of staff to take part various specialist trainings.

7. Implementation and Performance

There is evidence of staff and student-led biodiversity activity across the institution and beyond via the Student Union, student societies, staff groups, trade unions or individual sustainability champions. Performance is reviewed and there is evidence of continual improvement and feedback loops.

Current Score: 4	Target Score: 4
There is good evidence of staff and student-led initiatives promoting the Policy across the institution and beyond the institution.	There is good evidence of staff and student-led initiatives promoting the Policy across the institution and beyond the institution.
Score Narrative: <ul style="list-style-type: none"> • We offer a wide range of opportunities for students and staff, such as <ul style="list-style-type: none"> ○ Green Mary Gardens ○ Sensory and medicinal Garden ○ Regents Canal Cleaning ○ Garden Volunteering • We actively taking part at local events such as Commemorative tree planting 	Target Narrative: <ul style="list-style-type: none"> • We will continue seeking engagements with local and wider community through various initiative.

8. *Link to the Curriculum*

Biodiversity practice links to, and where appropriate, is embedded into formal and informal curriculum activity.

Current Score: 3	Target Score: 4
There is a draft Policy or senior commitment to drafting a Policy which ensures that practice is linked, where appropriate, and embedded into all formal and informal curriculum and research.	There is a ratified Policy which ensures that practice is linked to and where appropriate embedded into all formal and informal curriculum and research.
Score Narrative: <ul style="list-style-type: none"> • We currently offer all our Students opportunity to take part various environment and horticulture related activities. • We actively create new opportunities and policies to ensure our activities are embedded into all formal and informal curriculum and research 	Target Narrative: <ul style="list-style-type: none"> • We continuously engage with academics to enable practices to be embedded into all formal and informal curriculum and research

Conclusion and Recommendation

We will continue to monitor our performance against our ESAP as well as the UN SDGs.

That the Sustainability Committee should:

- Take assurance of this performance report

- Consider issue(s) that should be escalated and
- Approve this report



Sustainability Leadership Scorecard: Student Engagement

Outcome requested:	That the Sustainability Committee should: <ul style="list-style-type: none"> • Take assurance of this report • Consider issues that should be escalated and • Approve this report
Executive Summary:	<p>This report presents an overview of Queen Mary's Student Engagement through the lens of the Sustainability Leadership Scorecard (SLS). This report refers to the 2020/21 academic year.</p> <p>Previous Score</p> <p>The score for 2019/20 was 26/32, the target score for 31 July 2022 at this stage was 32/32. The key area for improvement was: Link to the Curriculum.</p> <p>Current and Predicted Score</p> <p>The score for 2020/21 is 26/32, the target score for 31 July 2022 based on planned activities is 31/32. Due to the impacts of the COVID-19 pandemic, this target score has been revised down compared to the previous assessment. The key area identified for improvement is: Link to the Curriculum.</p>
Consideration of Strategic Risks:	<i>Not Applicable</i>
Subject to Prior and Onward Approval by:	<i>Not Applicable</i>
Confidentiality and Distribution:	<i>Non-restricted</i>
Equality Impact Assessment:	<i>Not Applicable</i>
Author(s) :	Tom Stockton, Sustainability Coordinator, Students' Union
Date:	8 October 2021

Sustainability Leadership Scorecard: Student Engagement

Overview of SLS results – current scores and target scores

Each Framework Area is assessed against eight criteria. The table below details the assessment of the Sustainability Coordinator, based within the University Sustainability Team and Students' Union Student Engagement Team against the definitions provided, allocating a score for current progress and where we hope to get to by 31 July 2022.

Previous Score

The score for 2019/20 was 26/32, the target score for 31 July 2022 at this stage was 32/32. The key area for improvement was: Link to the Curriculum.

Current and Predicted Score

The score for 2020/21 is 26/32, the target score for 31 July 2022 based on planned activities is 31/32. Due to the impacts of the COVID-19 pandemic, this target score has been revised down compared to the previous assessment. The key area identified for improvement is: Link to the Curriculum.

Criteria	Academic Year	1	2	3	4
Policy and Strategy	2019/20	■			
	2020/21 Target	■			
	Current	■			
	2021/22 Target	■			
Stakeholder Engagement	2019/20	■			
	2020/21 Target	■			
	Current	■			
	2021/22 Target	■			
Action Planning	2019/20	■			
	2020/21 Target	■			
	Current	■			
	2021/22 Target	■			
Measurement	2019/20	■			
	2020/21 Target	■			

Criteria	Academic Year	1	2	3	4
	Current	■			
	2021/22 Target	■			
Communication	2019/20	■			
	2020/21 Target	■			
	Current	■			
	2021/22 Target	■			
Training and Support	2019/20	■			
	2020/21 Target	■			
	Current	■			
	2021/22 Target	■			
Implementation and Performance	2019/20	■			
	2020/21 Target	■			
	Current	■			
	2021/22 Target	■			
Link to the Curriculum	2019/20	■			
	2020/21 Target	■			
	Current	■			
	2021/22 Target	■			

Details of SLS results

1. Policy and Strategy

The institution's strategies for student engagement are well developed and aligned with institution social responsibility and sustainability strategies to maximise impact. This includes employment and other post graduate opportunities. Activity is reviewed on a regular basis. There are clear reporting lines into formal institution management structures.

Current Score: 3	Target: 4
There is an aligned Policy for engaging students, reviewed regularly with clear reporting lines but not within the formal management structure.	There is an aligned Policy for engaging students, reviewed regularly with clear reporting lines within the formal management structure. The policy includes support for employment and other post graduate opportunities.
Score Narrative: Queen Mary Students' Union's Strategic Plan 2020 features sustainability includes	Target Narrative: The Students' Union Strategic Plan is due for review this year, there are opportunities to

Current Score: 3	Target: 4
<p>commitments to champion sustainability and social impact, enabling students to be socially responsible and active participants in their communities.</p> <p>Further, the Students' Union as a student led organisation commits to being recognised as an ethical and sustainable organisation. These commitments carry associated KPIs monitored annually.</p> <p>The Queen Mary Environmental Sustainability Action Plan 2020-2023 includes commitments to offer opportunities for students to interact with sustainability through engagement events, the EcoCampus online Sustainable Development module, academic research projects and integration into the curriculum.</p>	<p>further align student engagement aims included with the Queen Mary Sustainability Action Plan for a consistent strategic approach.</p> <p>Further work to link up employability and careers development offerings across the Students' Union and University with sustainability priorities in a more strategic fashion can be explored.</p> <p>Opportunities exist to ensure sustainability is substantively referred to in the University's teaching and learning plans and/or graduate attributes.</p>

2. Stakeholder Engagement

Key stakeholders (including staff and students) review this activity and shape its development.

Current Score: 3	Target: 4
<p>Not all relevant stakeholders are actively involved in the Policy review.</p>	<p>Relevant stakeholders are actively informing the review of the Policy and help shape its development. The Policy is leading good practice.</p>
<p>Score Narrative:</p> <p>Significant engagement with staff and students informs Students' Union strategic priorities. Furthermore, students are key to shaping the delivery and progress against strategic aims through our student representative system which incorporates over 70 full and part time student representatives.</p>	<p>Target Narrative:</p> <p>We will ensure that the upcoming development of the new Students' Union Strategic Plan is informed by high levels of meaningful stakeholder engagement.</p> <p>The University will ensure that the development of a longer-term Sustainability Strategy to follow on from Sustainability Action Plan, especially aspects relating to engagement, is informed by meaningful</p>

Current Score: 3	Target: 4
	engagement with students, staff and the wider community.

3. Action planning

Action Plans, which incorporate objectives and associated targets, drive the cycles of activity across the institution. This includes the development of mutually beneficial links between student engagement and sustainability.

Current Score: 4	Target: 4
Action plans for student engagement incorporate objectives and associated targets and clearly demonstrate activity across the institution.	Action plans for student engagement incorporate objectives and associated targets and clearly demonstrate activity across the institution.
<p>Score Narrative:</p> <p>Queen Mary Students' Union has objectives within the Student Engagement sections of the Students' Union Strategic Plan. Milestones, clear targets and deadlines are established, and progress is recorded through annual monitoring. They regularly demonstrate outcomes relating to sustainability.</p> <p>Reporting on these outcomes and the ability to refresh action plans for 2021/22 were limited by uncertainty related to the COVID-19 pandemic. However, established structures remain in place to monitor targets and objectives.</p>	<p>Target Narrative:</p> <p>A revised set of objectives and targets for Student Engagement within Students' Union activities will be developed in line with the new Strategic Plan.</p>

4. Measurement

The impacts and benefits of student engagement are routinely monitored and evaluated as part of existing institution practice. Student satisfaction is routinely measured and monitored across the institution. There is evidence of continual improvement and feedback loops.

Current Score: 3	Target: 4
All impacts and benefits of the Policy are formally routinely monitored and evaluated as part of existing institutional practices. Student feedback is routine but there is some limited	All impacts and benefits of the Policy are routinely monitored and evaluated as part of existing institutional practices. Student satisfaction is routinely measured and

Current Score: 3	Target: 4
evidence of continual improvement and feed-back loops.	monitored across the institution. There is significant evidence of continual improvement and feed-back loops.
<p>Score Narrative:</p> <p>Feedback mechanisms are regularly employed to evaluate student engagement activities such as student group & society activities, volunteering in the community, sustainability, and employability projects across the Students' Union's operations. These mechanisms are used to inform reporting on Key Performance Indicators as part of the Strategic Plan.</p>	<p>Target Narrative:</p> <p>There are opportunities to embed sustainability into wider existing university evaluation mechanisms such as course evaluation surveys, staff surveys, adding sustainability as an optional NSS question, or in alumni surveys to develop a wider evidence base of the ways in which students engage with sustainability at Queen Mary.</p>

5. Communication

The strategies are in the public domain. There is a planned approach to communicating to relevant stakeholders the strategies, associated activities and their implications. The agenda has clear, high-level support within the institution.

Current Score: 4	Target: 4
There is a Policy for student engagement with clear high level support and a formal communication approach with all stakeholders to be found in the public domain.	There is a Policy for student engagement with clear high level support and a formal communication approach with all stakeholders to be found in the public domain.
<p>Score Narrative:</p> <p>The Environmental Sustainability Policy, Sustainability Action Plan 2020-23 and Students' Union Strategic Action Plan are available in the public domain.</p> <p>Annual reporting will accompany the Sustainability Action Plan. The first annual report was completed for 2019/20.</p>	<p>Target Narrative:</p> <p>The KPIs underpinning the Sustainability Action Plan continue to be developed and are not yet in the public domain.</p> <p>We will explore opportunities to formalise the communication approach to communicating sustainability across the institution.</p>

6. Training and Support

Commitments and/or targets are linked to named individuals or teams within the institution. Staff have either appropriate sustainability skills and knowledge, or opportunities to develop them through access to specialist support.

