



ESAP: Environmental Sustainability Performance Update

Outcome requested:	That the Sustainability Committee should: <ul style="list-style-type: none"> • Take assurance of our current environmental sustainability performance • Consider issues that should be escalated
Executive Summary:	This report contain the main highlights of our environmental sustainability performances: <ul style="list-style-type: none"> • We are pleased to report that we recently attained EcoCampus ISO 14001:2015 EMS Bronze award • Twelves colleagues successfully completed the foundation certificate in environmental management (FCEM) • These 12 colleagues are currently Environmental Associates and are involved in our journey to attaining ISO 14001:2015 EMS • We hope that all stakeholders across Queen Mary will support these 12 colleagues in our journey to attain ISO 14001:2015 EMS by July 2022 • Initiatives that we have implemented to embed good environmental practices across all areas of our operations
Alignment with: <ul style="list-style-type: none"> • QMUL Strategy • Internal Policies/Regulations • External Statutory Requirements 	<ul style="list-style-type: none"> • The Environmental Protection Act 1990 • Clean Air Act 1993 • The Climate Change Act 2008 • The Waste (England and Wales) Regulations 2011 • Water Framework Directive 2015 • The Energy Act 2016 • Clean Air Framework 2017 • Clean Air Strategy 2019 • Environmental sustainability policy 2020 • Environmental sustainability action plan (ESAP) 2020
Consideration of Strategic Risks:	<ul style="list-style-type: none"> • Commitment to comply with all relevant regulations
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) :	Philip Tamuno, Head of Sustainability
Owners:	Ian McManus, Director of Estates and Facilities Philippa Lloyd, Vice Principal Policy and Strategy Partnership
Date:	<i>21 January 2021</i>

Environmental Sustainability Performance Update

1. Overview

This report contains the main highlights of our environmental sustainability performances:

- We are pleased to report that we recently attained EcoCampus ISO 14001:2015 EMS Bronze award
- Twelve colleagues successfully completed the foundation certificate in environmental management (FCEM)
- These 12 colleagues are currently Environmental Associates and are involved in our journey to attaining ISO 14001:2015 EMS
- We hope that all stakeholders across Queen Mary will support these 12 colleagues in our journey to attain ISO 14001:2015 EMS by July 2022
- Initiatives that we have implemented to embed good environmental practices across all areas of our operations

2. Environmental Management System

We are currently using the EcoCampus flexible framework (a phased approach to attaining ISO 14001:2015) to implement a structured environmental management system (EMS). We would use our ISO 14001:2015 EMS certification to manage and control our environmental risks and associated impacts.

We are also using the EcoCampus framework to provide assurance that we are compliant with all relevant environmental regulation, achieve our environmental objectives and enhance our environmental performance.

We are pleased to report that we successfully achieved EcoCampus ISO 14001:2015 EMS Bronze award after the external audit carried out on 10 December 2020. We are currently working toward attaining the Silver award by April 2021.

3. Environmental Associates

As part of our commitment to attain ISO 14001:2015 EMS within the next 18 months, we recently delivered the five-day Foundation Certificate of Environmental Management (FCEM) course to 13 colleagues.

Below are the details of the 13 colleagues that attended the FCEM course:

1. Ciaran Donnelly (Information Support Assistant, Library Services)
2. Emanuela Nova (Placement Officer, School of Economics and Finance)
3. Martin Sharp (Data Analyst, Institute of Health Services Education)
4. Kate Thornton (Technical Resource Manager, Office of the Principal)
5. Jamal Mohammed (Sustainability Support Officer, Estates and Facilities Directorate)
6. Claire Corley (Hospitality Manager, Estates and Facilities)
7. Scott Keeble (Pottering and Postal Services Manager, Estates and Facilities)
8. Ravi Anand Dhirani (PhD Researcher, School of Engineering and Material Sciences)
9. Maria Caballero-Blaya (PA to Institute Director, School of Medicine and Dentistry)
10. Thomas Stockton (Sustainability Coordinator, Students' Union)
11. Lili Csenge Csorba (Undergraduate, School of Biological and Chemical Sciences)
12. Dr Sara Caxaria (Postdoctoral Researcher, William Harvey Research Institute)
13. Dr Angela Rovera (Dentist and PhD Researcher, Institute of Dentistry)

Twelve of these colleagues successfully passed the FCEM assessment and are currently Associate Members of the Institute of Environmental Management and Assessment (IEMA).

These Environmental Associates would be involved in our journey to attain ISO 14001:2015 certification and to embed good environmental practices across all areas of our operations.

The table below summarises the areas of our EMS that that we are currently working on as part of our commitment to attain EcoCampus Silver Award by April 2021.

ISO 14001:2015: Environmental Management System Audit Clause	Environmental Associate
<p>Environmental Compliance and Obligations:</p> <ul style="list-style-type: none"> • The institution shall develop a process to identify, access and review compliance obligations related to its environmental aspects. • Identify and determine how relevant compliance obligations apply to the institution, and the associated risks and opportunities. • The institution shall maintain documented information of its conformance to compliance obligations. 	<ul style="list-style-type: none"> • Jamal Mohammed • Thomas Stockton • Ciaran Donnelly
<p>Environmental Aspects:</p> <ul style="list-style-type: none"> • The institution shall have a process for identifying environmental aspects and assessing their significance. • The institution shall identify all aspects and associated impacts related to the institutions activities, products and services, considering a life cycle perspective. • The institution shall determine significant environmental aspects using valid criteria. 	<ul style="list-style-type: none"> • Angela Rovera • Maria Caballero-Blaya • Martin Sharp
<p>Planning Action:</p> <ul style="list-style-type: none"> • The institution shall plan to take actions to address its environmental aspects, compliance obligations and risks and opportunities. 	<ul style="list-style-type: none"> • Lili Csenge • Kate Thornton (LEAF¹ Coordinator)
<p>Environmental Objectives:</p> <ul style="list-style-type: none"> • The institution shall have a process for setting and reviewing environmental objectives. • Environmental objectives shall be set at relevant functions and levels, taking into account the institutions significant environmental aspects, compliance obligations and risks and opportunities. • The institution shall plan actions to achieve its objectives. 	<ul style="list-style-type: none"> • Lili Csenge Csorba • Emanuela Nova • Sara Caxaria
<p>Environmental Policy:</p> <ul style="list-style-type: none"> • The institution shall have a process for establishing, implementing and maintaining an environmental policy. • Top management shall establish and document an Environmental Policy. • The institution shall communicate the environmental policy internally and make it available to interested parties. 	<ul style="list-style-type: none"> • Ciaran Donnelly

¹ Laboratory Efficiency Assessment Framework

ISO 14001:2015: Environmental Management System Audit Clause	Environmental Associate
<p>Communication:</p> <ul style="list-style-type: none"> The institution shall communicate internally on the EMS. The institution shall communicate externally information relevant to EMS. 	<ul style="list-style-type: none"> Ravi Anand Dhirani

4. Embedding Environmental Sustainability

We have continued to engage with all relevant stakeholders as well as provide opportunities for all staff and students to be involved in our environmental sustainability journey and to embed good environmental practices across all areas of our operations.

Below are some approaches that we are exploring to embed good environmental practices across Queen Mary:

- Students across all Faculties have continued to register and complete the online CPD course on sustainable development. We are pleased to report that as at 21 January 2021, 213 students have registered for this course.
- In conjunction with the above, we are currently collaborating with Professor Kate Heppell by offering students in the School of Geography the prospect of undertaking dissertations that are aligned with our environmental sustainability priorities.
- We were recently (on 17 November 2020) involved in the discussion panel coordinated by Queen Mary's Legal Advice Centre to mark the 2nd Global Annual Day of Action for Climate Change. This discussion was on "Should Trees Have Standing?" Over 50 individuals participated in this session.
- We have continued to offer all professional services and academic staff (including PhD Researchers) the opportunity to participate in a CPD course on environmental sustainability skills for the workforce (ESSW). Twelve colleagues successfully completed this course in September 2020 (64 colleagues have successfully completed this course between May and September 2020).

The next ESSW session is scheduled to be delivered on 17 February 2021 between 09:00 Hours and 17:00 Hours. The last date to register for this course is Friday 5 February 2021.

5. Recommendations

That the Sustainability Committee:

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



Sustainability Leadership Scorecard: Procurement

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>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 current SLS score is 23/32, and with the ongoing initiatives we anticipate the increase to 30/32.</p> <p>Initiatives in motion to achieve the increase include:</p> <ul style="list-style-type: none"> • Review and monitoring via the Sustainable Procurement Group • Embedding further sustainability criteria's into tenders and contract management • Further developing the training and support for all colleagues. <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 Consideration by:	Not Applicable
Confidentiality and Distribution:	<i>Non-restricted</i>
Equality Impact Assessment:	<i>Not applicable</i>
Author(s) :	Bahar Shahin, Head of Procurement
Date:	<i>7 January 2021</i>

Sustainability Leadership Scorecard: Procurement

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 focusses 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 23/32, and with the ongoing initiatives we anticipate the increase to 30/32.

