

Sustainability Committee Meeting: Annual Environmental Management Review

Date: 1 April 2022

Time: 11:00 Hours to 13:00 Hours

AGENDA

SN	Items	Paper	Lead	Overview
1.	Apologies	NA	P. Lloyd	<ul style="list-style-type: none"> Information
2.	Environmental Audit Action Log & Matters Arising	EMSR001 & Record	P. Tamuno	<ul style="list-style-type: none"> Discussion Assurance Escalation
3. Environmental Sustainability Action Plan (ESAP)				
3a.	2020/21 Annual Environmental Sustainability Report	EMSR002	P. Tamuno / P. Lloyd / I. McManus	<ul style="list-style-type: none"> Information Discussion Endorsement
3b.	Environmental Management System	EMSR003	P. Tamuno / P. Lloyd / I. McManus	<ul style="list-style-type: none"> Information Discussion Approval
4. Environmental Management System Procedures				
4a.	Non-Hazardous Waste Management Procedure	EMSR004	B. Eastaugh	<ul style="list-style-type: none"> Information Discussion Approval
4b.	Hazardous Waste Management Procedure	EMSR005	B. Eastaugh	<ul style="list-style-type: none"> Information Discussion Approval
4c.	Grounds Management Procedure	EMSR006	B. Eastaugh	<ul style="list-style-type: none"> Information Discussion Approval
4d.	Emergency Preparedness and Response Procedure	EMSR007	P. Milewski	<ul style="list-style-type: none"> Information Discussion Approval
4e.	Emergency Spill Response Procedure	EMSR008	P. Milewski	<ul style="list-style-type: none"> Information Discussion Approval
4f.	Emission to Air Management Procedure	EMSR009	P. Milewski	<ul style="list-style-type: none"> Information Discussion Approval
4g.	Energy Management Procedure	EMSR010	L. Pasichnichenko	<ul style="list-style-type: none"> Information Discussion Approval

SN	Items	Paper	Lead	Overview
4f.	Construction, Refurbishment, Conversion and Fit-Out Procedure	EMSR011	P. Tamuno	<ul style="list-style-type: none"> • Information • Discussion • Approval
4g.	Contractor Control and Management Procedure	EMSR012	P. Tamuno	<ul style="list-style-type: none"> • Information • Discussion • Approval
4h.	Discharges to Water Management Procedure	EMSR013	P. Tamuno	<ul style="list-style-type: none"> • Information • Discussion • Approval
5. Environmental Management System Registers / Record EMSR014				
5a.	PESTLE Analysis Register	Register	P. Tamuno	<ul style="list-style-type: none"> • Information • Discussion • Approval
5b.	Log of Interested Parties	Register	P. Tamuno	<ul style="list-style-type: none"> • Information • Discussion • Approval
5c.	Scope and Context Register	Register	P. Tamuno	<ul style="list-style-type: none"> • Information • Discussion • Approval
5d.	Environmental Compliance Register	Register	P. Tamuno	<ul style="list-style-type: none"> • Information • Discussion • Approval
5f.	Environmental Aspects and Impacts Register	Register	P. Tamuno	<ul style="list-style-type: none"> • Information • Discussion • Approval
5g.	Environmental Objectives KPIs and Action Log	Register	P. Tamuno	<ul style="list-style-type: none"> • Information • Discussion • Approval
5h.	Environmental Competence and Training Requirements Register	Register	P. Tamuno	<ul style="list-style-type: none"> • Information • Discussion • Approval
5i.	Environmental Management Training Record	Record	P. Tamuno	<ul style="list-style-type: none"> • Information • Discussion • Assurance
6. Other Business				
6a.	Any Other Business	NA	P. Lloyd	<ul style="list-style-type: none"> • Information • Discussion • Escalation • Actions
Date of Next Meeting: Friday 13 May 2022 (10:00 Hours to 12:00 Hours)				



Environmental Audit Action Log: Matters Arising

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>This report and associated record contain a summary of the actions from internal and external environmental certificates audits that were conducted between December 2020 and March 2022. Three external environmental certification audits and three internal environmental audits were conducted across our operations.</p> <p>The “Queen Mary - Environmental Management System Audit Action Log March 2022” contain the up to date record of all audit actions.</p>
Alignment with:	<ul style="list-style-type: none"> • Queen Mary’s Environmental Policy 2021 • 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"> • Estate Strategy Board
Confidentiality and Distribution:	Not Restricted
Equality Impact Assessment:	Not Applicable
Author(s) :	Philip Tamuno, Head of Sustainability
Date:	1 April 2022

Environmental Audit Action Log: Matters Arising

Overview

This report and associated record contain a summary of the actions from internal and external environmental certificates audits that were conducted between December 2020 and March 2022. Three external environmental certification audits and three internal environmental audits were conducted across our operations. The “Queen Mary - Environmental Management System Audit Action Log March 2022” contain the up to date record of all audit actions.