Current Score: 3	Target: 4
A clear training and support programme is in place for all staff to support them in engaging effectively with students on issues related to sustainability.	All key staff have the appropriate training, knowledge and skills for engaging effectively with students on issues related to sustainability. All staff are aware of opportunities available to them. Staff are supported through access to specialist support where and when required.
<p>Score Narrative:</p> <p>We have expanded opportunities available to all staff through training opportunities through the University's corporate partnership with the Institute for Environmental Management (IEMA) and partnership with EcoCampus.</p> <p>There is a central Professional Development team with a core offering of professional development available to all staff. This is communicated to all staff with clear guidance.</p>	<p>Target Narrative:</p> <p>We will explore further opportunities to provide student engagement training for staff less experienced in this area but knowledgeable about sustainability.</p>

7. Implementation and performance

There is evidence of student engagement activity across the institution and beyond through the Student Union, student societies, volunteering programmes, staff groups, trade unions or individual sustainability champions. Performance is reviewed and there is evidence of continual improvement and feedback loops.

Current Score: 4	Target: 4
There is good evidence of staff and student-led initiatives promoting the Policy across the institution and beyond the institution.	There is good evidence of staff and student-led initiatives promoting the Policy across the institution and beyond the institution.
<p>Score Narrative:</p> <p>There is good evidence of staff and student led initiatives through the Students' Union societies, volunteering in the community and</p>	<p>Target Narrative:</p> <p>There are opportunities for improvement in evidencing feedback loops and linking lower-level activity to the Policy's key features.</p>

Current Score: 4	Target: 4
staff Environmental Sustainability. Outcomes are captured and reviewed within Students' Union and Sustainability Action Plan reporting mechanisms.	

8. Link to the curriculum

Students are actively encouraged to be involved in curriculum development and to support the process of embedding education for sustainable development (ESD) at programme level. Students are engaging with Living Labs concepts and initiatives.

Current Score: 2	Target: 3
Practice is formally linked to and embedded into some elements of curriculum or research.	There is a ratified Policy which ensures that practice is linked to and where appropriate embedded into all formal and informal curriculum and research. Students are engaging with Living Labs concepts and initiatives.
<p>Score Narrative:</p> <p>The Environmental Sustainability Policy commits to embedding the principles of sustainable development and good environmental practices into our teaching, research and other academic activities.</p> <p>Individual subject areas deliver localised good practice which has been showcased at 2020/21 meetings of the sustainability committee. However, the approach to embedding education for sustainable development (ESD) at a strategic or departmental level as well as guidance to empower staff to do so is currently limited.</p>	<p>Target Narrative:</p> <p>We will explore opportunities to introduce a strategic approach to embedding education for sustainable development in light of the forthcoming curriculum review.</p> <p>We will learn from best practice at other institutions and ensure students are able to be involved in curriculum development informally and through the existing course rep system.</p> <p>Expand fledgling concepts for Living Lab approaches on campus relating to Food Policy, Biodiversity and the Regent's Canal into a wider programme.</p>

Conclusion and Recommendation

We will continue to monitor our performance against our ESAP as well as the UN SDGs.

That the Sustainability Committee should:

- Take assurance of this performance report
- Consider issue(s) that should be escalated and
- Approve this report



Sustainability Leadership Scorecard: Procurement and Supplier Engagement

Outcome requested:	<p>That the Sustainability Committee should:</p> <ul style="list-style-type: none"> • Take assurance of this performance report • Consider issue(s) that should be escalated and • Approve this report
Executive Summary:	<p>This report presents an overview of Queen Mary's Procurement through the lens of the Sustainability Leadership Scorecard (SLS). Queen Mary has in place a 5 year procurement strategy from 1 August 2017 to 31 July 2022. This strategy focusses on:</p> <ul style="list-style-type: none"> • Delivery value for money • High quality and efficient sourcing • Supplier relationship management • Engagement • Proactive contract management • Ethical Procurement • Team development • Performance against sector Best Practice Indicators <p>The SLS current score as at January 2021 was 23/32, and with the ongoing initiatives we anticipate this to increase to 31/32 by July 2022.</p> <p>This report provides an update as at October 2021. There are some initiatives in motion, the score as at October 2021 is 24/32.</p> <p>Initiatives in motion to achieve the increase include:</p> <ol style="list-style-type: none"> 1. Review and monitoring via the Sustainable Procurement Group. 2. Embedding further sustainability criteria into tenders and contract management. 3. Further developing the training and support for all colleagues. 4. Social Value portal – national programme to quantify sustainability as £s. 5. Working with ELBP (East London Business Place) to see if we can collaboratively deliver training/ workshops to local businesses. <p>It is worth highlighting that Procurement has already been utilising the Flexible framework and the DEFRA prioritisation tool, and we have made significant improvement over a number of years. This SLS demonstrates this achievement.</p>

Alignment with: <ul style="list-style-type: none"> • QMUL Strategy • Internal Policies/Regulations • External Statutory Requirements 	<ul style="list-style-type: none"> • Supporting research and innovation • Financial sustainability
Consideration of Strategic Risks:	Not Applicable
Subject to Prior and Onward Approval by:	Vice Principal for Policy
Confidentiality and Distribution:	<i>Non-restricted</i>
Equality Impact Assessment:	<i>Not Applicable</i>
Author(s) :	Bahar Shahin, Deputy Director of Procurement
Date:	27 September 2021

Sustainability Leadership Scorecard: Procurement and Supplier Engagement

Executive Summary

This report presents an overview of Queen Mary's Procurement through the lens of the Sustainability Leadership Scorecard (SLS). Queen Mary has in place a 5 year procurement strategy from 1 August 2017 to 31 July 2022. This strategy focuses on:

- Delivery value for money
- High quality and efficient sourcing
- Supplier relationship management
- Engagement
- Proactive contract management
- Ethical Procurement
- Team development
- Performance against sector Best Practice Indicators

The current SLS score is 24/32, and with the ongoing initiatives we anticipate this to increase to 31/32 by July 2022. This is an improve from a score of 23/32 that we achieved during the 2019/20 academic year

Initiatives in motion to achieve the increase include:

1. Review and monitoring via the Sustainable Procurement Group.
2. Embedding further sustainability criteria into tenders and contract management.
3. Further developing the training and support for all colleagues.

It is worth highlighting that Procurement has already been utilising the Flexible framework and the DEFRA prioritisation tool, and we have made significant improvement over a number of years. This SLS demonstrates this achievement.

Procurement at Queen Mary

Procurement focuses on providing comprehensive support and advice for Queen Mary departments to achieve the best value for money, whilst considering ethical procurement, cost, quality and compliance to regulations.

Procurement's objectives are to:

- Protect the commercial interests of Queen Mary.
- Provide procurement expertise and support across Queen Mary.
- Provide contracts giving best value for money for departments.
- Ensure that Queen Mary's Procurement Policy and Procedures are up to date, fit for purpose and support all relevant legislation.

Further information can be found at: <http://qm-web.finance.qmul.ac.uk/purchasing/>

Overview of SLS results: current scores and target scores

Each Framework Area is assessed against eight criteria. The table below details Procurement's assessment against the definitions provided, allocating a score for where we are currently in October 2021; and where we would like to get to by 31 July 2022.

Our overall current score is 24/32 and we believe, based on planned activities, we can reach 31/32. Our key areas of improvement are: Action Planning; and Link to the Curriculum.

This report provides an update as of October 2021.

Improvements are based on our plans to further develop sustainability key performance indicators (KPIs) into contracts, publishing policies on Queen Mary's external website, and raising further awareness through training and events.

Criteria	Academic Year	1	2	3	4
Policy and Strategy	2019/20 Score	[Target]			
	2020/21 Target	[Target]			
	Current Score	[Current Score]			
	2021/22 Target	[Target]			
Stakeholder Engagement	2019/20 Score	[Target]			[Target]
	2020/21 Target	[Target]			
	Current Score	[Current Score]			[Current Score]
	2021/22 Target	[Target]			

Criteria	Academic Year	1	2	3	4
Action Planning	2019/20 Score				
	2020/21 Target				
	Current Score				
	2021/22 Target				
Measurement	2019/20 Score				
	2020/21 Target				
	Current Score				
	2021/22 Target				
Communication	2019/20 Score				
	2020/21 Target				
	Current Score				
	2021/22 Target				
Training and Support	2019/20 Score				
	2020/21 Target				
	Current Score				
	2021/22 Target				
Implementation and Performance	2019/20 Score				
	2020/21 Target				
	Current Score				
	2021/22 Target				
Link to the Curriculum	2019/20 Score				
	2020/21 Target				
	Current Score				
	2021/22 Target				

Details of SLS results:

1. Policy and Strategy

The institution's strategies for community and public engagement are well developed and aligned with institution social responsibility strategies. Activity is reviewed on a regular basis. There are clear reporting lines into formal institution management structures.

Current Score: 4	Target: 4
There is an aligned Policy, reviewed regularly with clear reporting lines within the formal management structure.	There is an aligned Policy, reviewed regularly with clear reporting lines within the formal management structure.
Score Narrative:	Target Narrative:

Current Score: 4	Target: 4
<p>We currently have a Procurement strategy which includes ethical procurement, reported regularly to the Chief Financial Officer.</p> <p>Queen Mary's procurement is part of a national task force and is leading on behalf of London Universities to define and implement a social value portal which will enable social value to be measured in terms of financial values.</p> <p>Additionally we also have:</p> <ul style="list-style-type: none"> • Sustainability policy • Procurement procedures which embed sustainability into procurement • Modern slavery statement published annually 	<p>The target is to maintain our current standard and continuously improve through engagement with colleagues across Queen Mary.</p>

2. Stakeholder Engagement

Key stakeholders (including staff, students, community representatives and suppliers) review this activity and shape its development. There is evidence of a commitment to procuring ethically and responsibly.

Current Score: 3	Target: 4
<p>Not all relevant stakeholders are actively involved in the Policy review.</p>	<p>Relevant stakeholders are actively informing the review of the Policy and help shape its development. The Policy is leading good practice.</p>
<p>Score Narrative:</p> <p>Policies and practices are reviewed by key stakeholders and input. Predominantly via Sustainable procurement group, and Sustainability Committee.</p> <p>We are currently working with East of London Business Partnership (ELBP) to identify if workshops can be run with local</p>	<p>Target Narrative:</p> <p>The target is to maintain our current standard and continuously improve through engagement with colleagues across Queen Mary.</p> <p>The current initiative with the North East London Anchor may assist to focus more on local companies and suppliers, whilst ensuring compliance and transparency.</p>

Current Score: 3	Target: 4
suppliers to promote doing business with Queen Mary. (the last meeting was held on 15 October 2021)	

3. Action Planning

Action Plans, which incorporate objectives and associated targets, drive the cycles of activity across the institution. This includes the development of mutually beneficial links between suppliers who have strong ethical and responsible procurement values.

Current Score: 3	Target: 4
Action plans incorporate objectives but little evidence of driving activity across the institution.	Action plans incorporate objectives and associated targets and clearly demonstrate activity across the institution.
<p>Score Narrative:</p> <p>Sustainability impacts where relevant and proportional to the procurement is factored into the evaluation and contracts.</p> <p>The Department for Environment, Food and Rural Affairs (Defra) prioritisation tools assists to identify the areas of impact and opportunity. This provides a strategic direction.</p> <p>Our tendering process includes the below:</p> <ul style="list-style-type: none"> • Suppliers to confirm working in line with the Equality and Diversity requirements (protected characteristics) • Queen Mary's sustainability policy shared with all tendering suppliers and suppliers asked to confirm they support delivery of their service in line with it. • Suppliers confirm if they have a sustainability policy and attach to tender response. 	<p>Target Narrative:</p> <p>More detailed review of each procurement will be considered. It will need input from the Sustainability team to ensure relevant questions are added to the tender and Service Level Agreements (SLAs) and KPIs built into the contracts.</p>

Current Score: 3	Target: 4
<ul style="list-style-type: none"> Suppliers confirm compliance to Modern Slavery Act and attach to tender response. 	