Initiatives in motion to achieve the increase include:

1. Review and monitoring via the Sustainable Procurement Group
2. Embedding further sustainability criteria's 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.

Procurements 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 Procurements assessment against the definitions provided, allocating a score for where we are currently and where we would like to get to by 31 July 2022.

Our overall current score is 23/32 and we believe, based on planned activities, we can reach 30/32.

Our key areas of improvement are:

- Action planning
- Link to the curriculum.

Improvements are based on our plans to further develop sustainability KPIs into contracts, publishing policies on external website, and raise further awareness through training and events.

		1	2	3	4
Policy & Strategy	Current	Yellow	Yellow	Yellow	Yellow
	Target	Green	Green	Green	Green
Stakeholder engagement	Current	Yellow	Yellow	Yellow	White
	Target	Green	Green	Green	Green
Action planning	Current	Yellow	Yellow	White	White
	Target	Green	Green	Green	White
Measurement	Current	Yellow	Yellow	Yellow	White
	Target	Green	Green	Green	Green
Communication	Current	Yellow	Yellow	Yellow	White
	Target	Green	Green	Green	Green
Training & support	Current	Yellow	Yellow	Yellow	White
	Target	Green	Green	Green	Green
Implementation & performance	Current	Yellow	Yellow	Yellow	White
	Target	Green	Green	Green	Green
Link to the curriculum	Current	Yellow	Yellow	White	White
	Target	Green	Green	Green	White

Details of SLS results

1. Policy & Strategy

The institution's Procurement Strategies are well developed and aligned with the institution's Sustainability Strategies. Activity is reviewed on a regular basis. There are clear reporting lines into formal institution management structures.

Current score: 4

Target: 4

<p>We currently has a Procurement strategy which includes ethical procurement, reported regularly to the Chief Financial Officer.</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>
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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.

<p>Current score: 3</p> <p>Policies and practices are reviewed by key stakeholders and input. Predominantly via Sustainable procurement group, and Sustainability Committee.</p>	<p>Target: 4</p> <p>The current initiative with the North East London Anchor may assist o focus more on local companies and suppliers, whilst ensuring compliance and transparency.</p>
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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.

<p>Current score: 2</p> <p>Sustainability impacts where relevant and proportional to the procurement is factored into the evaluation and contracts. The Defra prioritisation tools assists to identify the areas of impact and opportunity. This provides a strategic direction.</p>	<p>Target: 3</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 SLAs & KPIs built into the contracts.</p>
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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.

<p>Current score: 3</p> <p>All relevant and significant elements of contracts as reviewed and measured as part of the contract management. At</p>	<p>Target: 4</p> <p>Working with the sustainability team to identify suitable and value adding SLAs/</p>
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present there are not any SLAs/ KPIs built into contracts for Sustainability

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

We have sustainable procurement policy in place and also information for internal stakeholders.
(<http://qm-web.finance.qmul.ac.uk/purchasing/sustainable-procurement/>)

Target: 4

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

Training is available to all staff at Queen Mary.

As well as providing a buyer training session we also have a dedicated Web page created and shared with all staff through communications.
Training includes: Guide to Modern Slavery, Protecting Human rights, Bribery act, Introduction to Sustainable Procurement, and supplier due diligence.

We monitor the take up.

(<http://qm-web.finance.qmul.ac.uk/purchasing/training/>)

Target: 4

Maintain the available training, further communication to remind colleagues.

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.

<p>Current score: 3</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: 4</p> <p>The target is to maintain our current standard and continuously improve through engagement with colleagues across Queen Mary.</p>
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8. Link to the curriculum

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

<p>Current score: 2</p> <p>Responsible Procurement event held in collaboration of LUPC and Geography Dept in the Octagon in 2019.</p> <p>Various procurements are conducted to support teaching and learning at the Queen Mary.</p>	<p>Target: 3</p> <p>Raise the profile through additional events and wider engagement.</p>
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Leadership Scorecard: Catering (Food and Drink)

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>This report presents an overview of QM Food & Hospitality through the lens of the Sustainability Leadership Scorecard (SLS). Catering & Hospitality has recently been re-branded as QM Food & QM Hospitality to re-inforce the food and drink offer as core to the student and staff community. The QM food team has developed a number of environmental and sustainability initiatives, but the COVID-19 pandemic has without doubt regressed any progress, with disappointing outcomes on high use of disposables and stalling new initiatives. A new and clear strategic direction is required for 2021 and beyond.</p> <p>The focus for the QM Food team will be on the three 'R's of Reduce, Re-use and Recycle with a greater use of low food miles produce, less use of ruminant meat, plant based (compostable) packaging, and a higher ratio of plant based food options.</p> <p>We anticipate this work increasing our SLS score from 10/32 to 24/32.</p>
Alignment with: <ul style="list-style-type: none"> • QMUL Strategy • Internal Policies/Regulations • External Statutory Requirements 	<ul style="list-style-type: none"> • Sustainable Catering Policy 2020 • Environmental Sustainability Policy 2020 • Environmental Sustainability Action Plan (ESAP) 2020
Consideration of Strategic Risks:	Not Applicable
Subject to Prior and Onward Consideration by:	Not Applicable
Confidentiality and Distribution:	<i>Non-restricted</i>

Equality Impact Assessment:	<i>Not applicable</i>
Author(s) :	James Cornwall-Walker, Head of Queen Mary Food Claire Corley, Queen Mary Hospitality Manager Matthew Weston, Queen Mary Food Executive Head Chef
Date:	<i>7 January 2021</i>

Sustainability Leadership Scorecard: Catering (Food & Drink)

Executive summary

This report presents an overview of QM Food & Hospitality through the lens of the Sustainability Leadership Scorecard (SLS). Catering & Hospitality has recently been re-branded as QM Food & QM Hospitality to re-inforce the food and drink offer as core to the student and staff community. The QM food team has developed a number of environmental and sustainability initiatives, but the COVID-19 pandemic has without doubt regressed any progress, with disappointing outcomes on high use of disposables and stalling new initiatives. A new and clear strategic direction is required for 2021 and beyond.

The focus for the QM Food team will be on the three 'R's of Reduce, Re-use and Recycle with a greater use of low food miles produce, less use of ruminant meat, plant based (compostable) packaging, and a higher ratio of plant based food options.

We anticipate this work increasing our SLS score from 10/32 to 24/32.

Queen Mary Food

Unlike many HEIs, Queen Mary has chosen to deliver its food offering with team a employed by and part of the QM community. This sense of belonging is reflective of the ethos of the University that prides itself on its deep roots within the local community and the diverse ethnic nature of its student body and staff complement.

Over the last four years, the catering team have in particular developed a robust and successful hospitality business turning over in excess of £1M annually – events ranging from conference refreshments to street stalls for open days and graduations to elegant dining for weddings and dinners in the Octagon. This all running in parallel with the core business of retail catering at five different cafes and restaurants across the Mile End & Whitechapel campuses.

The remit of the catering and hospitality function has been to produce and deliver a high quality food and drink offer at price points that deliver value to the consumer with a strong commercial focus on food and staff costs to ensure the catering is zero cost to the University. The financial year 2019-20 was on target to achieve this until the COVID-19 pandemic removed any opportunity to achieve this.

Food sustainability, reduction of food wastage, lowering food miles and increasing plant based menu offers are not just 'green' measures, but relevant business goals to reduce food costs and drive efficiencies. The challenge for QM food on its sustainability journey

is to further develop the policy and to evidence actions, communicate effectively and make sustainability as core a value to the team as delivering great food.

Overview of SLS results – current scores and target scores

Each Framework Area is assessed against eight criteria, outlined in the table below. QM Food has assessed itself and its practices, allocating a score for where we are currently and where we would like to get to over the next year.

Our overall current score is 10/32 and we believe, based on planned activities, we can reach 24/32. Our key areas of improvement are the fourfold: Policy & Strategy, Stakeholder Engagement, Action planning and Communication.

Improvements are based on plans to further develop the policy and strategic direction; improve our communication, eg through better use of social media, to drive up stakeholder engagement and time define and deliver on agreed actions.