External EcoCampus Certification Audits

External audits assessing us against the EcoCampus environmental management system (EMS) Bronze, Silver and Gold criteria were conducted on 10 December 2020, 1 April 2021 and 8 July 2021 respectively. We are pleased to report that we met the assessment criteria associated with all three phases EcoCampus implementation phases. However, two minor non-conformances and 8 opportunities for improvements (OFI) were raised during these three external certification audits. Nine of these actions are now closed with one not requiring any action.

Internal Environmental Audits

Table 1 below contain our 2021/22 academic year internal environmental audit programme. All three of our main UK campuses have been audit including a minor campus. This programme has been put in place as part of our commitment to monitor our performances against relevant environmental regulations, standards and commitments

Table 1: Queen Mary 2021/22 Environmental Audit Programme

Campus	Date Audited	Schedule Audit	Audit Actions		
			MaNC ¹	MiNC ²	OFI ³
Mile End	26/11/2021	Not Applicable	0	7	4

¹ Major Non-conformance

² Minor Non-conformance

³ Opportunity for Improvement

Campus	Date Audited	Schedule Audit	Audit Actions		
			MaNC ¹	MiNC ²	OFl ³
Whitechapel	04/02/2022	Not Applicable	1	3	4
Charterhouse Square	25/03/2022	Not Applicable	0	1	4
West Smithfield	25/03/2022	Not Applicable	0	0	0
Malta	Not Applicable	17/06/2022	NA	NA	NA
Lincoln's Inn Field	Not Applicable	24/06/2022	NA	NA	NA
Chislehursts Sports Ground	Not Applicable	24/06/2022	NA	NA	NA

Audit Actions

As seen in "Queen Mary - Environmental Management System Audit Action Log March 2022" clinical waste storage and non-hazardous waste management are two areas that require improvement. In response to the actions of these audits, we have delivered waste management training to over 80% of our Facility Management and we used the 2022 Global Recycling Day (18 March 2022) to promote the benefits and of waste segregations and the risks associated with poor waste management.

Conclusion and Recommendations

That the Sustainability Committee:

- Consider the outcomes of these six environmental audits
- Consider issues that should be escalated
- Take assurance of this audit report.



Queen Mary's 2020/21 Annual Environmental Sustainability Report

Outcome requested:	<p>That the Sustainability Committee should:</p> <ul style="list-style-type: none"> • Take assurance of this report • Endorse the presentation of this report to the Senior Executive Team (SET)
Executive Summary:	<p>Our 2019/20 environmental sustainability report summaries our performances against our environmental objectives and commitments as well as show our progress towards embedding good environmental practices across all areas of our operations.</p> <p>This report details our recent performances and provide insight into proposed initiatives that would be implemented during the 2021/22 academic year to support the delivery of our ESAP (2020-23).</p> <p>The highlights of our performance during the year under review are:</p> <ul style="list-style-type: none"> • Environmental Sustainability Plan and Policy: the approval of our environmental sustainability action plan (ESAP 2020-23) and Environmental Sustainability Policy 2020 by our Senior Executive Team (SET) are part of our immediate responses to the current environmental challenges. Our Environmental Sustainability Policy sets our environmental vision and our ESAP 2020-23 is the framework on which we are delivering our environmental commitments and objectives. • Environmental Performance (ISO 14001:2015 EMS): we are currently using the EcoCampus phased approach to implementing ISO 14001:2015 environmental management system (EMS) and to monitor and report our environmental performances. We are pleased to report that we were awarded EcoCampus Gold award during the year under review and we working towards attaining ISO 14001:2015 EMS and EcoCampus Platinum certification by July 2022.

- Civic University and UN Sustainable Development Goals: we are currently actively involved and collaborating with local, sectoral and wider partners to deliver evidence based good environmental outcomes, optimise resources as well as share good practices. We are also using the EAUC's sustainability leadership scorecard (SLS) to monitor our performance towards embedding the principles of the UN SDGs into all areas of our operations. During the year under review, we attained Gold SLS status and we will continue to work towards maintaining this performance and improve in areas that we attained Silver SLS' rank.
- Carbon reduction and responding to climate change: the national and international restrictions associated with the COVID-19 pandemic significantly skewed our current reduction performance. Our 2020/21 business travel carbon footprint reduced by 96% compared to our 2018/19 baseline. Specifically, our carbon footprint reduced by from which contributed to Our carbon footprint (CO₂e) reduced by 47.4% from 26,857 tCO₂e during the 2018/19 academic year to 14,138 tCO₂e at the end of the year under review
- Building energy use: we are pleased to report that projects implemented from the £2.46 Million energy efficiency loan from Salix (at 0% interest rate) are at advance completion and commissioning stages. We successfully attracted a £124,399.20 grant to develop our heat decarbonisation plan (HDP). This HDP will be fundamental to developing our net zero strategy.
- Water use: we recorded a 39.8% reduction (from 345,588 m³ to 208,032 m³) in water used across our residential and non-residential buildings compared to our 2018/19 based. This reduction could be attributed to the partial operation of our campuses.
- Waste management and Resource Efficiency: most of the data used to generate our waste management and recycling performances were based on standard industry benchmark. The total wastes reported to have been generated from our three main campuses reduced by 52%, which our recycling