4. Measurement

The impacts and benefits of sustainable procurement are routinely monitored and evaluated as part of existing institution practice. There is evidence of continual improvement and feedback loops.

Current Score: 3	Target: 4
All impacts and benefits of the Policy are formally routinely monitored and evaluated as part of existing institutional practices. There is some limited evidence of continual improvement and feed-back loops.	All impacts and benefits of the Policy are routinely monitored and evaluated as part of existing institutional practices. There is significant evidence of continual improvement and feed-back loops.
Score Narrative: All relevant and significant elements of contracts as reviewed and measured as part of the contract management. At present there are not any SLAs/ KPIs built into contracts for Sustainability	Target Narrative: Working with the sustainability team to identify suitable and value adding SLAs/ KPIs to be included within tender and contracts.

5. Communication

The sustainable procurement strategies are in the public domain. There is a planned approach to communicating to relevant stakeholders the strategies, associated activities and their implications. The agenda has clear, high-level support within the institution.

Current Score: 3	Target: 4
There is a Policy with clear high level support and a formal communication approach with all stakeholders.	There is a Policy with clear high level support and a formal communication approach with all stakeholders to be found in the public domain.
Score Narrative: We have sustainable procurement policy in place and also information for internal stakeholders. http://qm-web.finance.qmul.ac.uk/purchasing/sustainable-procurement/	Target Narrative: To improve this we will consider publishing the policy and information on our external site.

6. Training and Support

Commitments and/or targets are linked to named individuals or teams within the institution. Staff have either appropriate sustainability skills and knowledge or opportunities to develop them through access to specialist support.

Current Score: 3	Target: 4
<p>A clear training and support programme is in place for all staff.</p>	<p>All key staff have the appropriate training, knowledge and skills. All staff are aware of opportunities available to them. Staff are supported through access to specialist support where and when required.</p>
<p>Score Narrative:</p> <p>Training is available to all staff at Queen Mary.</p> <p>As well as providing a buyer training session we also have a dedicated Web page created and shared with all staff through communications.</p> <p>Training includes: Guide to Modern Slavery, Protecting Human rights, Bribery act, Introduction to Sustainable Procurement, and supplier due diligence.</p> <p>We monitor the take up.</p> <p>http://qm-web.finance.qmul.ac.uk/purchasing/training/</p> <p>We are continuing to promote the training available via HEPA (Higher Education Procurement Academy): http://qm-web.finance.qmul.ac.uk/purchasing/training/</p> <p>Procurement staff also complete an annual Ethical Supply Chain E-Learning on an annual basis.</p>	<p>Target Narrative:</p> <p>Maintain the available training, further communication to remind colleagues.</p>

7. Implementation and performance

There is evidence of sustainable procurement activity across the institution and beyond via the Student Union, student societies, staff groups, trade unions or individual sustainability champions. Performance is reviewed and there is evidence of continual improvement and feedback loops.

Current Score: 3	Target: 4
There is good evidence of staff and student-led initiatives across the institution but it does not go beyond the institution.	There is good evidence of staff and student-led initiatives promoting the Policy across the institution and beyond the institution.
<p>Score Narrative:</p> <p>There is good evidence of activity to demonstrate this criteria including:</p> <ul style="list-style-type: none"> • Procurement representation at Stonewall working group • Procurement working towards North East London charter for social impact • Queen Mary is an affiliate to Electronics Watch • We are also actively working with the London Universities Purchasing Consortia to actively drive responsible procurement across the sector 	<p>Target Narrative:</p> <p>The target is to maintain our current standard and continuously improve through engagement with colleagues across Queen Mary.</p>

8. Link to the curriculum

Sustainable procurement practice links to, and where appropriate is embedded into, the formal and informal curriculum activity.

Current Score: 2	Target: 3
Practice is formally linked to and embedded into some elements of curriculum or research.	There is a draft Policy or senior commitment to drafting a Policy which ensures that practice is linked, where appropriate, and embedded into all formal and informal curriculum and research.
<p>Score Narrative:</p> <p>Responsible Procurement event held in collaboration of LUPC and Geography Department in the Octagon in 2019.</p> <p>Various procurements are conducted to support teaching and learning at the Queen Mary.</p>	<p>Target Narrative:</p> <p>Raise the profile through additional events and wider engagement.</p>

Conclusion and Recommendation

We will continue to monitor our performance against our ESAP as well as the UN SDGs.

That the Sustainability Committee should:

- Take assurance of this performance report
- Consider issue(s) that should be escalated and
- Approve this report



Road to Net Zero: Building Profile and Decarbonisation Opportunities

Outcome requested:	That the Sustainability Committee should: <ul style="list-style-type: none"> • Take assurance of this report • Consider issues that should be escalated
Executive Summary:	<p>Preliminary Energy audits were performed in August 2021 for the three main UK Campuses (Mile End, Charterhouse Square and Whitechapel). Summaries of these report gives an insight into:</p> <ol style="list-style-type: none"> 1. Specification of types of buildings included in the analyses (gross internal area, year of construction, specific energy consumption per m², DEC rating) 2. Description of the existing situation and findings in: <ul style="list-style-type: none"> • Building envelope (walls, windows, roof) • Heating system (installed boilers, heating devises, condition of heating pipes insulation) • Lighting system (type of bulbs, availability of an occupancy sensor) • Water consumption equipment (availability of the water mixing taps with aerators and dual flush toilet) 3. Suggested energy efficiency measures
Alignment with: <ul style="list-style-type: none"> • QMUL Strategy • Internal Policies/Regulations • External Statutory Requirements 	<ul style="list-style-type: none"> • Queen Mary Environmental Sustainability Policy 2020 • Queen Mary Environmental Sustainability Action Plan (ESAP) 2020-2023
Consideration of Strategic Risks:	<ul style="list-style-type: none"> • <i>Regulatory compliance</i> • <i>Reputation</i>
Subject to Prior and Onward Approval by:	<i>Not Applicable</i>

Confidentiality and Distribution:	<i>Non-restricted</i>
Equality Impact Assessment:	<i>Not Applicable</i>
Author(s) :	Liudmyla Pasichnichenko, Sustainability and Energy Manager
Date:	<i>20 October 2021</i>

Road to Net Zero: Building Profile and Decarbonisation Opportunities

Executive Summary

Preliminary Energy audits were performed in August 2021 for the three main UK Campuses (Mile End, Charterhouse Square and Whitechapel). Summaries of these report gives an insight into:

1. Specification of types of buildings included in the analyses (gross internal area, year of construction, specific energy consumption per m², DEC rating)
2. Description of the existing situation and findings in:
 - Building envelope (walls, windows, roof)
 - Heating system (installed boilers, heating devises, condition of heating pipes insulation)
 - Lighting system (type of bulbs, availability of an occupancy sensor)
 - Water consumption equipment (availability of the water mixing taps with aerators and dual flush toilet)
3. Suggested energy efficiency measures

Overview

The inspected buildings are often characterized by high thermal and electrical energy consumption. Such a situation is explained by the low level of heat resistance of the building envelope, sometimes old heat generation system, and the installed powerful equipment. All these factors influence overall building energy consumption leading to a significant spends of budget funds.

Energy efficiency measures comprise a solution for the reduction of energy and water consumption. Renovation of the buildings' envelope will significantly reduce the energy consumption, as well as reduce heat load and increase buildings' suitability for low-carbon heating.

Insulation of the outside walls was recommended in the buildings that were built more than 25 years ago but are not listed buildings. Considering the period of the building's construction, it is assumed that the thermal resistance of the walls does not meet the current norms. Also, it was suggested to replace the outdated windows in two stages:

- First priority: replacement of the wooden single glazed windows.

- Second priority: replacement of the PVC windows that reached the end of their expected lifetime (20 years).

Heating systems are a particularly important topic in all the considered buildings. It was suggested to replace the boilers that are coming to the end of their useful life (15 years) and replace the broken radiator valves. The pipes in unheated areas are usually well insulated, therefore the insulation is not recommended.

The majority of lighting systems in buildings comprise LED lighting and fluorescent lighting. In some buildings lighting occupancy sensors are installed in the corridors and toilets. It is proposed to install lighting occupancy sensors in corridors, toilets and kitchens in all the buildings.

The measures include also measures related to the water system, such as installation of water mixing taps with tap aerators and installation of dual flush toilets, this will reduce water consumption significantly.

During the site visits, it was noticed that in some empty rooms the light was turned on, and sometimes the air conditioner was working. It is recommended to run energy awareness campaign to promote good energy housekeeping and behaviour.

An overview of the suggested energy efficiency measures is presented in the paper below, while the detailed descriptions of proposed measures can be found in Annex 1 (separate campus reports).

Mile End Campus Non-residential Buildings: Opportunities

Below are the preliminary opportunities identified across non-residential buildings across our Mile End Campus:

- **Wall insulation:** Engineering Building, Jones Building (Physics), Student Union Building, Laws Building, Informatics Teaching Labs and Geography Building.
- Windows replacement
 - *First priority:* Arts Research Annexe, 404 Bancroft Road, Engineering Building, Queens' Building, Jones Building (Physics), People's Palace, Student Union, Laws Building, Geography Building.
 - *Second priority:* Informatics Teaching Labs, Student Hub, Computer Science Building, Arts One Building, Library, Francis Bancroft Building, Lock Keepers Cottage and The Nursery.
- **Boiler replacement:** Francis Bancroft Building (13 years old) and Student Union Building (14 years old).

- **Replacement of the radiator valves:** Laws Building, Queens' Building, Engineering Building, Lock Keepers Cottage.
- **Installation of water mixing taps:** Laws Building, Computer Science Building, People's Palace, Arts Research Annexe, and the Nursery.
- **Installation of dual flush toilets:** Informatics Teaching Labs, Laws Building, Computer Science Building, People's Palace, Arts One Building, Joseph Priestley Building, Library, Francis Bancroft Building, Arts Research Annexe, the Nursery.

Mile End Campus Residential Buildings: Opportunities

Below are the preliminary opportunities identified across residential buildings across our Mile End Campus:

- **Wall Insulation**
 - *First priority:* None.
 - *Second priority:* Ifor Evans Place, Lindop House, Hatton House, Maynard House, Varey House, Stocks Court.
- **Windows Replacement**
 - *First priority:* Albert Stern House.
 - *Second priority:* Ifor Evans Place, Lindop House, Hatton House, Maynard House, Varey House, Stocks Court, Maurice Court, Beaumont Court, Richard Feilden House and Lynden House.
- **Boiler Replacement:** Richard Feilden House (16 years old).
- **Replacement of the radiator valves:** Ifor Evans Place.
- **Modernisation of the lighting system with an occupancy sensor** in corridors, toilets and kitchens in all the buildings except Ifor Evans Place, Lindop House, Beaumont Court, Albert Stern House and Lynden House.
- **Installation of water mixing taps:** Lindop House, Maynard House, Varey House and Albert Stern House.
- **Installation of dual flush toilets:** all buildings except Ifor Evans Place, Stocks Court and Pooley House.