		0	1	2	3	4
Policy & Strategy	Current				X	
	Target					X
Stakeholder engagement	Current			X		
	Target					X
Action planning	Current	X				
	Target				X	
Measurement	Current		X			
	Target			X		
Communication	Current		X			
	Target				X	
Training & support	Current		X			
	Target				X	
Implementation & performance	Current			X		
	Target				X	
Link to the curriculum	Current	X				
	Target			X		

Details of SLS results

1. Policy & Strategy

The Institution’s sustainable food and drink policy and action plan is produced in support of sustainable food and drink provision, health options and local suppliers. Activity is reviewed on a regular basis. There are clear reporting lines into formal institution management structures.

Current score: 3 There is an aligned policy regarding sustainable food and drink and it is reviewed regularly clear reporting lines but not within the formal management structure.	Target: 4 There is an aligned policy for sustainable food and drink, it is reviewed regularly with clear reporting lines within the formal management structure.
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We have a clear policy but no real strategic plan which will need to be in place within the first quarter of 2021 and which will address an further commitment to sustainable food and set out a strategy to use more local supply routes and increased plant based offers

2. Stakeholder engagement

Key stakeholders (including staff, students and contractors) actively inform the review of the sustainable food and drink policy and action plan and shape its development.

Current score: 2 The policy is reviewed but does not yet involve all relevant stakeholders	Target: 4 Relevant stakeholders are actively involved in informing the process and help shape its development. The policy is leading good practice
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To date only the students union has been partially engaged with the policy via their own environmental coordinator, with some minor engagement with the University sustainability management team. This is as much to do with the fact that there is no real strategic plan in place to be able to engage with other stakeholders.

With a plan in place, we would expect to be able to request all relevant stakeholders to make a positive contribution to shaping and further developing the policy

3. Action planning

Action Plans, which incorporate objectives and associated targets, drive the cycles of activity across the institution in relation to sustainable food and drink provision

Current score: 0 There are only informal / ad hoc plans	Target: 3 Action plans incorporate objectives but little evidence of driving activity across the institution
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An annual sustainability action plan will ned to be drafted; this will be a ‘living’ document that will be reviewed/ updated monthly to ensure targets are being met. Those that are not met will stay on the plan or may be re-defined/ re-prioritised in light of other targets being completed, amended or deleted.

4. Measurement

The impacts and benefits of the sustainable food and drink policy and action plan are routinely monitored and evaluated as part of existing institution practice. There is evidence of continual improvement and feedback loops.

Current score: 1 Some impacts and benefits are informally monitored and evaluated.	Target: 2 Many impacts and benefits of the policy are formally routinely monitored as part of existing institutional practices
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With the proposed development of the Sustainability Action Plan, it is likely that we will need a year to embed communications and reporting before looking to improve a score above a modest increment of one point.

5. Communication

The sustainable food and drink 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: 1 There is a policy and an informal approach to communicating with stakeholders.	Target: 3 There is a policy with clear high level support and a formal communication approach with all stakeholders.
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The further development of a robust policy and improved stakeholder engagement aligned with a formalised annual action plan, which will become part of the QM commercial team’s overall sustainability policy, will ensure that commercial can ‘sing as one voice’ and have a clear communication process with all stakeholders.

6. Training and Support

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

Current score: 1 There are ad hoc training opportunities available as required	Target: 3 A clear training and support programme is in place for all staff.
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Individuals within the QM food team have had the opportunity to attend environmental management and training courses, but these have been limited to managers. Part of the action plan will be introduce took box talks (‘bite’ size training sessions) that develop an evolving progression on sustainable food and drink to be rolled out to the full QM food team.

7. Implementation and performance

There is evidence of staff and student-led sustainable food and drink 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: 2	Target: 3
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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.
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The QM food team has had some limited collaboration with the students union regarding sustainability in general and we have led some initiatives within the outlets to promote less food wastage and incorporating a 'waste food' menu within the hospitality menu brochure. Most emphasis has been on non food sustainability such as compostable packaging and re-use hot beverage cups, something which has unfortunately gone backwards during the pandemic, but will look to reverse in 2021 and develop more initiatives University wide.

8. Link to the curriculum

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

Current score: 0 Practice is not linked or embedded into curriculum or research.	Target: 2 Practice is formally linked to and embedded into some elements of curriculum or research.
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Not being core activity, more challenging to link food and drink into the curriculum, but our aim would be to collaborate with the environmental and sustainability team to see where food and drink can be linked to curriculum activities. 179 students have undertaken an informal environmental sustainability course, but not specifically



Leadership Scorecard: Waste Management

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:	This report presents an overview of Queen Mary waste management through the lens of the Sustainability Leadership Scorecard (SLS).
Alignment with: <ul style="list-style-type: none"> • QMUL Strategy • Internal Policies/Regulations • External Statutory Requirements 	<ul style="list-style-type: none"> • Sustainable Catering Policy 2020 • Environmental Sustainability Policy 2020 • Environmental Sustainability Action Plan (ESAP) 2020
Consideration of Strategic Risks:	Not Applicable
Subject to Prior and Onward Consideration by:	Not Applicable
Confidentiality and Distribution:	<i>Non-restricted</i>
Equality Impact Assessment:	<i>Not applicable</i>
Author(s) :	Scott Keeble, Portering and Postal Manager Susan Sabeva, Facilities Manager
Date:	<i>11 January 2021</i>

Sustainability Leadership Scorecard: Waste Management

Overview of SLS results – current scores and target scores

Each Framework Area is assessed against eight criteria, outlined in the table below. The estates team has assessed itself and its practices, allocating a score for where we are currently and where we would like to get to over the next year.

Our overall current score is 4/32 and we believe, based on planned activities, we can reach 21/32. Our key areas of improvement are: Policy and Strategy, Stakeholder engagement and Communication, we believe if we can improve these aspects the rest of the scorecard will follow with good results.

Improvements are based on plans to further develop the policy and strategic direction; improve our communication, eg through better use of social media, to drive up stakeholder engagement and time define and deliver on agreed actions.

		0	1	2	3	4
Policy & Strategy	Current		X			
	Target			X		
Stakeholder engagement	Current	X				
	Target				X	
Action planning	Current	X				
	Target				X	
Measurement	Current		X			
	Target			X		
Communication	Current	X				
	Target				X	
Training & support	Current		X			
	Target				X	
Implementation & performance	Current		X			
	Target				X	
Link to the curriculum	Current	X				
	Target			X		

Details of SLS results

1. Policy & Strategy

The Institution's Resource and Waste Management Strategy is aligned with the institutions carbon Management strategy and the 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: 1 There is Policy regarding resources and waste but it is not aligned with the sustainability strategy and/or Carbon Management plan.	Target: 2 There is an aligned Policy regarding resource and Waste and it is reviewed regularly but here are no clear reporting lines.
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QM has a Waste management policy and an environmental sustainability strategy however the 2 are not aligned fully with no evidence as to when the documents were last reviewed.

Targets:

- Align the Waste management Policy and the sustainability Strategy, the strategy to include plans referencing the ISO14001 and ISO50001, Where and how we may look to invest in waste management in the future and how we may engage more adequately with staff student and stakeholders.
- Ensure the Waste management Policy has reference to previous and upcoming review dates and ensure those reviews are completed with key stakeholders.

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: 0 Relevant stakeholders have not yet been identified.	Target: 3 Not all relevant stakeholders are actively involved in the review.
--	--

There is currently no evidence of a review of the Waste Management Policy by any stakeholders, and not all key stakeholders are engaged with regarding waste.

Targets:

- Continually Identify QM's key stakeholders and begin to engage with them regarding our current waste Policies and Strategies.
- Invite engaged key stakeholders to review the current Waste Management Policy, and Waste Management Strategy encouraging them to give feedback and ideas.
- Gain a few key stakeholders that are continuously participating and contributing to the policy/strategy review.

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: 0 There are only informal / ad hoc plans	Target: 3 Action plans incorporate objectives but little evidence of driving activity across the institution
---	--

Plans are in place to improve QM's Waste Management process and they currently align with the policies and strategies, however these plans are currently Adhoc with no formal action plans.

Targets:

- Draft an action plan referring to Waste management strategy incorporating time scaled objectives, this can be a live document that can be updated by any relevant key stakeholders.
- Engage with key stakeholders to contribute towards the action plan and what the best next steps may look like.

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: 1 Some impacts and benefits are informally monitored and evaluated.	Target: 2 Many impacts and benefits of the policy are formally routinely monitored as part of existing institutional practices
--	--

As QM begin to implement a Waste management Action plan, the impacts and benefits will be able to become appropriately evaluated and monitored. Some impacts are already monitored for example better world books, as well as monitoring our waste segregation monthly.

Targets:

- Review the Waste Management Strategy and prioritise which items need to begin being formally monitored.
- Continually develop the items which are being monitored and as the document evolves ensure any new items are monitored from the outset.
- Ensure that any information gathered is evidenced and documented.