	<p>performances continue to decline from 33% during the 2018/19 academic year to 21% during the year under review. In spite of the COVID-19 pandemic, our ReUse scheme, used book collection service and our participation in the British Heart Foundation Pack for Good have continued to be popular among all staff and students</p> <ul style="list-style-type: none">● Construction and refurbishment: During the year under review, we secured an investment of £152,692 to install photovoltaic panels and improve the roof of our Queens' building (one of the buildings that was refurbished during the 2020/21 academic year). We are pleased to report the fit-out of our Department W building achieved the SKA rating of Gold.● Biodiversity: during the year under review, our Grounds and Gardens Team delivered a suite of gardening workshops with staff and students and initiated the creation of an orchard across our Mile End Campus. As part of our response to the UN Decade on Ecosystem Restoration, we planted six Black Poplar trees. Black Poplars are among Britain's rarest tree species.● Sustainable procurement: we are pleased to report that 98% of our contractors and suppliers (total spend of £59.29 million) that are above £200,000 currently have an Environmental Management System (EMS), which a 80.7% of these 49 contractors and suppliers had certified ISO 14001:2015 EMS.● Embedding environmental sustainability: we have continued to promote the benefits of embedding education for sustainable development (ESD) into all our academic offering. We are pleased to report that 62% of the 138 undergraduate programmes we offer have some elements of ESD and the principles of sustainable development. Our online module on sustainable development had 454 updates during the year under review and 109 professional services and academic staff attended the Institute of Environmental Management and Assessment (IEMA) environmental sustainability skills for the workforce. Furthermore, our Environmental Sustainability Champion group that we launched during the 2020/21
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	academic have continued to be actively involved in promoting the benefits of good environmental practices.
Alignment with: <ul style="list-style-type: none"> • QMUL Strategy • Internal Policies/Regulations • External Statutory Requirements 	<ul style="list-style-type: none"> • Queen Mary's Environmental Policy 2021 • 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:	Senior Executive Team
Confidentiality and Distribution:	<i>Non-restricted</i>
Equality Impact Assessment:	<i>Not Applicable</i>
Author(s) :	Philip Tamuno, Head of Sustainability
Executive Leads:	Ian McManus, Director of Estates and Facilities Philippa Lloyd, Vice Principal Policy and Strategy Partnerships
Date:	1 April 2022

Queen Mary's 2020/21 Annual Environmental Sustainability Report

Overview

Our 2019/20 environmental sustainability report summaries our performances against our environmental objectives and commitments as well as show our progress towards embedding good environmental practices across all areas of our operations.

This report details our recent performances and provide insight into proposed initiatives that would be implemented during the 2021/22 academic year to support the delivery of our ESAP (2020-23).

The highlights of our performance during the year under review are:

- Environmental Sustainability Plan and Policy: the approval of our environmental sustainability action plan (ESAP 2020-23) and Environmental Sustainability Policy 2020 by our Senior Executive Team (SET) are part of our immediate responses to the current environmental challenges. Our Environmental Sustainability Policy sets our environmental vision and our ESAP 2020-23 is the framework on which we are delivering our environmental commitments and objectives.
- Environmental Performance (ISO 14001:2015 EMS): we are currently using the EcoCampus phased approach to implementing ISO 14001:2015 environmental management system (EMS) and to monitor and report our environmental performances. We are pleased to report that we were awarded EcoCampus Gold award during the year under review and we working towards attaining ISO 14001:2015 EMS and EcoCampus Platinum certification by July 2022.
- Civic University and UN Sustainable Development Goals: we are currently actively involved and collaborating with local, sectoral and wider partners to deliver evidence based good environmental outcomes, optimise resources as well as share good practices. We are also using the EAUC's sustainability leadership scorecard (SLS) to monitor our performance towards embedding the principles of the UN SDGs into all areas of our operations. During the year under review, we attained Gold SLS status and we will continue to work towards maintaining this performance and improve in areas that we attained Silver SLS' rank.