Whitechapel Campus Buildings: Opportunities

Below are the preliminary opportunities identified across buildings across our Whitechapel Campus:

- **Wall Insulation:** Floyer House, Whitechapel Students Union and Yvonne Carter Building.
- **Window Replacement**
 - *First priority:* Garrod Building, Whitechapel Students Union.

- *Second priority:* The Wingate Institute (22 years old), Abernethy Building (25 years old).
- **Boiler Replacement:** Floyer House.
- **Modernisation of the lighting system with an occupancy sensor** in corridors, toilets and kitchens in the Wingate Institute, Yvonne Carter Building, Blizzard Building and Innovation Centre.
- **Installation of water mixing taps:** The Library, The Wingate Institute, Abernethy Building, Garrod Building, and Floyer House.
- **Installation of dual flush toilets** in all buildings except the Blizzard Building.

Charterhouse Square Campus Buildings: Opportunities

Below are the preliminary opportunities identified across buildings across our Whitechapel Campus:

- **Wall Insulation:** Dawson Hall, John Vane Science Centre, Wolfson Building
- Windows replacement
 - *First priority:* Dawson Hall, Lodge House, John Vane Science Centre, Joseph Rotblat Building and Old Anatomy Building.
 - *Second priority:* Wolfson Building (30 years old).
- **Modernisation of the lighting system with an occupancy sensor** in corridors and toilets, the buildings Old Anatomy Building, Joseph Rotblat Building, John Vane Science Centre and Lodge House.
- **Installation of water mixing taps** Joseph Rotblat Building, Lodge House and partly in Dawson Hall.
- **Installation of dual flush toilets** in all buildings except Dawson Hall and Old Anatomy Building.

Actions going forward

- Carry out preliminary energy audit of Lincolns' Inn Fields, West Smithfield Centre, and Chislehurst Sports Ground Campuses.
- Run energy awareness campaigns focused on promoting good energy housekeeping and behaviour (soft energy efficiency measures).
- Carry out a deep energy audit to quantify measures and inspect HVAC system.

Summary and Recommendations:

That the Sustainability Committee should:

- Take assurance of this report
- Consider issues that should be escalated



Building Energy Profile Report

Mile End Campus

Executive Summary

Preliminary Energy audit was performed in August 2021. The inspected buildings are often characterized by high thermal and electrical energy consumption. Such a situation is explained by the low level of heat resistance of the building envelope, sometimes old heat generation system, and powerful installed equipment. All these factors influence overall building energy consumption leading to a significant spends of budget funds.

Building Overview

The analysis for Mile End Campus comprised in total 30 buildings. Out of those 22 buildings, 14 buildings are educational/research buildings and one building is a residential building (student accommodation).



The information related to building characteristics is presented in the Table in the next page.

#	Building name	Building address	Gross internal area (m ²)	Year of construction	Electricity kWh/m ² /year*	Fossil Fuel kWh/m ² /year*	DEC Rating
Non-Residential							
1	Informatics Teaching Labs	5 Godward Square, Mile End Road	1,443.0	1989	192	36	F
2	Geography Building	327 Mile End Road	2,812.3	1840	51	146	C
3	Laws Building	327 Mile End Road	3,025.0	1939	81	111	D
4	Student Hub (Catering Building)	329 Mile End Road	3,145.5	1991	251	99	G
5	Computer Science Building	327 Mile End Road	3,382.2	1999	63	44	B
6	Mathematical Science Building	1 Godward Square	4,002.8	1979	60	57	B
7	Arts Two Building	341 Mile End Road	3,503.0	2011	70	35	C
8	Student Union Building (Mile End)	Mile End Road	3,906.1	1979	51	44	B
9	People's Palace	327 Mile End Road	4,562.2	1937	89	257	E
10	G. E. Fogg Building	327 Bancroft Road	5,454.0	1970	114	44	G
11	Arts One Building	341 Mile End Road	5,492.3	1992	46	59	B
12	G. O. Jones Building (Physics)	Mile End Road	5,580.1	1979	156	122	F
13	Joseph Priestley Building	Mile End Road	5,941.6	2003	503	466	G
14	Library (Mile End)	327 Mile End Road	9,203.3	1988	83	53	D
15	Queens' Building	327 Mile End Road	13,400.3	1840	76	146	D
16	Francis Bancroft Building	327 Westfield Way	14,371.0	1990	153	18	E
17	Engineering Building	327 Mile End Road	16,015.1	1979	79	140	D
18	Graduate Centre	Mile End Road	6,858.5	2016	76	67	C
19	Arts Research Annexe	357 Mile End Road	421.1	1840	62	100	C
20	Lock Keepers Cottage	Mile End Road	235.7	1840	27	110	E
21	The Nursery	406-408 Bancroft Road	423.0	2001	68	74	E
22	404 Bancroft Road	Mile End Campus	142.3	1914	45	174	NA
Residential							
23	Ifor Evans Place	263 Mile End Road	2,099.0	1996	40	129	C
24	Lindop House	432 Mile End Road	1,406.4	1996	76	50	C
24	Hatton House	Westfield Way, Mile End Road	1,592.7	1990	35	161	C
25	Maynard House	Westfield Way, Mile End Road	2,067.0	1992	151	109	E
25	Varey House	44-61 Westfield Way, Mile End Road	2,067.0	1992	134	68	E
26	Stocks Court	Stayners Road	3,142.0	1992	57	112	C
26	Creed Court	Westfield Way, Mile End Road	2,850.9	2005	59	36	B
27	Maurice Court	Westfield Way, Mile End Road	3,835.1	2005	70	43	C
27	Beaumont Court	Westfield Way, Mile End Road	3,886.6	2005	86	42	C
28	France House	Westfield Way, Mile End Road	4,623.2	2005	74	81	C
28	Richard Feilden House	Westfield Way, Mile End Road	4,856.9	2007	108	76	D
29	Pooley House	Westfield Way, Mile End Road	8,333.0	2005	52	40	B
29	Albert Stern House	253 Mile End Road	1,034.8	1840	55	424	F
30	Lynden House	Westfield Way, Mile End Road	525.8	2005	13	0	C

***2019-2020 academic year**

Table 1: General information related to the buildings in Mile End campus

Non-Residential Buildings

Building Envelopes

The walls of the building are in satisfactory condition. However, the buildings were built in a different period from 1840 to 2016. The walls of the building are in satisfactory condition. However, the buildings were built in a different period from 1840 to 2016. Queens' Building and People's Palace are Grade II listed buildings, so external wall insulation is not possible. On the other hand, Arts Two Building and Graduate Centre are relatively modern buildings. Considering the period of construction and condition, it is assumed that the walls do meet the current norms.

The final decision will be provided after an analysis of the technical documentation of the buildings. All other buildings were built from 1914 to 2001, respectively. During this time rational use of energy resources was not on the agenda, the thermal protective properties of the walls in the existing situation are in general poor and do not meet the requirements of existing regulation.

The current England norms for Non-domestic buildings require max. $U = 0.22 \text{ W/m}^2\text{K}$ for the construction of new buildings and $0.3 \text{ W/m}^2\text{K}$ for the refurbishment.

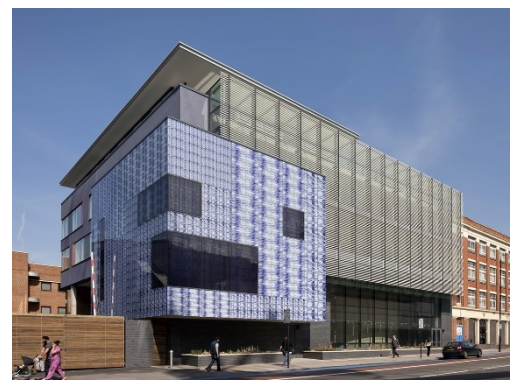




Figure 1: Examples of outside walls in buildings of the Mile End Campus (Queens' Building, People's Palace, Graduate Centre, Arts Two, Engineering Building, Geography Building)

In terms of thermal properties of windows and doors in the existing situation, they mostly do not comply with the minimum requirements set out in the England regulations. The current England norms require max. $U = 1.4 \text{ W/m}^2\text{K}$ for the windows, roof windows, glassed roof-lights and glassed doors, $U=1.0 \text{ W/m}^2\text{K}$ for opaque doors, and $U=1.2 \text{ W/m}^2\text{K}$ for Semi glassed doors.

In the modern buildings Arts Two Building, Graduate Centre all the windows are PVC double glazing- windows, so the replacement is therefore not recommended.

In older buildings, existing windows have been partially replaced by modern ones, however, most of the windows have old wooden or metal frames with single or double glazing. It is recommended to replace all outdated non energy efficient windows.





Figure 2: Examples of windows in People's Palace, Laws Building, Francis Bancroft Building and Graduate Centre

Heating Systems

The buildings receive heating energy from their own boiler houses. Boiler rooms equipment is in good or satisfactory condition. Most of the boilers have not reached the end of their expected lifetime and the replacement is therefore not recommended. However, the efficiency of the boilers will be additionally investigated in the next stages of the site visit.

In Graduate School 2 MW Combine Heat and Power (CHP) is installed. It will supply heat for the buildings: Geography, People's Palace, G.E. Fogg Building, Joseph Priestly building, Queens' building and Francis Bancroft Building. Between the CHP and the buildings is three-year-old heating networks. In addition, the Queens building has four boilers to cover peak load during the heating season. The existing boiler rooms in other buildings connected to the CHP are not used.

Most of the heating devices are single or double panel convactor radiators and small part of cast-iron radiators in the Geography Building, People's Palace, Queens' Building, and fan coil units in the Mathematical Science Building, Arts Two Building, Arts One Building, Library, Engineering Building and Graduate Centre. The pipes in unheated areas are usually well insulated. Figures below show examples of installed equipment.





Figure 3: Examples of heating devices in Fogg Building, Arts One Building, Queens' Building, and Graduate Centre

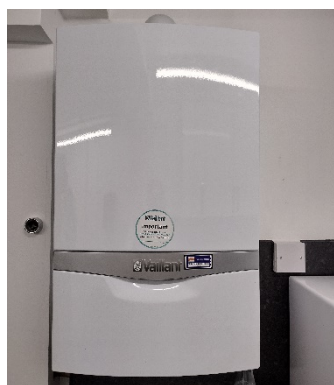


Figure 4: Examples of boilers in Queens' Building, Student Union Building, Joseph Priestley Building, and 404 Bancroft Road



Figure 5: Examples of heating pipes insulation

Water Consumption Equipment

Water mixing taps are not installed in Laws Building, Computer Science Building, People's Palace, Arts Research Annexe, and in the Nursery. It is recommended to replace separate cold and hot water taps with water mixing taps with water aerator and timer flow.

Toilet tanks in the building have two-stage flushing in the Geography Building, Student Hub (Catering Building), Mathematical Science Building, Arts Two Building, Student Union Building, G. O. Jones Building (Physics), Queens' Building, Engineering Building, Graduate Centre, Lock Keepers Cottage. In other buildings, it is proposed to replace the one-stage tanks with two-stage flushing.