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: 0 There is a draft Policy in the public domain	Target: 3 There is a policy with clear high level support and a formal communication approach with all stakeholders.
---	--

There is currently a Waste Management Strategy but it is not in the public domain and the current engagement with stakeholders is informal and AdHoc

Targets:

- Review the current waste management strategy and make it accessible in the public domain.
- Set up a formal process for engaging with key stakeholders, through emails, newsletters meetings and reviews. Engaging high level support to push the strategy through all teams across all campuses.

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: 1 There are ad hoc training opportunities available as required	Target: 3 A clear training and support programme is in place for all staff.
--	---

There have been a lot of AdHoc training opportunities for end user staff on how to use our equipment, as well as some management training courses on environmental sustainability. However, there is no structure for what training QM wishes its staff to attend.

Targets:

- Meet with key stakeholders to determine what training is needed across QM within different roles, from end users to management.
- Compile the list into a training programme determining how urgent the pieces of training are, can they be included in an induction or in the first few weeks of starting at QM etc.
- Make the training programme accessible to managers so they can begin to ensure all member s of their teams are given the relevant training.

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: 1 There is some evidence of staff or student lead initiatives which are restricted to student groups or sustainability champions but not across the whole institution.	Target: 3 There is good evidence of staff and student-led initiatives across the institution, but it does not go beyond the institution.
---	--

QM do have staff or student lead initiatives such as warp-it or the rebranding of our bins, however there is not as much communication as there possibly should be and the initiatives are not always progressed throughout the institution.

Targets:

- Ensure all initiatives are communicated correctly throughout QM, liaising with key stakeholders who can convey the messages needed to their teams.
- Working together with key stakeholders to ensure any initiatives brought forward work for all departments and stakeholders within the institution, especially with SU to ensure both staff and students have the same messages conveyed to them across university.

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: 0 Practice is not linked or embedded into curriculum or research.	Target: 2 Practice is formally linked to and embedded into some elements of curriculum or research.
--	---

There are currently no waste management practices linked to the curriculum or research.

Targets:

- Engage with key stakeholders to look at ways QM could deliver waste management within the curriculum
- Engage with key stakeholders to look at ways in which QM could management waste to research at QM
- Ensure both of the above bullet points are formally delivered, have regular meeting to provide updates and gain feedback.



Queen Mary Students' Union Sustainability Update Oct 2020-Jan 2021

Outcome requested:	Sustainability Committee is asked to note the attached paper.
Executive Summary:	An update on recent sustainability activities undertaken by Queen Mary Students' Union and student groups.
Alignment with: <ul style="list-style-type: none"> • QMUL Strategy • Internal Policies/Regulations • External Statutory Requirements 	Not Applicable
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) :	Tom Stockton, Sustainability Coordinator
Date:	<i>8 January 2020</i>



Orchard Planting Project

Early December saw the start of an exciting long-term project to enhance biodiversity on our Mile End Campus through the creation of a community orchard.

With the support of the Grounds team, in particular Dimi Sopsis and Scott Keeble, 20 student volunteers joined staff from the Grounds team to plant 60 apple and pear trees and 190 gooseberry and wild raspberry shrubs in the areas surrounding student accommodation including Pooley House, Maurice Court and Beaumont Court.

It is hoped that the plants will be fruit bearing within 2 years, providing support for local wildlife, colourful blossoms and free fruit for those living and working on campus.

As well as orchard planting, our biodiversity volunteering and canal clean-ups have continued when Covid restrictions permit.

[Find out more.](#)

Bow Foodbank Holiday Appeal

As we were unable to run the winter version of our Reuse scheme therefore students involved in the Green Mary sustainability group instead launched an appeal to support the work of Bow Foodbank. This involved collecting in person item donations, financial donations online and promoting opportunities to volunteer to students and staff.

Working together with colleagues in Residences and Students' Union outlets, £300 of donations and approximately 400 items of food & toiletry donations were collected in November and December.

[Find out more.](#)

Student Sustainability Board & Student Council

The newly established Sustainability Board, part of the Students' Union representative structures held its first meeting in November. Topics discussed included developing an Environmental Policy for the Students' Union and embedding sustainability further into Students' Union activities.

Several sustainability related motions, were passed at December's Student Council. These relate to creating a second Sustainability Officer to represent students at our Whitechapel campus and encouraging a review of the University's Ethical Investment Policy to ensure it reflects sustainability values.

Sustainability & Student Groups

Our 3 environmentally focussed student groups (Green Mary, Environmental Society & Sustain @ BL) in 2020/21 have held a range of online activities in the year to date including:

- Online film screening of '2040'
- Climate Justice Event and Workshop
- Black History Month Climate Clinic discussion events

Hedgehog Friendly Campus Accreditation

Taylor Sanzari, a student involved in the Green Mary Group has been working with representatives from the British Hedgehog Preservation Society to set Queen Mary on the path to achieving the Bronze Accreditation. This involves a number of hedgehog awareness raising communications to share with staff and students as well as ensuring our green spaces are hedgehog friendly.

[Find out more.](#)



Sustainable Catering Policy

Outcome requested:	<p>Sustainability Committee is asked to:</p> <ul style="list-style-type: none"> • Consider the sustainable food and catering policy • Approve the sustainable catering policy
Executive Summary:	<p>The sustainable catering policy sets out the sustainable food and catering of Queen Mary, University of London (Queen Mary). The content of this updated policy have not been changed.</p> <p>The only difference in the previous and the current version is that QMUL have been replaced with Queen Mary.</p>
Alignment with: <ul style="list-style-type: none"> • QMUL Strategy • Internal Policies/Regulations • External Statutory Requirements 	<ul style="list-style-type: none"> • The Environmental Protection Act 1990 • Sustainable Procurement Action Plan 2007 • Climate Change Act 2008 • Energy Act 2016 • Environmental Sustainability Policy 2020 • Environmental Sustainability Action Plan (ESAP) 2020
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) :	Philip Tamuno, Head of Sustainability
Date:	<i>20 January 2021</i>

Sustainable Catering Policy

Queen Mary University of London (Queen Mary) is a Russell Group University and one of UK's leading research-focused higher education institutions. We offer our students a stimulating, supportive and high quality learning experience.

Queen Mary is committed to exploring all opportunities, which ensures that all food bought, consumed and prepared across our catering outlets have as little as possible impact on the environment. We will also continue to:

- Use local, seasonally available ingredients as standard, to minimise food transport and storage
- Exclude fish species identified as most at risk by the Marine Conservation Society and specifying fish only from sustainable sources
- Ensure that meat, dairy and egg products are produced to high environmental, ethical and animal welfare standards
- Buy fair-trade certified products for foods and drinks imported from poorer countries to ensure a fair deal for disadvantaged producers
- Specify produce from farming systems that have minimal environmental harm and under ethical standards
- Increase the proportion of meals rich in fruit, vegetables, pulses and nuts, while reducing foods of animal origin (meat, dairy products and eggs), as livestock farming is one of the most significant contributors to climate change
- Embed energy efficiency and good energy management practices across all our catering processes
- Ensure that free tap water is available as alternative to single use bottled water across our Campuses
- Ensure that all major catering and food suppliers have certified environmental management system



Ian McManus
Director of Estates, Facilities and Capital Development



Energy Performance Report

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:	The highlights of this report are: <ul style="list-style-type: none"> • Our projected year end energy performance • The performance of our current fixed-term electricity and gas supply services contracts are currently performing beyond expectations • An overview of our 2019/20 DEC and EPC scores was a 8.5% improvement compared to our 2018/19 average scores • An overview of the delivery our Salix Tranche 3 projects. The revised completion date of these projects is March 2021. • Details of the £5.76 Million grant applications we submitted to Salix as part of the government's current decarbonisation grant • A summary of the performances of our Salix Tranche 2 projects
Alignment with: <ul style="list-style-type: none"> • QMUL Strategy • Internal Policies/Regulations • External Statutory Requirements 	<ul style="list-style-type: none"> • The Environmental Protection Act 1990 • Clean Air Act 1993 • The Climate Change Act 2008 • The Energy Act 2016 • Environmental sustainability policy 2020 • Environmental sustainability action plan (ESAP) 2020
Consideration of Strategic Risks:	This forms part of the QMUL Value for Money (VfM) and compliance work.
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) :	Philip Tamuno, Head of Sustainability Garry Pritchard, Assistant Director Estates and Facility Operations
Date:	<i>20 January 2021</i>

1. Report Overview

The highlights of this report are:

- Our projected year end energy performance
- The performance of our current fixed-term electricity and gas supply services contracts are currently performing beyond expectations
- An overview of our 2019/20 DEC and EPC scores was a 8.5% improvement compared to our 2018/19 average scores
- An overview of the delivery of our Salix Tranche 3 projects. The revised completion date of these projects is March 2021.
- Details of the £5.76 Million grant applications we submitted to Salix as part of the government's current decarbonisation grant
- A summary of the performances of our Salix Tranche 2 projects

2. 2020/21 Energy Budget Performance

We have put in place a robust energy monitoring and management system to ensure that all our invoices are accurate.