- Carbon reduction and responding to climate change: the national and international restrictions associated with the COVID-19 pandemic significantly skewed our current reduction performance. Our 2020/21 business travel carbon footprint reduced by 96% compared to our 2018/19 baseline. Specifically, our carbon footprint reduced by from which contributed to Our carbon footprint (CO₂e) reduced by 47.4% from 26,857 tCO₂e during the 2018/19 academic year to 14,138 tCO₂e at the end of the year under review
- Building energy use: we are pleased to report that projects implemented from the £2.46 Million energy efficiency loan from Salix (at 0% interest rate) are at advance completion and commissioning stages. We successfully attracted a £124,399.20 grant to develop our heat decarbonisation plan (HDP). This HDP will be fundamental to developing our net zero strategy.
- Water use: we recorded a 39.8% reduction (from 345,588 m³ to 208,032 m³) in water used across our residential and non-residential buildings compared to our 2018/19 based. This reduction could be attributed to the partial operation of our campuses.
- Waste management and Resource Efficiency: most of the data used to generate our waste management and recycling performances were based on standard industry benchmark. The total wastes reported to have been generated from our three main campuses reduced by 52%, which our recycling performances continue to decline from 33% during the 2018/19 academic year to 21% during the year under review. In spite of the COVID-19 pandemic, our ReUse scheme, used book collection service and our participation in the British Heart Foundation Pack for Good have continued to be popular among all staff and students
- Construction and refurbishment: During the year under review, we secured an investment of £152,692 to install photovoltaic panels and improve the roof of our Queens' building (one of the buildings that was refurbished during the 2020/21 academic year). We are pleased to report the fit-out of our Department W building achieved the SKA rating of Gold.
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- Embedding environmental sustainability: we have continued to promote the benefits of embedding education for sustainable development (ESD) into all our academic offering. We are pleased to report that 62% of the 138 undergraduate programmes we offer have some elements of ESD and the principles of sustainable development. Our online module on sustainable development had 454 updates during the year under review and 109 professional services and academic staff attended the Institute of Environmental Management and Assessment (IEMA) environmental sustainability skills for the workforce. Furthermore, our Environmental Sustainability Champion group that we launched during the 2020/21 academic have continued to be actively involved in promoting the benefits of good environmental practices.

Environmental Sustainability Plan and Policy

Our Environmental Sustainability Action Plan (ESAP) 2020-23 and Environmental Sustainability Policy was developed and approved by our Senior Executive Team (SET) as part of our immediate response to these global environmental risks and commitment to embed good environmental practices across all areas of our operation. Our Environmental Sustainability Policy set out our environmental vision and our ESAP 2020-23 is the framework on which we are delivering our environmental objectives and our compliance responsibilities.

Specifically, our six-year 30% carbon reduction target against our 2018/19 baseline is one of our immediate responses to the global risks associated with climate change as well as optimise all current and emerging opportunities.

To support the delivery of our ESAP 2020-23 and our Environmental Sustainability Policy 2020, we recruited a Sustainability and Energy Manager and Sustainability and Environment Manager. These two staff will among other responsibilities be actively involved in our journey to attain our ISO 14001:2015 by July 2022 and the delivery our six-year 30% carbon reduction target.

Environmental Performance: ISO 14001:2015 EMS Certification

One of our current environmental commitments is to attain ISO 14001:2015 Environmental Management System (EMS) certification by July 2022. We are using the EcoCampus phased EMS approach to attain this objective.

We are pleased to report that we were awarded EcoCampus EMS Gold Certification Certificate in July 2021. The Gold EcoCampus EMS award is one-step from ISO 14001:2015 EMS certification. This award also aligns with our commitment to continue to improve our

environmental performance, comply with all relevant regulations and embed good environmental practices across all areas of our operation.

Civic University and United Nations SDGs

We have continued to actively integrate corporate social responsibility (CSR) and the fundamental of the UN SDGs into relevant aspects of our operations.

We have continued to maintain our memberships of the Environmental Association for Universities and Colleges (EAUC), the Institute of Environmental Management and Assessment (IEMA) and EcoCampus. We have continued to use these memberships to engage and collaborate with like-minded organisations for the purpose of promoting the benefits of good environmental practices, responding to current environmental risks as well as optimising current and emerging environmental opportunities.

We are also active a participant in the Russell Group Sustainability Network, Universities Climate Network, Chair of Party-26 (COP26) University Group and London Borough of Tower Hamlets Carbon and Climate Taskforce. Our participation in these Groups are for the purpose of sharing good practices and engaging with partner organisation.

Some of the highlights of our collaboration during the 2020/21 academic year are that our Vice Chair Policy and Strategic Partnerships shared our approach to net zero and possible collaboration with strategic stakeholders across the London Borough of Tower Hamlets. In addition, our Head of Sustainability gave a presentation on our approach on environmental sustainability training and development for the purpose of empowering staff to make a difference at IEMA inaugural lunch and learn session.