Figure 6: Examples of water mixing taps



Figure 7: Examples of the one and two-stage toilet tanks

Lighting System

The majority of lighting systems in buildings comprise LED lighting and fluorescent lighting. Lighting Control Sensors are installed in the corridors and toilets in Arts Two Building, Student Union Building, and in toilets in People's Palace, G. O. Jones Building (Physics) and Queens' Building. During the survey, it was noticed that the lighting often was switched on in the empty premises. It is proposed to install Lighting Control Sensors in corridors and toilets in all the buildings. This will reduce energy consumption in a significant matter. Figures below show examples of installed lighting equipment.



Figure 8: Examples of the lighting equipment in Arts One Building, Joseph Priestley Building, Computer Science Building and The Nursery

Residential Buildings

Building Envelopes

The walls of the building are in satisfactory condition. However, the buildings were built in a different period from 1840 to 2007. The walls of the building are in satisfactory condition. Albert Stern House building was built in 1840 and is Grade II listed building, so external wall insulation is not possible.

On the other hand, Ifor Evans Place, Lindop House, Hatton House, Maynard House, Varey House, Stocks Court were built from 1990 to 1996. During this time rational use of energy resources was not on the agenda, the thermal protective properties of the walls in the existing situation are in general poor and do not meet the requirements of existing regulation.

All other buildings were built from 2005 to 2007. Considering the period of construction and condition, it is assumed that the walls do meet the current norms. The final decision will be provided after an analysis of the technical documentation of the buildings.

The current England norms for Non-domestic buildings require max. $U = 0.22 \text{ W/m}^2\text{K}$ for the construction of new buildings and $0.3 \text{ W/m}^2\text{K}$ for the refurbishment.



Figure 9: Examples of outside walls in buildings of the Albert Stern House, Hatton House, Beaumont Court, and Pooley House

In terms of thermal properties of windows and doors in the existing situation, they mostly do not comply with the minimum requirements set out in the England regulations. The current England norms require max. $U = 1.4 \text{ W/m}^2\text{K}$ for the windows, roof windows, glassed roof-lights and glassed doors, $U=1.0 \text{ W/m}^2\text{K}$ for opaque doors, and $U=1.2 \text{ W/m}^2\text{K}$ for Semi glassed doors.

In the buildings built after 2005, all windows are relatively modern. Considering the period of installation and condition, it is assumed that these windows do not meet the norms. In spite of that, they have not reached the end of their expected lifetime (20 years) and the replacement is therefore not recommended.

In older buildings, most of the windows have old wooden or metal frames with single or double glazing. It is recommended to replace all outdated non energy efficient windows.



Figure 10: Examples of windows in Albert Stern House, Richard Feilden House, Lynden House, and Creed Court

Heating Systems

The buildings Ifor Evans Place, Hatton House, and Albert Stern House receive heating energy from their own boiler houses. All other buildings receive heating energy from their own electric radiators. Electric radiators have recently been replaced in buildings Lindop House, Maynard House, and Varey House.

All buildings receive Domestic hot water (DHW) from their own boiler houses. The boiler rooms equipment is in satisfactory condition. In the buildings Stocks Court, Beaumont Court, France House, Pooley House installed boilers are 10-11 years old and in the building Richard Feilden House 16 years old. These boilers are reaching the end of their expected lifetime and the efficiency of the boiler must be additionally investigated.

The information related to heating system is presented in the table below.

Name of Building	Heating source	Condition of the electric radiators	Age of boilers
Ifor Evans Place	Boiler house	-	-
Lindop House	Electric radiators	New	3
Hatton House	Boiler house	-	-
Maynard House	Electric radiators	New	-
Varey House	Electric radiators	New	-
Stocks Court	Electric radiators	Old	11
Creed Court	Electric radiators	Old	1
Maurice Court	Electric radiators	Old	8
Beaumont Court	Electric radiators	Old	10
France House	Electric radiators	Old	11
Richard Feilden House	Electric radiators	Old	16
Pooley House	Electric radiators	Old	11
Albert Stern House	Cast iron radiators	-	-
Lynden House	Electric radiators	Old	-

Figures below show examples of installed radiators.



Figure 11: Examples of heating devices in Ifor Evans Place, Albert Stern House, Beaumont Court, and Maynard House

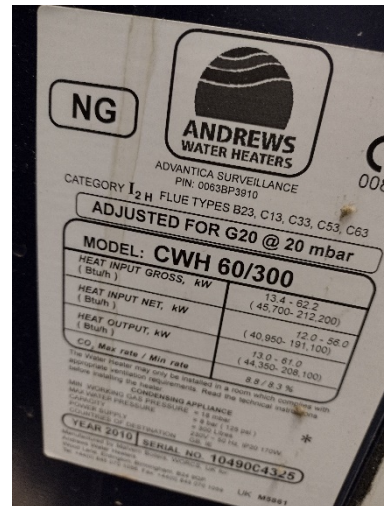


Figure 12: Examples of water heaters in Richard Feilden House, France House



Figure 13: Examples of heating pipes insulation in Beaumont Court and Stocks Court

Water Consumption Equipment

Water mixing taps are partly installed in Lindop House, Maynard House, Varey House and Albert Stern House. It is recommended to replace separate cold and hot water taps with water mixing taps with water aerator and timer flow.

Toilet tanks in the building have two-stage flushing in the Ifor Evans Place, Stocks Court and Pooley House. In other buildings, it is proposed to replace the one-stage tanks with two-stage flushing.

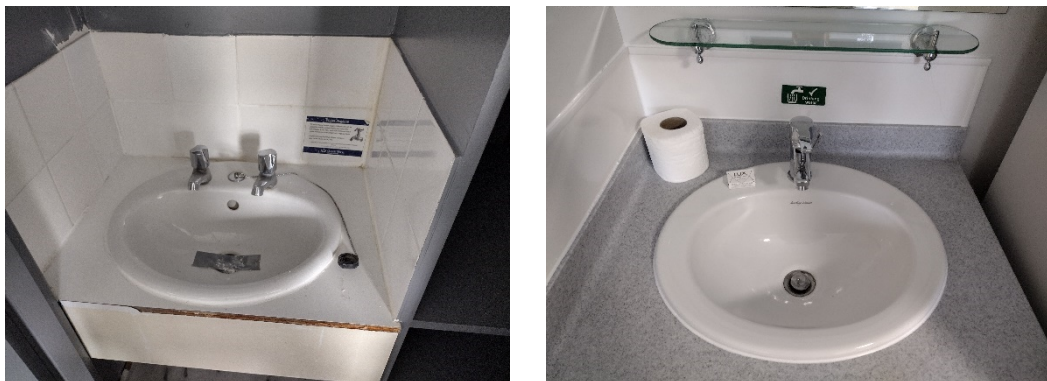


Figure 14: Examples of water mixing taps



Figure 15: Examples of the one and two-stage toilet tanks

Lighting System

The majority of lighting systems in buildings comprise LED lighting and fluorescent lighting. Lighting Control Sensors are installed in the corridors and toilets in Ifor Evans Place, and in corridors in Lindop House, Beaumont Court, Albert Stern House, and Lynden House. It is proposed to install Lighting Control Sensors in corridors, toilets, and kitchens in all the buildings. This will reduce energy consumption in a significant matter. The figures below show examples of installed lighting equipment.



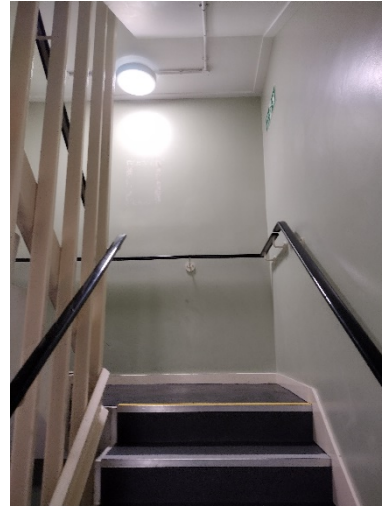


Figure 16: Examples of the lighting equipment in Ifor Evans Place, Maurice Court, Albert Stern House, and Beaumont Court

Energy Efficiency Opportunities: Mile End Campus Non-Residential Buildings

An overview of the preliminary energy efficiency measures is presented in the table below, while the detailed descriptions of proposed measures are summarised in the Table below.

Campus	Name of Building	Insulation of the walls	Replacement of the windows	Boiler replacement	Repair/replacement of the radiator valves	Sensor lighting system	Water mixing taps	Dual flush toilets
Mile End	Informatics Teaching Labs	Yes	Second priority	-	-	Yes	-	Yes
Mile End	Geography Building	Yes	First priority	-	Yes	Yes	-	-
Mile End	Laws Building	Yes	First priority	-	-	Yes	Yes	Yes
Mile End	Student Hub (Catering Building)	-	Second priority	-	-	Yes	-	-
Mile End	Computer Science Building	-	Second priority	-	-	Yes	Yes	Yes
Mile End	Mathematical Science Building	-	-	-	-	Yes	-	-
Mile End	Arts Two Building	-	-	-	-	-	-	-
Mile End	Student Union Building (Mile End)	Yes	First priority	Yes	-	-	-	-
Mile End	People's Palace	Listed build	First priority	-	-	Corridors	Yes	Yes
Mile End	G. E. Fogg Building	-	-	-	-	Yes	-	-
Mile End	Arts One Building	-	Second priority	-	-	Yes	-	Yes
Mile End	G. O. Jones Building (Physics)	Yes	First priority	-	-	Corridors	-	-
Mile End	Joseph Priestley Building	-	-	-	-	Yes	-	Yes
Mile End	Library (Mile End)	-	Second priority	-	-	Yes	-	Yes
Mile End	Queens' Building	Listed build	First priority	-	Yes	Corridors	-	-
Mile End	Francis Bancroft Building	-	Second priority	Yes	-	Yes	-	Yes
Mile End	Engineering Building	Yes	First priority	-	Yes	Yes	-	-
Mile End	Graduate Centre	-	-	-	-	Yes	-	-
Mile End	Arts Research Annexe	Listed build	First priority	-	-	Yes	Yes	Yes
Mile End	Lock Keepers Cottage	Listed build	Second priority	-	Yes	Yes	-	-
Mile End	The Nursery	-	Second priority	-	-	Yes	Yes	Yes
Mile End	404 Bancroft Road	Listed build	First priority	-	-	Yes	-	-

Energy Efficiency Opportunities: Mile End Campus Residential Buildings

An overview of the preliminary energy efficiency measures is presented in the table below.

Campus	Name of Building	Insulation of the walls	Replacement of the windows	Boiler replacement	Repair/replacement of the radiator valves	Sensor lighting system	Water mixing taps	Dual flush toilets
Mile End	Ifor Evans Place	Second priority	Second priority	-	Yes	-	-	-
Mile End	Lindop House	Second priority	Second priority	-	-	-	Yes partly	Yes
Mile End	Hatton House	Second priority	Second priority	-	-	Yes	-	Yes
Mile End	Maynard House	Second priority	Second priority	-	-	Yes	Yes partly	Yes
Mile End	Varey House	Second priority	Second priority	-	-	Yes	Yes partly	Yes
Mile End	Stocks Court	Second priority	Second priority	-	-	Yes	-	-
Mile End	Creed Court	-	-	-	-	Yes	-	Yes
Mile End	Maurice Court	-	Second priority	-	-	Yes	-	Yes
Mile End	Beaumont Court	-	Second priority	-	-	-	-	Yes
Mile End	France House	-	-	-	-	Yes	-	Yes
Mile End	Richard Feilden House	-	Second priority	Yes	-	Yes	-	Yes
Mile End	Pooley House	-	-	-	-	Yes	-	-
Mile End	Albert Stern House	Listed build	First priority	-	-	-	Yes partly	Yes
Mile End	Lynden House	-	Second priority	-	-	-	-	Yes



Building Energy Profile Report

Whitechapel Campus

Executive Summary

Preliminary Energy audit was performed in August 2021. The inspected buildings are often characterized by high thermal and electrical energy consumption. Such a situation is explained by the low level of heat resistance of the building envelope, sometimes old heat generation system, and powerful installed equipment. All these factors influence overall building energy consumption leading to a significant spends of budget funds.