During the transition from our previous to current energy services contract, we identified that two of our meters were significantly under-invoiced between October 2018 and September 2020. These supply meters are:

- Stocks Court East Electricity: Approximately £25,000 under-invoiced
- Queens Building Gas: Approximately £155,000 for under-invoiced

Despite the above unexpected invoices and based on our August to November 2020 electricity and gas consumption and significantly lower electricity and gas unit rates; we are optimistic that our end of year energy spend would be £400,000 circa lower than our 2020/21 budget of £5.49 Million.

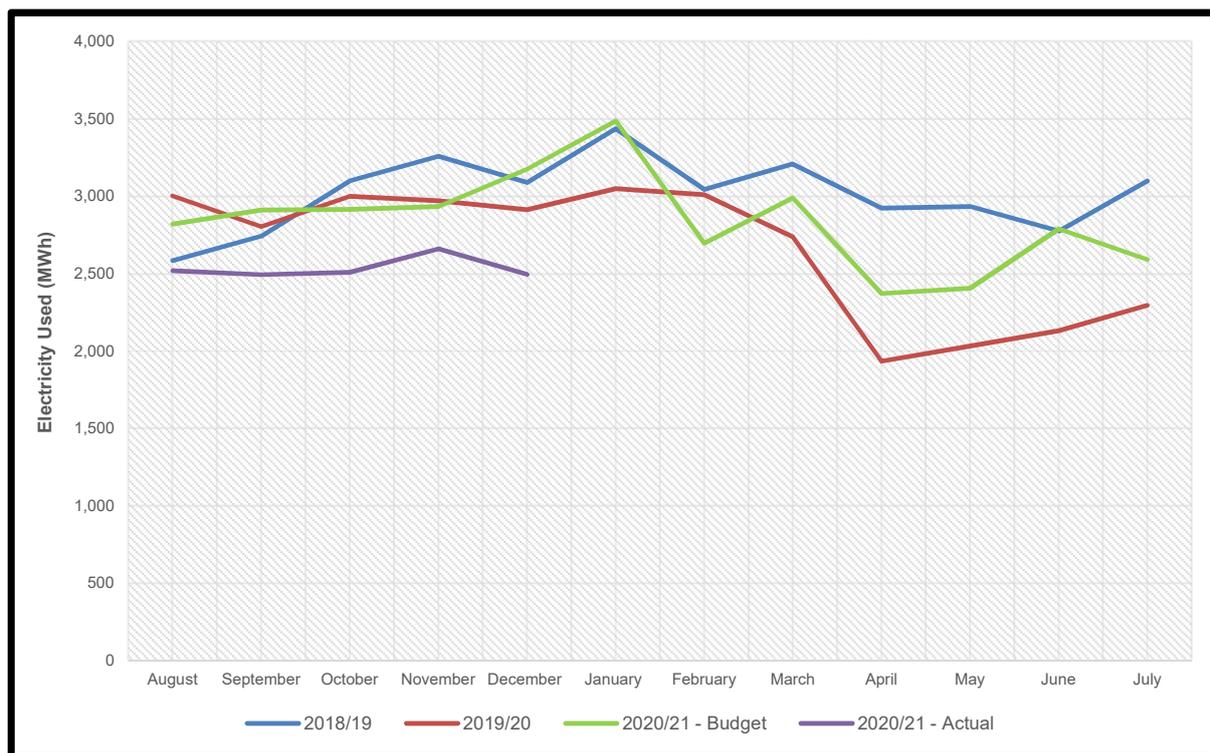
Below are the highlights of our current energy performances (End of Month 4):

- Our projected end of year electricity consumption would be approximately 2,022 MWh lower than budgeted
- Our projected gas consumption would be 1,129 MWh higher than budgeted
- Our current electricity unit price is currently 3.2% lower than anticipated²
- Our current gas unit price is 12.5% lower than anticipated².

In addition to the reduction in our unit energy prices, we pay green electricity tariff (renewable energy sources) for 5% of the electricity used across our UK Campuses.

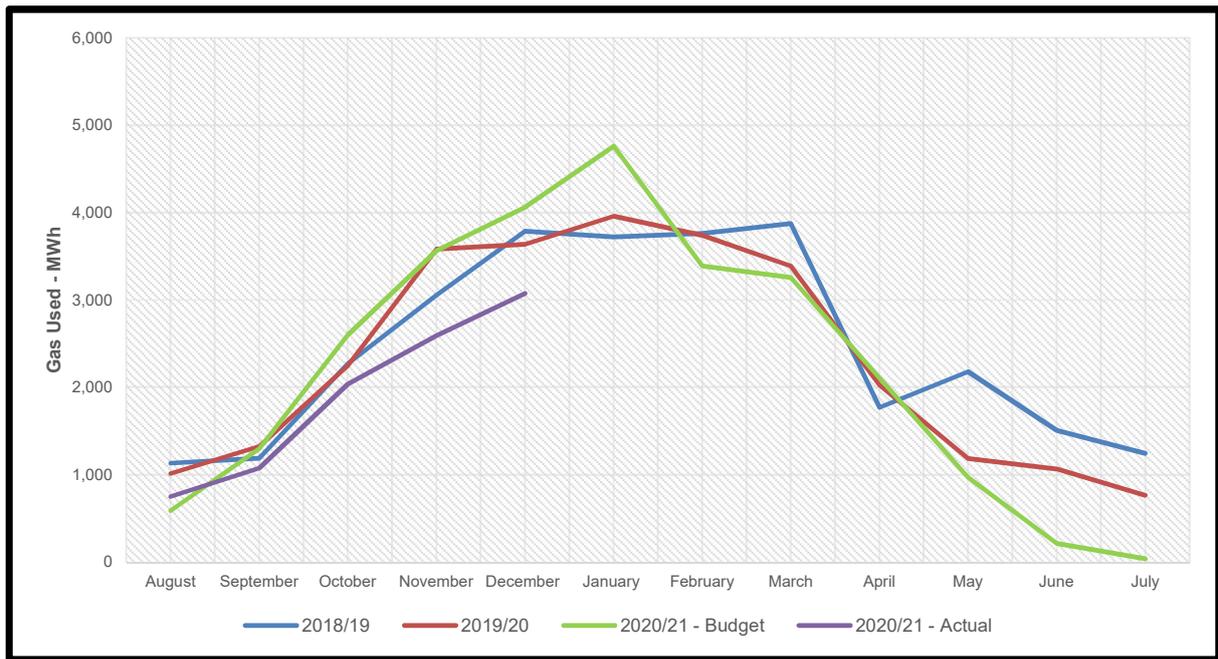
Figures 1 and 2 show the trend of our current electricity and gas usage profiles.

Figure 1: Trend in Electricity Consumption Performance against Budget (2020/21)



² Projected average VAT was higher than actual varying rates

Figure 2: Trend in Natural Gas Consumption Performance against Budget (2020/21)