We have continued to use the EAUC's Sustainability Leadership Scorecard (SLS) to monitor and report our performances in integrating the fundamentals of the UN SDGs into all areas of our operations.

We are pleased to report that our overall SLS status improved from Silver in 2019/20 to Gold at the end of the 2020/21 academic year. As seen in Table 1, we are aware that we require improvement in the areas of Travel and Transport, Business and Industry Interface and Learning and Teaching.

Table 1: Queen Mary, 2020/21 Sustainable Leadership Score (Self-Assessment)

Category	Status	Priority Areas	Score (%)	
			2019/20	2020/21
Leadership and Governance	Gold	Staff Engagement and Human Resources	78.1%	82.5%
		Leadership	78.1%	87.5%
		Health and Wellbeing	68.7%	68.7%
		Risk	59.4%	78.1%
Estates and Operations	Gold	Resource Efficiency and Waste	71.9%	78.1%
		Biodiversity	75.0%	90.6%
		Construction and Innovation	62.5%	81.2%
		Water	62.5%	75.0%
		Travel and Transport	59.4%	59.4%
		Climate Change Adaptation	71.9%	75.0%
		Energy Management	93.7%	93.7%
Partnership and Engagement	Gold	Community and Public Engagement	46.9%	84.4%
		Business and Industry Interface	68.7%	58.4%
		Procurement and Supplier Engagement	75.0%	75.0%
		Food and Drink (Catering)	37.5%	75.0%
Learning, Teaching & Research	Silver	Student Engagement	81.2%	81.2%
		Research	62.5%	62.5%
		Learning and Teaching	56.2%	56.2%

Carbon Reduction and Responding to Climate Change

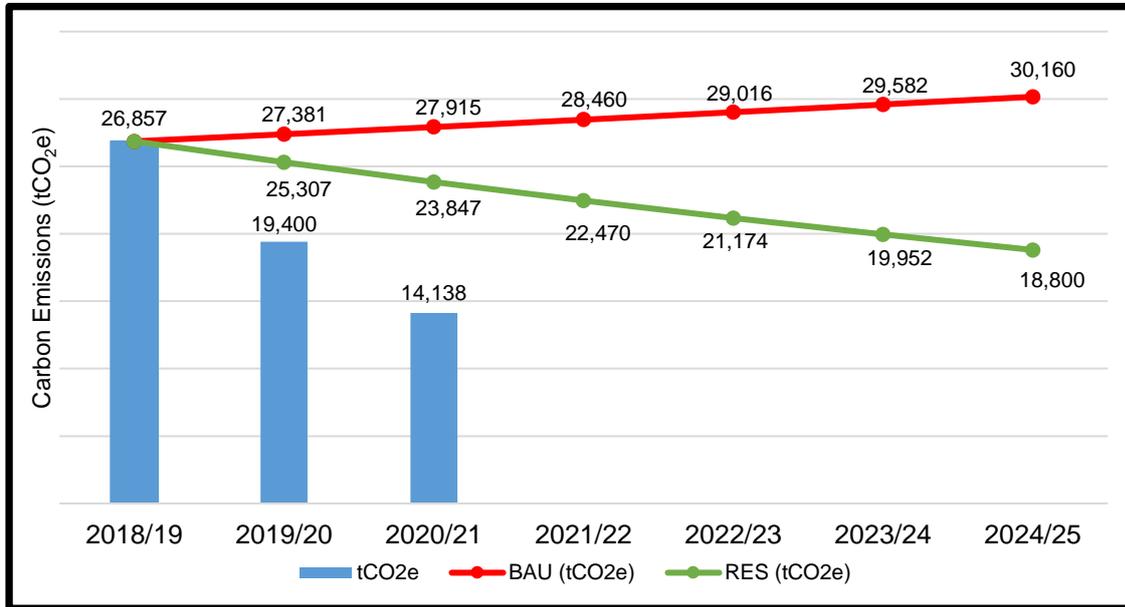
The six-year 30% carbon reduction target we adopted against our 2018/19 carbon footprint is one of our immediate responses to the risks associated with climate change and our commitment to support the delivery of the UK's 2050 net-zero carbon commitment. Our carbon footprint (CO₂e) is represented by the emissions associated with the energy and water used across our UK campuses, fuel used by our vehicles and business travel⁴.

During the 2020/21 academic year, we emitted 14,138 tCO₂e, which is 47.4% lower than our 2018/19 carbon footprint. To put our current carbon footprint into context, on average the carbon we emit per student reduced from 1.37 tCO₂e in 2018/19 to 0.63 tCO₂e (53.9% reduction).