Building Overview

The analysis for Whitechapel Campus comprised in total 10 buildings. Out of those 10 buildings, 9 buildings are educational/research buildings and one building is a residential building (student accommodation).



The information related to building characteristics is presented in the table below.

#	Building name	Building Type	Building address	Gross internal area (m ²)	Year of construction	Electricity kWh/m ² /year*	Fossil Fuel kWh/m ² /year*	DEC Rating
1	Garrod Building	Non-Residential	Medical College, Turner Street	5,456.7	1840	78	91	C
2	Library (Whitechapel)	Non-Residential	Newark Street	1,467.5	1840	90	136	E
3	Students Union	Non-Residential	Stepney Way	1,714.6	1979	284	45	E
4	Abernethy Building	Non-Residential	2 Newark Street	3,067.8	1996	240	230	G
5	Innovation Centre	Non-Residential	42 New Road	6,811.0	2009	309	184	G
6	Blizard Building	Non-Residential	2 Newark Street	8,037.5	2005	390	262	G
7	The Wingate Institute	Non-Residential	26 Ashfield Street	1,516.0	1999	284	607	G
8	Yvonne Carter Building	Non-Residential	58 Turner Street	1,208.9	1999	98	0	C
9	64 Turner Street	Non-Residential	Turner Street	181.3	1840	12	76	NA
10	Floyer House	Residential	60 Philpot Street	4,681.0	1939	51	95	C

*2019-2020 academic year

Table 1: General information related to the buildings in Whitechapel campus

Building Envelopes

The walls of the building are in satisfactory condition. However, the buildings were built in a different period from 1840 to 2009. The Old Library and Garrod Building are Grade II listed buildings, so external wall insulation is not possible. On the other hand, Abernethy Building, Innovation Centre, Blizard Building, The Wingate Institute are relatively modern buildings. Considering the period of construction and condition, it is assumed that the walls do meet the current norms. The final decision will be provided after an analysis of the technical documentation of the buildings. Floyer House and Students Union buildings were built in 1939 and 1979, respectively. During this time rational use of energy resources was not on the agenda, the thermal protective properties of the walls in the existing situation are in general poor and do not meet the requirements of existing regulation.

The current England norms for Non-domestic buildings require max. $U = 0.22 \text{ W/m}^2\text{K}$ for the construction of new buildings and $0.3 \text{ W/m}^2\text{K}$ for the refurbishment.



Figure 1: Examples of outside walls in buildings of the Whitechapel Campus

In terms of thermal properties of windows and doors in the existing situation, they mostly do not comply with the minimum requirements set out in the England regulations. The current England norms require max. $U = 1.4 \text{ W/m}^2\text{K}$ for the windows, roof windows, glassed roof-lights and glassed doors, $U=1.0 \text{ W/m}^2\text{K}$ for opaque doors, and $U=1.2 \text{ W/m}^2\text{K}$ for Semi glassed doors.

In the modern buildings Abernethy Building, Innovation Centre, Blizzard Building, The Wingate Institute All the windows are PVC double glazing- windows, so the replacement is therefore not recommended.

In older buildings, existing windows have been partially replaced by modern ones, however, most of the windows have old wooden or metal frames with single or double glazing. It is recommended to replace all outdated non energy efficient windows.



Figure 2: Examples of windows in buildings of the Whitechapel Campus

Heating Systems

The buildings receive heating energy from their own boiler houses. Boiler rooms equipment is in good or satisfactory condition. Most of the boilers have not reached the end of their expected

lifetime (10-15 years) and the replacement is therefore not recommended. However, the efficiency of the boiler in Floyer House must be additionally investigated.

Most of the heating devices are single or double panel convector radiators and small part of cast-iron radiators in the Library and fan coil units in the Blizzard building. Thermostatic valves are installed, therefore regulation of heating on the radiators is possible. The installed systems in the buildings are two-pipe systems. The pipes in unheated areas are usually well insulated. Figures below show examples of installed equipment.

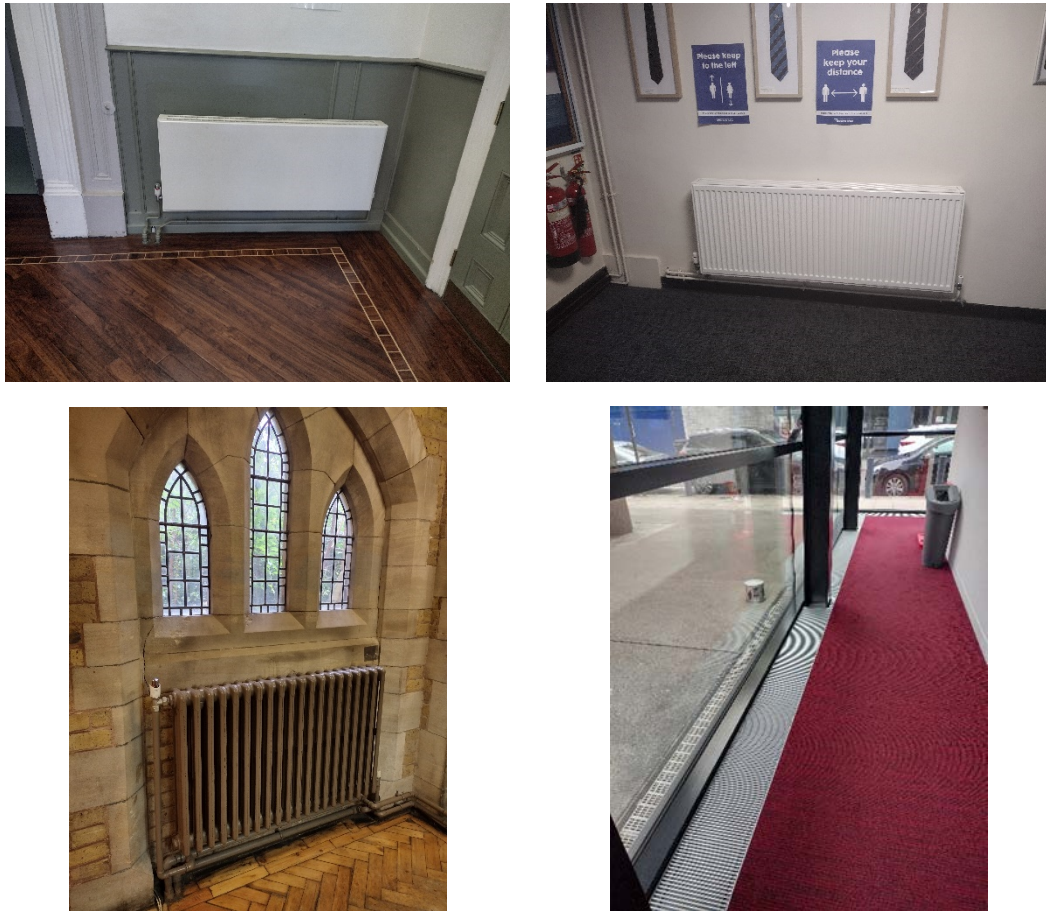


Figure 3: Examples of heating devices in Garrod building, Students Union, Library and Blizzard Building



Figure 4: Examples of boilers in Floyer House, Garrod building, Blizard Building and 64 Turner Street

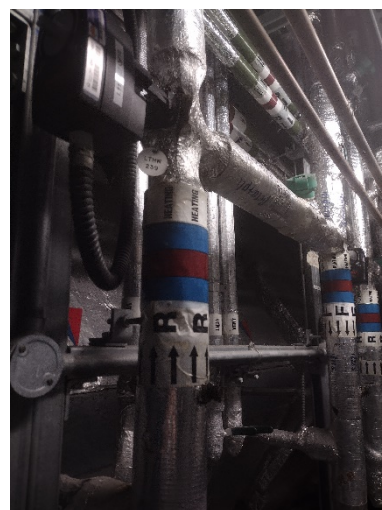


Figure 5: Examples of heating pipes insulation

Water Consumption Equipment

Water mixing taps are installed in Yvonne Carter Building, Students Union, Blizard Building, and 64 Turner Street building. In other buildings, it is recommended to replace separate cold and hot water taps with water mixing taps with water aerator and timer flow.

Toilet tanks in the building have two-stage flushing in the Innovation Centre and Blizard Building. In other buildings, it is proposed to replace the one-stage tanks with two-stage flushing.



Figure 6: Examples of water mixing taps

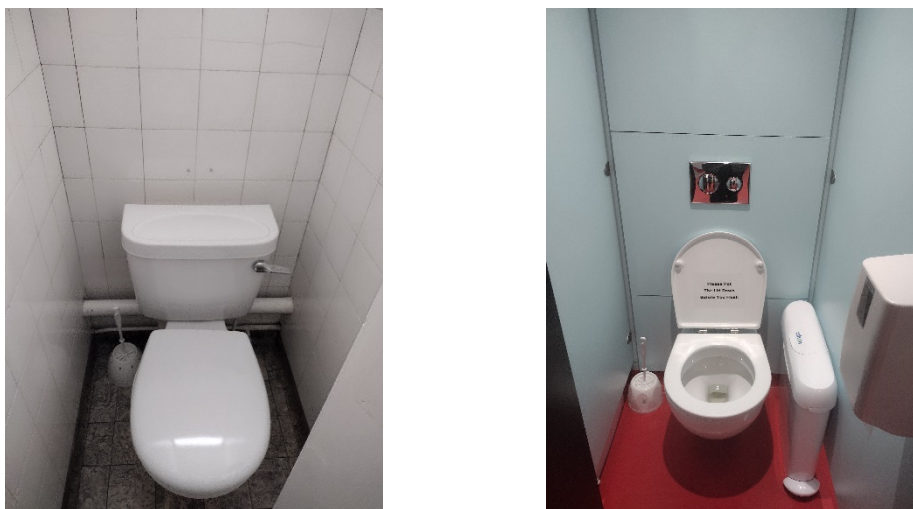


Figure 7: Examples of the one and two-stage toilet tanks

Lighting System

The majority of lighting systems in buildings comprise LED lighting and fluorescent lighting. Lighting Control Sensors are installed in the corridors and toilets in Yvonne Carter Building, Blizard Building, and Foyer House. During the survey, it was noticed that the lighting often was switched on in the empty premises. It is proposed to install Lighting Control Sensors in corridors and toilets in all the buildings. This will reduce energy consumption in a significant matter. Figures below show examples of installed lighting equipment.



Figure 7: Examples of the lighting equipment in Blizard, Yvonne Carter, Garrod Buildings, and Library

An overview of the preliminary energy efficiency measures is presented in the table below, while the detailed descriptions of proposed measures are summarised below.