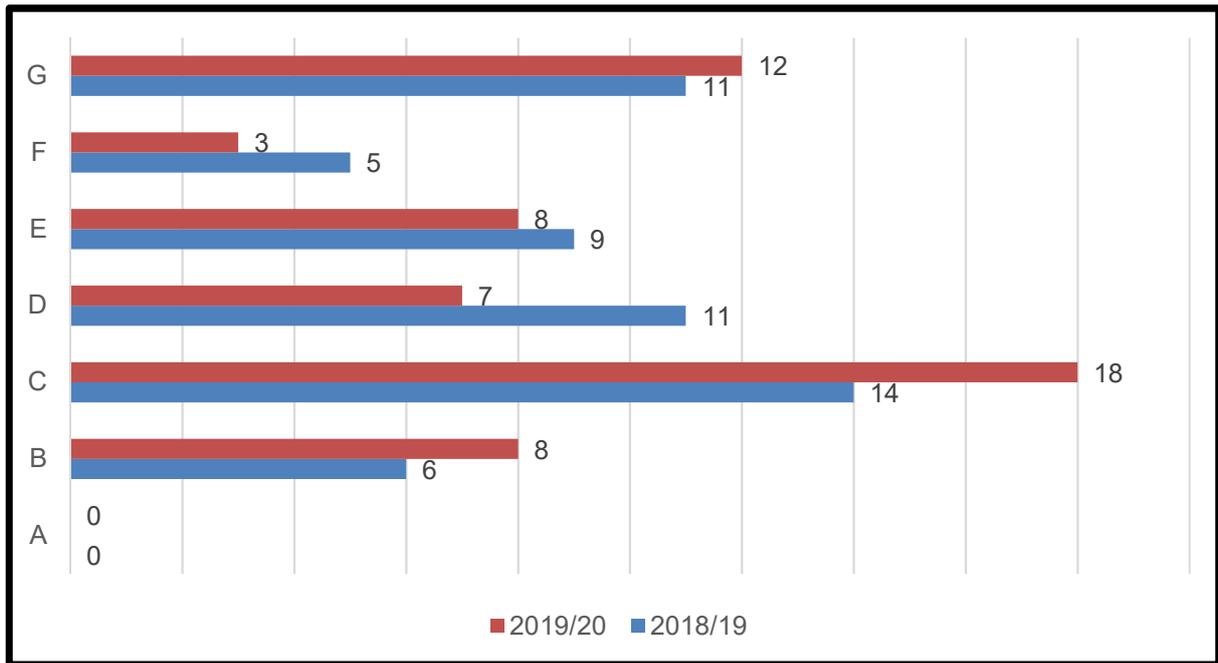
3. Display Energy Certificate (DEC)

All public sector buildings that are accessible by members of the public as well as whose total floor area exceeds 250m² must have a valid Display Energy Certificate (DEC). Energy Performance Certificate (EPC) are requirement for all commercial and residential properties.

We currently use our EPCs and DEC as one of the indicators of the energy performances of our buildings. The average DEC and EPC scores of our buildings reduced by 8.5% from 124.7 (2018/19) to 114.1 (2019/20). See Figure 3 for the breakdown of our 2018/19 and 2019/20 DEC and EPCs

The above performance improvement are consistent with the energy used across our estates during the 2019/20 academic year compared to the 2018/19 (See Figures 1 and 2).

Figure 3: QMUL's DEC and EPC Profile (2018/19 and 2019/20)



4. Salix Tranche 3 (£2,465,509): Project Delivery

As part of our commitment to continue to reduce our carbon footprint, we secured a £2.46 Million energy efficiency loan from the Salix (see Table 1 for details of these projects). The projected 2,321,808 kWh (electricity) and 4,157,720 kWh (gas) savings from the implementation of these projects has been guaranteed by our Building Management Service (BMS) contractor (Carbon Number Ltd.).

Table 1: Salix Tranche 3 Project Overview

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

Project Title / Description	Cost (£)	Projected Savings	
		Electricity (kWh)	Gas (kWh)
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

As at the end of business on 11 December 2020, Carbon Number Ltd have been paid £1,614,164.59 (65%) of the loan amount and we have received an interim loan payment of £922,758 from Salix. These projects are expected to be completed by March 2021 (three months behind schedule). Appendix 1 contain an overview of the progress towards the delivery of our Salix Tranche 3 projects.

5. Government Decarbonisation Grant Application (£5,765,622.18)

The government announced a £1 Billion decarbonisation fund on 30 September 2020. This fund was available to all public sector organisations. The main criteria associated with this grant is that projects must not exceed £500/tCO₂e LT (Life-time savings) and that the projects must be completed and commissioned by 31 March 2021³.

We were able to submit an application of £5.75 Million for this grant. Appendix 2 contain an overview of the projects that underpin our application. Our application was not successful because none of our projects could be completed and commissioned by 31 March 2021.

6. Salix Tranche 2: Performance against Projections

The cumulative projected outcomes from the Tranche 2 energy efficiency initiatives are 5,517,168 kWh reduction and 1,574,920 kWh increase in our electricity and gas consumption respectively. The anticipated energy performances of these projects was expected to reduce our 2019/20 energy budget by £757,171.

³ This deadline was re-introduced because this grant was over-subscribed.

At the end of the 2019/20 academic year, these projects reduced our energy budget by £257,531. However, these savings reduced to £132,410 after discounting for the impact of the partial closure of most of our buildings because of the COVID-19 lockdown and restrictions. Appendix 3 and Appendix 4 (adjusted for University closures due to COVID-19 lockdown and restrictions) contain overviews of the performances of the Salix Tranche 2 projects.

7. Recommendations

That the Sustainability Committee should:

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

Appendix 1: Salix Tranche 3 Project Delivery: Status 31 December 2020

Project	Total Loan Amount (£)	Loan Payment Received (£)	Total Invoices Paid (£)	Percentage Paid (%)	Loan Received (%)	Project Completed (%)
Joseph Priestley – Plate-heat Exchanger	£397,907	£119,372	£356,804.30	90%	30.0%	97%
Arts 2 - BMS Upgrade	£32,573	£83,440	£720.00	2%	28.3%	2%
Computer Science - BMS Upgrade	£16,629		£8,074.80	49%		67%
Engineering - BMS Upgrade	£83,025		£23,791.94	29%		40%
G E Fogg - BMS Upgrade	£48,783		£6,484.94	13%		2%
G O Jones - BMS Upgrade	£8,629		£9,897.96	115%		54%
Peoples Palace - BMS Upgrade	£105,017		£68,132.43	65%		70%
Whitechapel BMS Upgrade	£602,946		£516,613.18	86%		99%
Whitechapel Lighting Upgrade	£1,170,000	£719,946	£623,645.04	53%	40.6%	55%
Total	£2,465,509	£922,758	£1,614,164.59	65%	37.4%	

Appendix 2: QMUL's Decarbonisation Grant Application (£5,765,622.18)

Project	Grant Amount (£)	Projected Annual Energy Savings		Simple Payback (Years)	£/tCO ₂ e LT ⁴
		Gas (kWh)	Electricity (kWh)		
Engineering Building Triple Glazing	£487,636.00	189,556	Not Applicable	101	499.7
Queens' Building Double Glazing	£1,086,374.40	377,065	Not Applicable	113	559.6
Queens' Building Roof Insulation	£45,972.00	71,482	Not Applicable	25	116.6
20 kWP Photovoltaic Panels	£51,774.00	Not Applicable	26,280	13	1,188.5
BMS across 13 Buildings	£272,368.88	630,079	716,791	3	326.5
LED and Controls across 11 Buildings	£3,106,413.29	Not Applicable	2,399,216	9	733.3
Joseph Priestley's IT Server Room	£676,033.02	Not Applicable	1,068,720	4.4	487.2
Sub-meters installed 10 Buildings	£39,050.00	Not Applicable	Not Applicable	Not Applicable	N/A
Total	£5,765,622.18	1,196,700	4,211,007		

⁴ Life-time Savings

Appendix 3: Salix Tranche 2 Performance compared to Projections

Project	Projected Savings (kWh)		Savings Achieved (kWh)		Variance (kWh)	
	Electricity	Gas	Electricity	Gas	Electricity	Gas
Arts 2 - Ground Source Heat Pump	34,533	34,533	56,953	96,784	22,420	62,251
Francis Bancroft - Refurbishment	484,039	181,680	115,556	48,111	368,483	133,569
Abernethy Building - Glazing	80,333	79,639	42,693	81,231	37,640	160,870
Maynard House - BMS & Lighting Upgrade	98,752	34,919	44,905	77,279	53,847	42,360
Varey House - BMS & Lighting Upgrade	95,500	34,919	55,011	17,692	40,489	17,227
Computer Science (BMS) & Drapers (Lighting)	178,234	124,740	292,094	9,942	113,860	114,798
Richard Feilden House: (BMS & Lighting)	41,977		23,025		18,952	
Lindop House: BMS & Lighting Upgrade	35,726	52,113	30,539	39,410	5,187	12,703
Pooley House: BMS & Lighting Upgrade	48,772	317,998	202,021	120,286	153,249	197,712
Beaumont Court: BMS & Lighting Upgrade	33,949	79,665	2,468	77,143	36,417	2,522
Charterhouse Square Campus (BMS & CHP)	4,385,353	2,024,696	873,114	76,935	3,512,239	1,947,761
Total (kWh)	5,517,168	1,574,920	1,733,442	159,904	3,783,726	1,734,824
Total (£)	£804,403	£47,232	£252,736	£4,796	£551,667	£52,027
Total Savings	£757,171		£257,531		£499,640	

Appendix 4: Salix Tranche 2 Performance Overview (Adjusted: COVID-19 Lock-down and Campus Closure)