⁴ Distances our Staff and Researchers travel to carry out academic and operational responsibilities (excluding those via Oyster Cards)

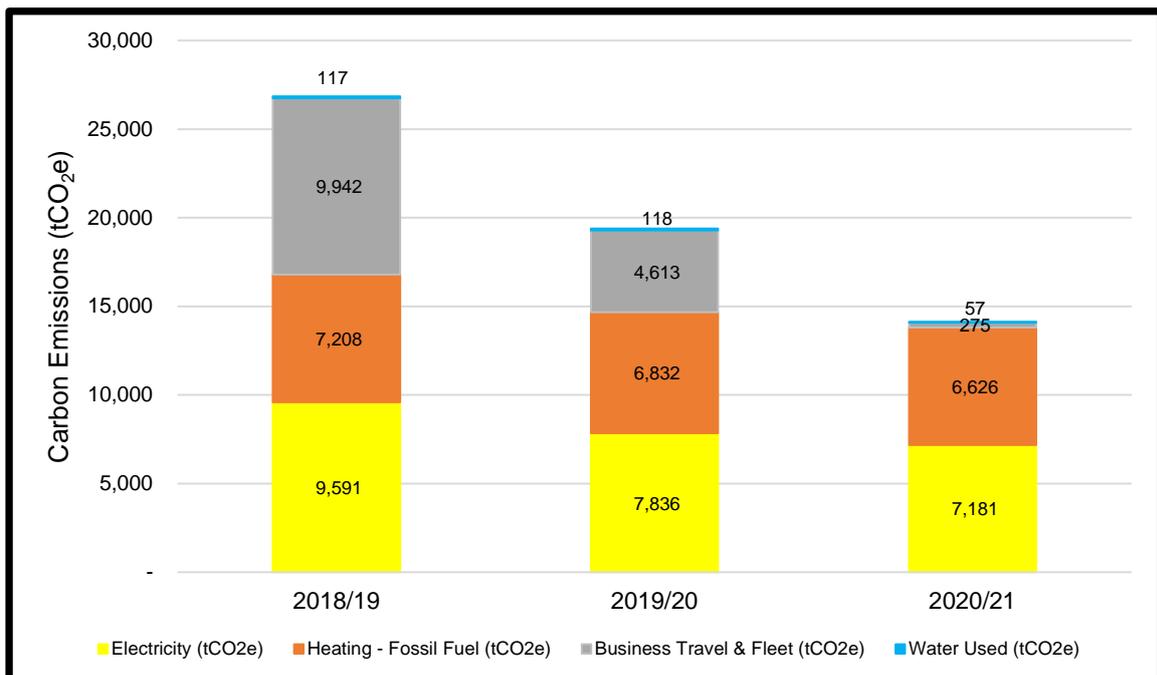
Figure 1 show our 2018/19, 2019/20 and 2020/21 carbon footprints compared to our business as usual (BAU) and modelled reduced emission scenario (RES) trajectory based on our six-year 30% carbon reduction target.

Figure 1: Our Carbon Reduction Performance against BAU and Target Emissions



This significant reduction in our carbon footprint (particularly our business travel) is attributed to the national and international restriction and lock-downs associated with COVID-19 pandemic from March 2020. Figure 2 show the breakdown of the trend of our carbon footprint.

Figure 2: Trend in Queen Mary’s Carbon Footprint



Further comparison of our current carbon footprint and associated indicators against our 2018/19 baseline show that:

- Our student number increased by 14.1% from 19,595 to 22,363
- The water we used across our UK reduced by 38.6% from 338,772 m³ to 208,032 m³
- Our business travel reduced by 96% from 31.9 Million km to 1.3 Million km
- The natural gas used for heating our UK campuses reduced by 8.2% from 35,427 MWh to 32,521 MWh
- The heating oil used at our Chislehurst Sports Ground reduced by 14.6% from 96,307 kWh to 82,251 kWh Litres
- The electricity used across our UK campuses reduced by 12.2% from 38,270 MWh to 33,592 MWh
- We achieved 53.9% carbon intensity reduction (Carbon / Student) from 1.35 to 0.63 tCO₂e/Student

Building Energy Performance

The Display Energy Certificates (DECs) and Energy Performance Certificates (EPCs) are the main parameters that we currently use to benchmark and monitor the performances of our buildings. The energy performances of our buildings are skewed by the closure or partial opening our campuses due to the COVID-19 pandemic.

The average DECs and EPCs scores of buildings across our UK campuses reduced by 15.4% from 124.7 (2018/19) to 105.4 (2019/20). Figure 3 show the breakdown our DECs and EPCs (over the last three years).