Name of Building	Insulation of the walls	Replacement of the windows	Boiler Status	Modernisation of the lighting system with an occupancy sensor	Water mixing taps	Dual flush toilets
Library (Whitechapel)	-	-	-	TBI	Yes partly	Yes
The Wingate Institute	-	Second priority	-	Yes	Yes partly	Yes
Yvonne Carter Building	Yes	-	-	Yes	-	Yes
Whitechapel Students Union	Yes	First priority	-	-	-	Yes
Abernethy Building	-	Second priority	-	-	Yes partly	Yes
Garrod Building	-	First priority	-	TBI	Yes partly	Yes
Blizard Building	-	-	-	Yes	-	-
Foyer House	Yes	-	First priority	-	Yes partly	Yes
64 Turner Street	-	-	-	-	-	Yes
Innovation Centre	TBI	TBI	TBI	Yes	TBI	TBI



Building Energy Profile Report

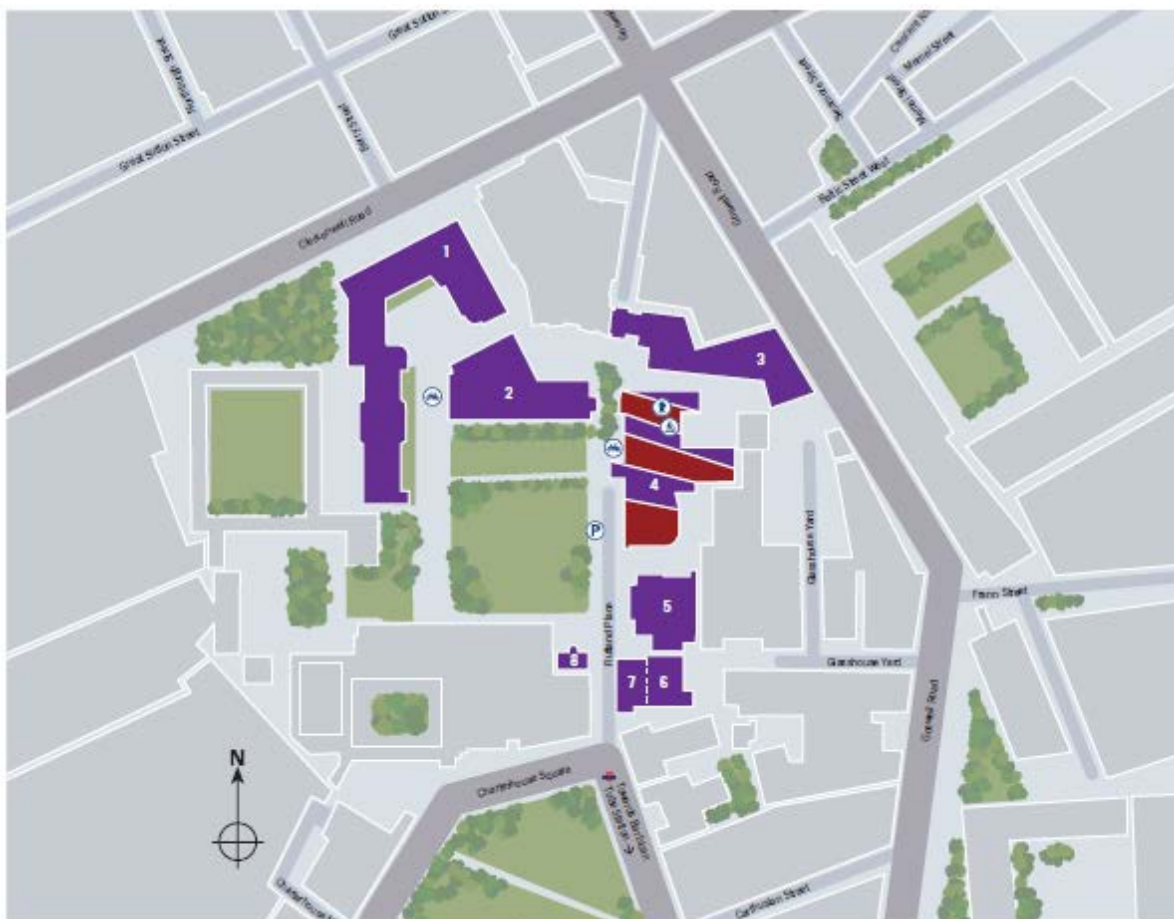
Charterhouse Square Campus

Executive Summary

Preliminary Energy audit was performed in August 2021. The inspected buildings are often characterized by high thermal and electrical energy consumption. Such a situation is explained by the low level of heat resistance of the building envelope, sometimes old heat generation system, and powerful installed equipment. All these factors influence overall building energy consumption leading to a significant spends of budget funds.

Building Overview

The analysis for Charterhouse Square Campus comprised in total 7 buildings. Out of those 7 buildings, 6 buildings are educational/research buildings and one building is a residential building (student accommodation).



The information related to building characteristics is presented in the table below.

#	Building name	Building Type	Building address	Gross internal area (m ²)	Year of construction	Electricity kWh/m ² /year*	Fossil Fuel kWh/m ² /year*	DEC Rating
1	Old Anatomy Building (Rees)	Non-Residential	Charterhouse Square Campus	1,010.9	1894	306	63	G
2	Joseph Rotblat Building	Non-Residential	Charterhouse Square Campus	1,496.0	1939	306	26	G
3	Wolfson Building	Non-Residential	Charterhouse Square Campus	2,042.3	1991	306	231	G
4	William Harvey Heart Centre	Non-Residential	Block D, Charterhouse Square	3,060.8	2000	349	231	G
5	John Vane Science Centre	Non-Residential	Charterhouse Square Campus	11,613.8	1996	94	43	C
6	Lodge House	Non-Residential	Charterhouse Square Campus	130.8	1874	37	184	NA
7	Dawson Hall	Residential	Charterhouse Square Campus	8,177.5	1979	306	231	G

*2019-2020 academic year

Table 1: General information related to the buildings in Charterhouse Square campus

Building Envelope

The walls of the building are in satisfactory condition. However, the buildings were built in a different period from 1840 to 2000. Old Anatomy Building and Lodge House are Grade II listed buildings, so external wall insulation is not possible. On the other hand, William Harvey Heart Centre is relatively modern buildings. Considering the period of construction and condition, it is assumed that the walls do meet the current norms. The final decision will be provided after an analysis of the technical documentation of the buildings. Joseph Rotblat Building, John Vane Science Centre, and Wolfson Building were built in 1939, 1979 and 1991, respectively. During this time rational use of energy resources was not on the agenda, the thermal protective properties of the walls in the existing situation are in general poor and do not meet the requirements of existing regulation.

The current England norms for Non-domestic buildings require max. $U = 0.22 \text{ W/m}^2\text{K}$ for the construction of new buildings and $0.3 \text{ W/m}^2\text{K}$ for the refurbishment.





Figure 1: Examples of outside walls in buildings of the Charterhouse Square Campus

In terms of thermal properties of windows and doors in the existing situation, they mostly do not comply with the minimum requirements set out in the England regulations. The current England norms require max. $U = 1.4 \text{ W/m}^2\text{K}$ for the windows, roof windows, glassed roof-lights and glassed doors, $U=1.0 \text{ W/m}^2\text{K}$ for opaque doors, and $U=1.2 \text{ W/m}^2\text{K}$ for Semi glassed doors.

In the modern building William Harvey Heart Centre, all the windows are PVC double glazing-windows, so the replacement is therefore not recommended.

In older buildings, existing windows have been partially replaced by modern ones, however, most of the windows have old wooden or metal frames with single or double glazing. It is recommended to replace all outdated non energy efficient windows.





Figure 2: Examples of windows/doors in buildings of the Charterhouse Square Campus

Heating Systems

The buildings in the Charterhouse Square Campus complex are supplied with thermal energy through their own district heating boiler house, which is in Dawson Hall building. In the boiler house are installed two combined heat and power plants (CHP) type Hoval EG-260 with electrical capacity 263 kW and heat capacity 375 kW and four gas boilers type ULTRAGAS 720 with capacity 720 kW. Boiler house generates heat energy for heating and domestic hot water (DHW) needs to the John Vane Science Centre, Dawson Hall, and William Harvey Heart Centre buildings. Additionally, five back-up boilers type WESSEX ModuMAX 169 are installed in William Harvey Heart Centre Building. Also, Valliant Ecotec plus 831 boiler is installed in Lodge House. Most of the boilers have not reached the end of their expected lifetime (10-15 years) and the replacement is therefore not recommended.

In general, the equipment installed in the boiler room, such as the boiler, pumps, pipes, and valves are in an acceptable condition. The pipes are generally well insulated. But the asbestos insulation was removed from some of the pipes and no new insulation was installed, according to an Assistant Campus Maintenance Manager.





Figure 4: CHP and boilers in Dawson Hall, boilers in William Harvey Heart Centre Building (back up boilers) and Lodge House

Most of the heating devices are single or double panel convector radiators and small part of cast-iron radiators in Old Anatomy and Joseph Rotblat Buildings. The thermostatic valves are partially broken, therefore it is not always possible to regulate the heating on the radiators. The installed systems in the buildings are two-pipe systems. The pipes in unheated areas are usually well insulated. Figures below show examples of installed equipment.



Figure 3: Examples of heating devices in Old Anatomy, Dawson Hall, Joseph Rotblat, and Wolfson Buildings

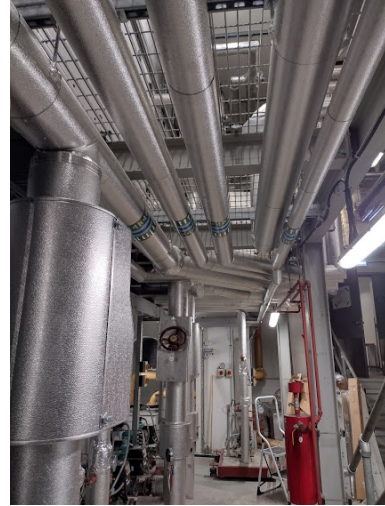


Figure 5: Examples of heating pipes insulation

Water Consumption Equipment

Water mixing taps are installed in Old Anatomy Building, Wolfson Building, William Harvey Heart Centre, John Vane Science Centre and partly in Dawson Hall building. In other buildings, it is recommended to replace separate cold and hot water taps with water mixing taps with water aerator and timer flow.

Toilet tanks in the building have two-stage flushing only in Old Anatomy Building. In other buildings it is proposed to replace the one-stage tanks with two-stage flushing.



Figure 6: Examples of water mixing taps



Figure 7: Examples of the one and two-stage toilet tanks

Lighting System

The majority of lighting systems in buildings comprise LED lighting and fluorescent lighting. Lighting Control Sensors are installed in the corridors and toilets in Wolfson Building, William Harvey Heart Centre and Dawson Hall. It is proposed to install Lighting Control Sensors in corridors and toilets in all the buildings. This will reduce energy consumption in a significant matter. Figures below show examples of installed lighting equipment.