Project	Projected Savings (kWh)		Savings Achieved (kWh)		Variance (kWh)	
	Electricity	Gas	Electricity	Gas	Electricity	Gas
Arts 2 - Ground Source Heat Pump	34,533	34,533	10,136	83,095	24,397	48,562
Francis Bancroft - Refurbishment	484,039	181,680	25,343	21,024	458,696	160,656
Abernethy Building - Glazing	80,333	79,639	45,474	38,844	34,859	118,483
Maynard House (BMS & Lighting)	98,752	34,919	28,871	99,906	127,623	64,987
Varey House (BMS & Lighting)	95,500	34,919	17,745	21,079	113,245	13,840
Computer Science (BMS) & Drapers (Lighting)	178,234	124,740	6,476	52,483	184,710	177,223
Richard Feilden House: (BMS & Lighting)	41,977		13,912		55,889	0
Lindop House: (BMS & Lighting)	35,726	52,113	1,093	28,555	34,633	23,558
Pooley House: (BMS & Lighting)	48,772	317,998	80,004	80,363	31,232	237,635
Beaumont Court: (BMS & Lighting)	33,949	79,665	58,467	72,490	92,416	7,175
Charterhouse Square Campus (BMS & CHP)	4,385,353	2,024,696	794,244	194,592	3,591,109	2,219,288
Total (kWh)	5,517,168	1,574,920	830,821	376,001	4,686,347	1,950,921
Total (£)	£804,403	£47,232	£121,134	£11,276	£683,269	£58,508
Total Savings	£757,171		£132,410		£624,761	



Combine Heat and Power (CHP) Report

Outcome requested:	That the Sustainability Committee: <ul style="list-style-type: none"> • Take assurance of this report • Consider issues that should be escalated
Executive Summary:	This report contain a summary of the statuses of our combine heat and power (CHP) units.
Alignment with:	<ul style="list-style-type: none"> • The Environmental Protection Act 1990 • Clean Air Act 1993 • The Climate Change Act 2008 • The Energy Act 2016 • Environmental sustainability policy 2020 • Environmental sustainability action plan (ESAP) 2020
Consideration of Strategic Risks:	This forms part of the QMUL Value for Money (VfM) and compliance work.
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 Frost, Building Services and Commissioning Manager Tim Lee, Technical Manager (Authoring Engineer)
Date:	<i>21 January 2021</i>



Combine Heat and Power (CHP) Report

CHSQ CHP 1

Status

March 2020

The CHP was turned off in March 2020 due to low system demand and excessive stop starts at the request of the Hoval the CHP manufacturer to protect the asset.

With low student numbers within Dawson Hall coupled with the mild prevailing weather conditions, heating demand on the system remained low.

Test runs 2020

As seasonal heating demand increased, test runs were conducted in September however this resulted in the failure of a circulation pump, with a replacement having to be imported from Germany which took longer than expected to be delivered, due to COVID and Brexit.

As of 24/09/2020 CHP 1

Generated a total 938,388 kWh

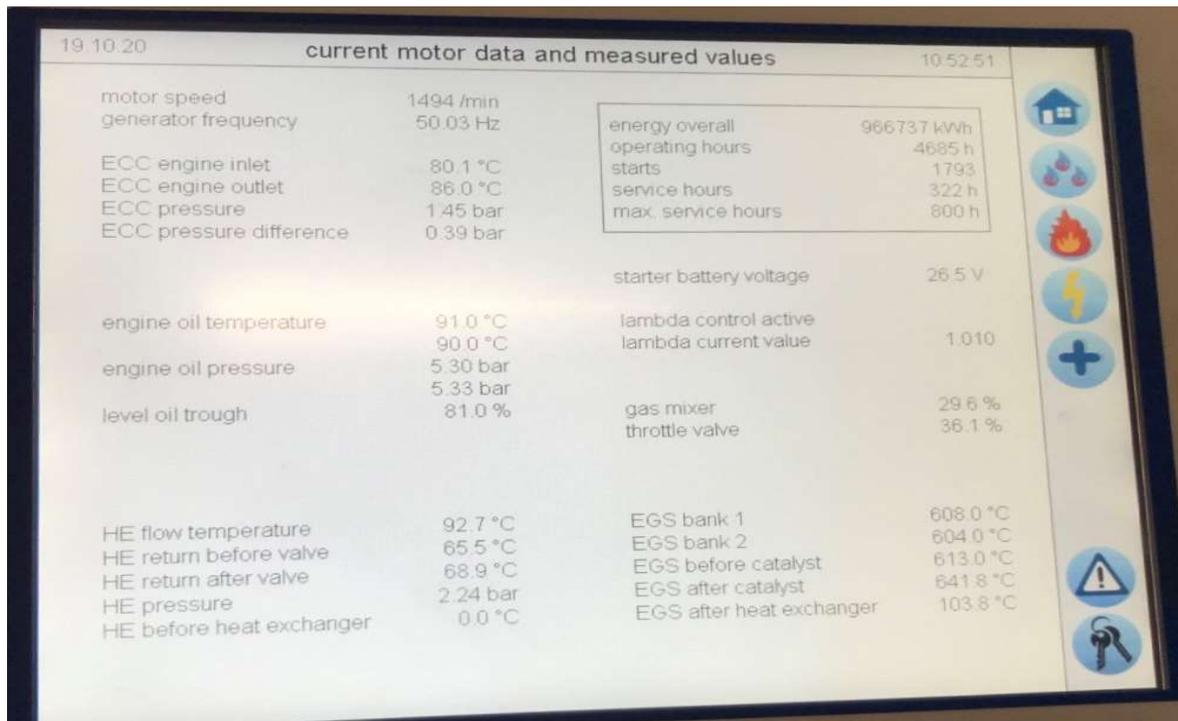
Run for 4,557 Hours

As of 19/10/2020 CHP 1 (see Fig 1)

Generated a total 966,737 kWh

Run for 4,685 Hours

Figure 4 CHP 1 Visual Interface



December 2020

Unit was offline due to a failed coolant pump which was replaced on 23/12/20. CHP was run before Christmas with 12 days of continuous running between 23/12/20 and 04/01/21.

January 2021

A scheduled service was performed on 07/01/21.

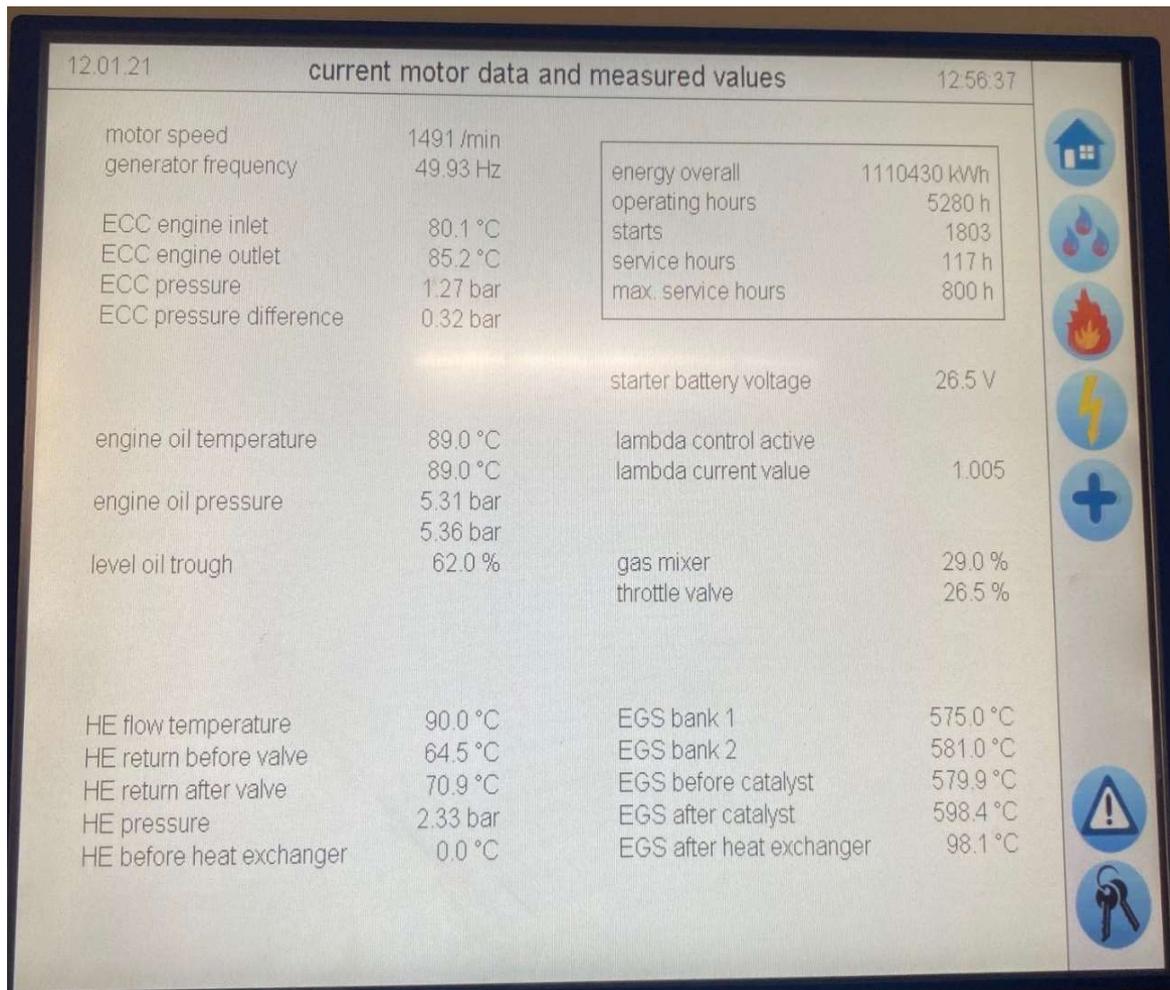
At the date of this report 15/01/21 CHP1 has been running continuously since the last service.