Figure 3: Queen Mary’s DEC and EPC Profile

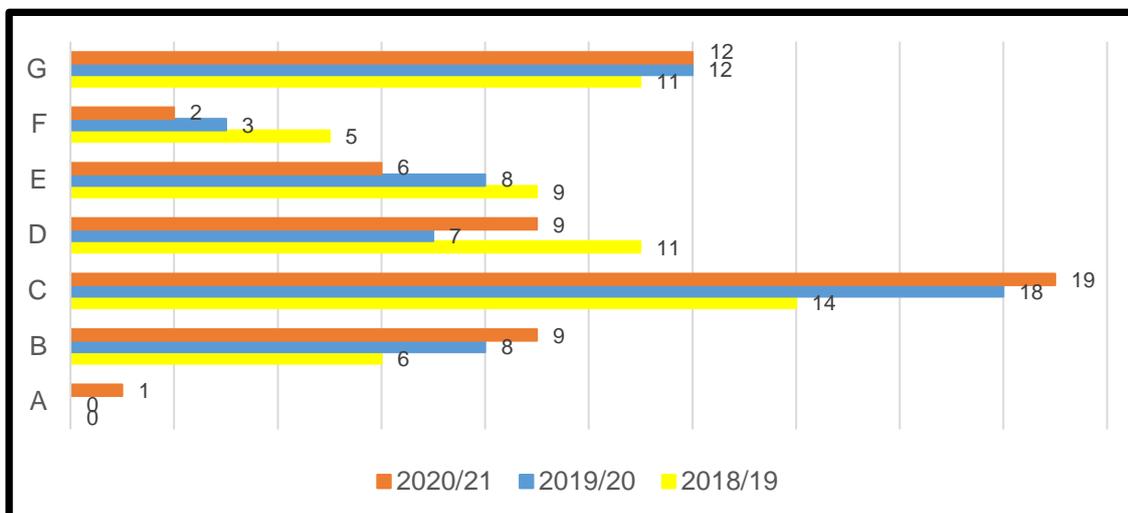


Table 2 contain the energy used across our UK campuses. An overview of the energy used across our estates between 2018/19 and 2020/21 show that we recorded:

- 18.6% reduction in electricity used across our Non-Residential Buildings compared to 10.2% reduction for our Residential Buildings
- 2.7% increase in gas used across our Non-Residential Buildings compared to 26.6% reduction for our Residential Buildings

Table 2: Energy Used across our Residential and Non-Residential Buildings

Year		Residential	Non-Residential	Total
2018/19	Electricity (kWh)	8,103,874	30,165,952	38,269,826
	Gas (kWh)	10,206,644	25,219,919	35,426,563
	Heating Oil (kWh)	0	96,307	96,307
2019/20	Electricity (kWh)	6,122,814	27,264,588	33,387,402
	Gas (kWh)	7,496,094	25,910,816	33,406,910
	Heating Oil (kWh)	0	100,416	100,416
2020/21	Electricity (kWh)	7,279,728	26,312,438	33,592,166
	Gas (kWh)	7,952,138	24,568,433	32,520,571
	Heating Oil (kWh)	0	82,251	82,251

At the end of the 2020/21, academic year we have almost completed the commissioning of the lighting upgrade, building management system (BMS) and boiler optimisation projects funded from the £2.46 Million energy efficiency loan we secured from Salix. We have also secured a £511,251 energy efficiency recycling funds to support the installation of 12.24 kWp photovoltaic panels on the roof of the Queens' Building, the insulation of the roof of the Queens' Building as well as upgrading the IT Server Room located at the Joseph Priestley Building.

As part of our commitment to attain our net zero aspiration, we attracted a £124,399.20 grant to develop our heat decarbonisation plan (HDP). This HDP is aligned with our commitment to optimise current opportunities as well as deliver evidence based carbon reduction and net zero initiatives.

Water Used

The COVID-19 pandemic significantly stalled the implementation of any water efficiency initiatives. However, we recorded a 39.8% reduction in the water used across our UK campuses during the 2020/21 academic year compared to our 2018/19 levels. This

achievement is attributed to the partial closure of our campuses as a result of the restrictions associated with the COVID-19 pandemic.

Table 3 show the comparative summaries of the water used across our Residential and Non-Residential Buildings.