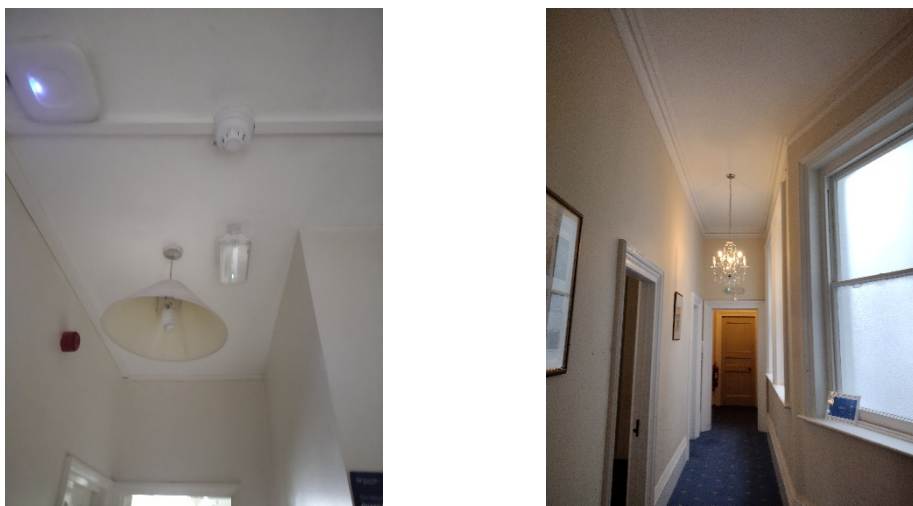


Figure 7: Examples of the lighting equipment in William Harvey Heart Centre, Dawson Hall Lodge House, and Old Anatomy Building

Proposed Energy Efficiency Measures

An overview of the preliminary energy efficiency measures is presented in the table below, while the detailed descriptions of proposed measures are summarised below.

Name of Building	Insulation of the walls	Replacement of the windows	Water mixing taps	Dual flush toilets	Sensor lighting system
Old Anatomy Building (Rees)	-	First priority	-	-	Yes
Joseph Rotblat Building	-	First priority	Yes	Yes	Yes
Wolfson Building	Yes	Second priority	-	Yes	-
William Harvey Heart Centre	-	-	-	Yes	-
John Vane Science Centre	Yes	First priority	-	Yes	Yes
Lodge House	-	First priority	Yes	Yes	Yes
Dawson Hall	Yes	First priority	Yes partly	-	-



Road to Net Zero: Energy Performance Trend

Outcome requested:	<p>That the Sustainability Committee should:</p> <ul style="list-style-type: none"> • Take assurance of this report • Consider issues that should be escalated
Executive Summary:	<p>We have continued to actively monitor the energy used across all our buildings. These data is used to identify areas of higher than normal consumption as well as explore opportunities to reduce energy wastage in line with our current six-year 30% carbon reduction target and long-term net zero aspiration.</p> <p>We are aware that the energy used across our 2020/21 were partially affected by the restrictions and partial operations of our campuses due to the COVID-19 pandemic. A summary of our energy performance compared to our 20218/19 show that the:</p> <ul style="list-style-type: none"> • Electricity used across our UK campuses reduced from 37,537 MWh to 33,2091 MWh between the 2018/19 and 2020/21 academic years • The natural gas used across our UK campuses reduced from 35,442 MWh to 31,838 MWh between the 2018/19 and 2020/21 academic years <p>Despite the above achievements, as our campuses open for full activities (pre COVID-19 status) and without doing anything, it has been projected that the:</p> <ul style="list-style-type: none"> • Electricity used across our UK campuses will increase by 2.3% compared to our 2018/19 levels (38,414 MWh) • Natural gas used across our UK campuses will reduce by 1% compared to our 2018/19 levels (35,085 MWh) <p>We are pleased to report that our application for a heat decarbonisation grant of £124,399.20 was successfully. We will invest this grant to develop our heat decarbonisation plan (HDP), which will underpin the delivery of our six-year 30% carbon reduction target and to develop our net zero strategy.</p>

Alignment with: <ul style="list-style-type: none"> • QMUL Strategy • Internal Policies/Regulations • External Statutory Requirements 	<ul style="list-style-type: none"> • Queen Mary Environmental Sustainability Policy 2020 • Queen Mary Environmental Sustainability Action Plan (ESAP) 2020-2023
Consideration of Strategic Risks:	<ul style="list-style-type: none"> • <i>Regulatory compliance</i> • <i>Reputation</i>
Subject to Prior and Onward Approval by:	<i>Not Applicable</i>
Confidentiality and Distribution:	<i>Non-restricted</i>
Equality Impact Assessment:	<i>Not Applicable</i>
Author(s) :	Philip Tamuno, Head of Sustainability Garry Pritchard, Assistant Director Operations Estates and Facilities
Date:	<i>20 October 2021</i>

Road to Net Zero: Energy Performance Trend

Paper Overview

We have continued to actively monitor the energy used across all our buildings. These data is used to identify areas of higher than normal consumption as well as explore opportunities to reduce energy wastage in line with our current six-year 30% carbon reduction target and long-term net zero aspiration.

We are aware that the energy used across our 2020/21 were partially affected by the restrictions and partial operations of our campuses due to the COVID-19 pandemic. A summary of our energy performance compared to our 2018/19 show that the:

- Electricity used across our UK campuses reduced from 37,537 MWh to 33,2091 MWh between the 2018/19 and 2020/21 academic years
- The natural gas used across our UK campuses reduced from 35,442 MWh to 31,838 MWh between the 2018/19 and 2020/21 academic years

Despite the above achievements, as our campuses open for full activities (pre COVID-19 status) and without doing anything, it has been projected that the:

- Electricity used across our UK campuses will increase by 2.3% compared to our 2018/19 levels (38,414 MWh)
- Natural gas used across our UK campuses will reduce by 1% compared to our 2018/19 levels (35,085 MWh)

We are pleased to report that our application for a heat decarbonisation grant of £124,399.20 was successfully. We will invest this grant to develop our heat decarbonisation plan (HDP), which will underpin the delivery of our six-year 30% carbon reduction target and to develop our net zero strategy.

Our 2020/21 Energy Performance

Our 2020/21 energy profile was generated based on actual consumption across our: Mile End; Charterhouse Square; Whitechapel; Chislehurst Sports Ground and Lincoln's Inn Field campuses and estimated consumption (profiled based on gross internal area and historic consumption) of our West Smithfield campus and Scape East.

See Tables 1 and 2 for summaries of the trend of energy used across our campuses, which imply that we are progressively getting closer to six-year 30% carbon reduction target.

As seen in Table 1 the electricity we used during the 2020/21 academic year was 11% lower than 2018/19.

Table 1: Trend in Electricity used across our UK Campuses

Campus	2018/19 (kWh)	2019/20 (kWh)	2020/21 (kWh)	Difference (kWh) ¹
Whitechapel	7,940,688	7,369,393	7,234,855	-705,833
Mile End	21,099,556	18,043,890	17,605,805	-3,493,751
West Smithfield	319,650	241,016	335,274	15,624
Lincoln's Inn Field	284,944	231,812	201,356	-83,588
Chislehurst	50,234	36,287	24,220	-26,014
Others	937,993	1,039,382	1,573,038	635,045
Total	37,537,191	33,001,699	33,290,882	-4,246,309

As seen in Table 2 the electricity we used during the 2020/21 academic year was 9% lower than 2018/19.

Table 2: Trend in Natural Gas used across our UK Campuses

Campus	2018/19 (kWh)	2019/20 (kWh)	2020/21 (kWh)	Difference (kWh) ¹
Whitechapel	7,842,454	6,906,288	7,172,324	-670,130
Mile End	19,823,650	14,279,255	16,936,695	-2,886,955
West Smithfield	441,949	446,314	398,558	-47,757
Lincoln's Inn Field	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Chislehurst	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Others	1,051,814	650,103	626,489	-23,614
Total	35,441,519	28,640,549	31,837,694	-3,206,480

¹ 2020/21 consumption compared to 2018/19 baseline

Our Projected 2021/22 Energy Consumption

Our projected 2021/22 energy consumption is based on the premise that our campuses will be fully operational as well as Department W and Empire House and that the projects that were funded via the Salix Tranche 3 loan of £2.46 million will deliver the associated energy savings.

As seen in Tables 3 and 4, (if we do nothing) we are expected to record a 2.3% increase and a 1% reduction in the electricity and gas used across our campuses respective. This is based on the additional assumption that we do nothing.

Table 3: Trend and Projected Electricity usage across our UK Campuses

Campus	2018/19 (kWh)	2019/20 (kWh)	2020/21 (kWh)	2021/22(kWh) ²
Whitechapel	7,940,688	7,369,393	7,234,855	7,661,090
Mile End	21,099,556	18,043,890	17,605,805	20,723,620
West Smithfield	319,650	241,016	335,274	409,073
Lincoln's Inn Field	284,944	231,812	201,356	284,944
Chislehurst	50,234	36,287	24,220	50,234
Others	937,993	1,039,382	1,573,038	2,545,107
Total	37,537,191	33,001,699	33,290,882	38,413,973

Table 4: Trend and Projected Natural Gas usage across our UK Campuses

Campus	2018/19 (kWh)	2019/20 (kWh)	2020/21 (kWh)	2020/21 (kWh) ²
Whitechapel	7,842,454	6,906,288	7,172,324	7,227,272
Mile End	19,823,650	14,279,255	16,936,695	19,264,710
West Smithfield	441,949	446,314	398,558	427,003
Lincoln's Inn Field	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Chislehurst	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Others	1,051,814	650,103	626,489	1,178,031
Total	35,441,519	28,640,549	31,837,694	35,084,705

² Projection

Salix Tranche 3 Loan: Energy Savings

The suite of projects that were implemented from the £2.46 million energy efficiency loan from the Salix were secured in March 2020 have all been completed and commissioned. These projects are estimated to deliver 2,321,808 kWh (electricity) and 4,157,720 kWh (gas) savings.

The savings associated with these projects have been guaranteed and these will be monitored against the baseline energy used across the fiscal electricity and gas meters associated with these buildings.

Table 4 summarises the projected savings from these implemented projects. These projects will contribute to the delivery of our six-year, 30% carbon reduction target and our long-term net zero aspiration.

Table 4: Trend and Projected Natural Gas usage across our UK Campuses

Project Title / Description	Cost (£)	Projected Savings	
		Electricity (kWh)	Gas (kWh)
Joseph Priestley: Plate Heat Exchanger	£397,907	105,780	1,763,680
BMS Upgrade: Whitechapel Campus	£602,946	727,382	1,358,785
BMS Upgrade: Arts Two Building	£32,573	34,526	39,742
BMS Upgrade: Computer Science Building	£16,629	56,325	100,627
BMS Upgrade: Engineering Building	£83,025	201,279	400,434
BMS Upgrade: G. E. Fogg Building	£48,783	164,607	37,477
BMS Upgrade: G. O. Jones Building	£8,629	31,010	21,069
BMS Upgrade: Peoples Palace Building	£105,017	85,970	435,906
Whitechapel Lighting Upgrade	£1,170,000	914,929	NA
Total	£2,465,509	2,321,808	4,157,720

Heat Decarbonisation Plan (HDP)

The £124,399.20 grant that we recently received is being used to develop our heat decarbonisation plan (HDP). This HDP will serve as the framework on which we will deliver our net zero target.

Conclusion and Recommendations

That the Sustainability Committee should:

- Take assurance of this report
- Consider issues that should be escalated