As of 12/01/2021 CHP 1, (see Fig)

Generated a total 1,110,430 kWh

Run for 5,280 Hours

Figure 5 CHP 1 Visual Interface



Next Steps

The next step is to complete a soak test of the thermal storage system. This is scheduled to commence on 18/01/21 and for witnessing on 22/01/21 by QMUL, Design Consultant AECOM and the Project Manager AA Projects/New Way Engineers.

Currently CHP1 is shut down via the weekly Fire Alarm test and requires manual restarting which reduces the run hours. The Fire Alarm programming is being updated week commencing 18/01/21 to prevent CHP1 shut down in the event of a test.

Next CHP1 service due after approximately 600hrs of running (one month). This service will be provided by the CHP Manufacturer (Hoval) through a contract which is in place with the Contractor (G&D Higgins). In the event that CHP1 is working satisfactorily QMUL should then take out a longer term service contract with Hoval.

CHSQ CHP 2

Status

December 2020, JVSC Electrical switch room works were completed, with CHP 2 also pre commissioning with minor issues picked up by Hoval, the CHP manufacturer that G&D Higgins is in the process of rectifying these minor concerns.

Witnessing and commissioning of CHP 2 has been arranged with UKPN for the 15th of February. This is later than programmed due to UKPN's service delivery being impacted by COVID.

Once CHP2 has been commissioned a soak test will be completed to assess the simultaneous operation of both CHP1 and CHP2. This is anticipated to occur shortly after the commissioning in February.

In the event that CHP1 and CHP2 have both operating satisfactorily during February 2021 for a period of 3-4 weeks the system will be deemed Practically Complete and fit for handover to QMUL.

Beyond this point a long term service contract for CHP2 should be taken out by QMUL with Hoval and the system should be closely monitored through the Spring/Summer/Autumn of 2021 to assess the in use run hours of the system. In as far as possible the run hours should be assessed against the site usage given the current Covid related restrictions which are envisaged to remain in place albeit/hopefully reducing later in 2021.

Fiscal Metering Data

QMUL changed its energy supply contracts in October 2020, which has lost visibility of the fiscal metering data. This is a critical source of data required to enable future performance reporting of the CHP units.

Mile End CHP

Initial design tender scheme Buro Happold

Superseded by Value Engineered Proposal by the developer Bouygues UK.

Buro Happold QMUL consulting Engineers

Mile End CHP Design Capacities @100%

The key performance criteria for the CHP proposed by BYUK included (*Censum Report*)

Electrical Output: 500kWe
 Thermal Output: 647kWt
 CHP Run Hours: 4842hrs
 Annual Electricity Produced 2,287MWh
 Annual Heating Contribution 3,004MWh
 Predicted CO2 Saving 963t
 Predicted Gas Consumption 8,265MWh

Feeding heating to the following:

- JP Building
- FB Building
- Fielden House (Hot water)
- Queens Building
- Grad Centre
- Peoples Palace
- Eng East

September 2020 BYUK returned to site to conduct further commissioning tests with the CHP. The cold start/idle issue could not be resolved and requires the CHP manufacturer to travel from Germany to rectify, subject to COVID travel restrictions being lifted.

As per previous update, the unit remains non-operational with QMUL receiving no benefit from the installation.

Currently the Project Manager is taking legal advice with regard to non-performance.

CHSQ CHP background information

Salix funding proposal

The table below provides the CHP data submitted by QMUL in January 2017 for Salix Funding.

Table 2 Salix CHP figures

Fuel type	Annual Pre-project kWh	Annual Post-project kWh	Energy Cost(p/kWh)	Annual kWh saving	Annual tCO2 savings	Annual Energy Cost savings
Electricity	3,623,000	1,455,550	11.55	2,167,450	973.88	£250,349
Gas	3,651,750	6,338,250	2.63	-2,686,500	-494.31	-£70,523

The initial design for the Salix submission was for a 1MWe CHP, however this was changed as the unit would not fit within the Dawson Hall boiler house.

Specification for Tender AECOM , 2 off 260 kWe CHP's specified

Consulting Engineers AECOM

Main contractor G&D Higgins

The Table below formed part of AECOM's options appraisal (**AECOM CHP Techno-economic Analysis 20 September 2017**)

Table 3 AECOM Options appraisal

CHP Feasibility and Design Options Appraisals

	Counterfactual			Option 1			Option 2			Option 3			Option 4		
	Energy (MWh)	CO ₂ (tons)	Cost (£)	Energy (MWh)	CO ₂ (tons)	Cost (£)	Energy (MWh)	CO ₂ (tons)	Cost (£)	Energy (MWh)	CO ₂ (tons)	Cost (£)	Energy (MWh)	CO ₂ (tons)	Cost (£)
CHP heat generated				3,543			3,571			3,450			3,298		
CHP electric used on site				2,176			2,201			2,192			2,110		
CHP electric exported ¹				462	-248	-18,464	465	-249	-18,585	228	-122	-9,116	203	-109	-8,121
Imported electric	6,266	3,365	889,284	4,141	2,224	455,663	4,116	2,210	452,788	4,099	2,201	450,923	4,178	2,244	459,612
CHP gas	7,060	1,306	176,512	2,061	381	51,530	2,028	375	50,703	2,171	402	54,264	2,349	435	58,736
Boiler gas				6,938	1,284	173,458	7,013	1,297	175,334	6,386	1,181	159,643	6,104	1,129	152,609
CHP maintenance ²						23,697			23,323			32,477			29,320
Total		4,671	885,776	3,641	685,784		3,634	683,564		3,662	688,191		3,699	692,155	
Saving				1,030	179,992		1,037	182,213		1,009	177,585		972	173,621	
Capital cost						1,818,374			1,670,852			1,101,282			1,073,855
Replacement cost ³						732,000			517,200			429,600			429,600
Simple payback (Years)						10.1			8.6			6.2			6.2
Net Present Value						-£387,053			-£76,070			£370,774			£363,378
IRR						8%			11%			18%			18%
Lifetime cost of Carbon (£/tonne) ⁴						£99			£81			£61			£62

Table 1: Financial Analysis Results

1. Exported electricity is assumed to generate an income, which is a negative cost.
2. CHP maintenance costs are taken from Hoval's quote adjusted for the number of hours of operation of each CHP unit.
3. It is assumed that each CHP unit will be replaced once within the 25 year project life.
4. The lifetime cost of carbon has been calculated as the capital plus CHP replacement costs divided by the annual carbon savings times the 25 year project life.

Option 4 detailed above was recommended by AECOM with 75,000 litres of thermal storage. However, on the instruction of the then chair of the Salix project board, this was omitted from the design, reducing the utilisation factor. Subsequent improvement to thermal storage has been made, with 1,600 litres installed and witnessed April 2020.

Option 4

AECOM Assumption was CHP's would not be run in the evening, as the night time tariff was more advantageous.

CHP Heat Generated 3289 MWh=3,298,000

CHP Electric used onsite 2110 MWh = 2,110,000 kWh

CHP Electric Exported offsite 203 MWh = 203,000 kWh

CHP Electric generated Total $2,110,000+203,000 = 2,340,000$ kWh

CHP Imported Electric to site 4148 MWh = 4,148,000

CHSQ CHP as installed details

2 off CHP's installed

1 off unit in Dawson Hall

1 off unit external to JVSC

Each unit at 100% capacity will generate

263 kW (Electrical) each

375 kW (Thermal) each

Feeding heat to the following buildings:

- Dawson Hall
- JVSC
- Wolfson building
- WHHC
- Rotblat