Table 3: Water Used across our UK Campuses

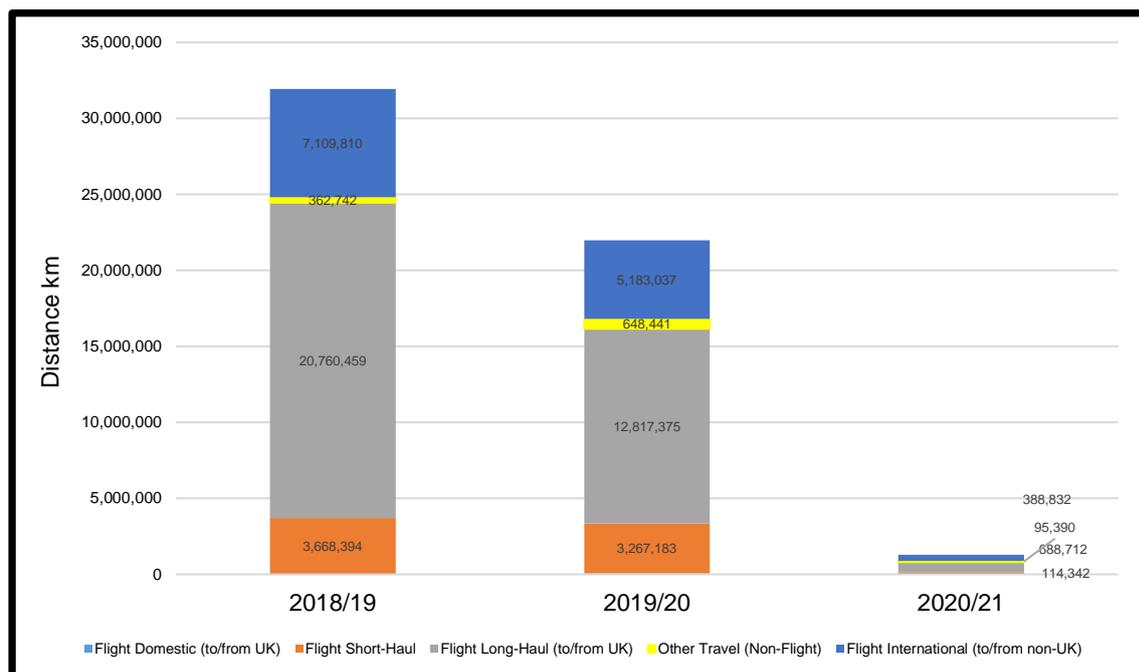
Year	Residential (m ³)	Non-Residential (m ³)	Total (m ³)
2018/19	213,996	131,592	345,588
2019/20	141,484	200,013	341,497
2020/21	126,720	81,313	208,032

As our campuses returns to normal operations during the 2021/22 academic year, we would be exploring and implementing appropriate water efficiency measures across our estates.

Travel and Transportation

Our business travel contributed 37% of our 2018/19 baseline, but this proportion reduced to 2% during the 2020/21 academic year. Our business travel reduced by 96% from 31,931,324 km to 1,287,643 km. As seen in Figure 4, the flight restrictions associated with the COVID-19 pandemic significantly contributed to the reduction of our local, short-haul and long haul flights.

Figure 4: Trend in Queen Mary’s Business Travel



As part of our commitment to encourage sustainable travel, we currently have 858 bicycle storage facilities across our three main UK campuses and sustainable travel and transportation will continue to be an integral priority of all our construction and refurbishment projects. In addition to these cycle storage facilities, we offered two free bicycle maintenance, advice and repair sessions on 27 September 2020 and during the Clean Air Day in June 2021 to all our staff and students.

As we look forward to normal operations after the removal all COVID-19 restrictions, we would continue to monitor the trend and patterns of our business travels. We will also be reviewing and adapting remote working and remote/virtual teaching, networking and working approaches that were common practices during restrictions associated with the COVID-19 pandemic.

Waste Management

During the year under review, the total volume of general wastes generated across our three main campuses reduced by 52% (most of which were estimated), while the proportion of recyclable materials collected from these campuses reduced from 33% to 21% between the 2018/19 and 2020/21 academic years. Table 4 show the breakdown of the residual wastes and recyclable materials collected over the last three years from our main UK campuses.

Table 4: General Wastes and Recyclable Materials Collected from our Campuses

	Year	Charterhouse Square	Whitechapel	Mile End	Total
Recycling (tons)	2018/19	104	41	382	527
	2019/20	73	25	133	231
	2020/21	73	26	63	162
Residual Wastes (tons)	2018/19	282	213	566	1,061
	2019/20	78	215	277	570
	2020/21	78	215	310	603
Total (tons)	2018/19	386	254	948	1,588
	2019/20	151	240	410	801
	2020/21	151	240	374	764

We are aware that waste generation and disposal contribute to climate change and we would continue to promote the benefits of waste segregation and recycling. We have continued to sponsor the ReUse programme, support the used book collection service at our Mile End

campus and the British Heart Foundation (BHF) Pack for Good campaign. These three initiatives are implemented to contribute to waste avoidance.

In spite of the restrictions associated with COVID-19, 3,095 used books were donated during the 2020/21 academic year. The 3,095 books was 79% lower than the number of books donated during the 2018/19 academic. As normal operations return to our campuses, we will promote this scheme to all staff and students. See Table 5 for a summary of the environmental benefits of this scheme.

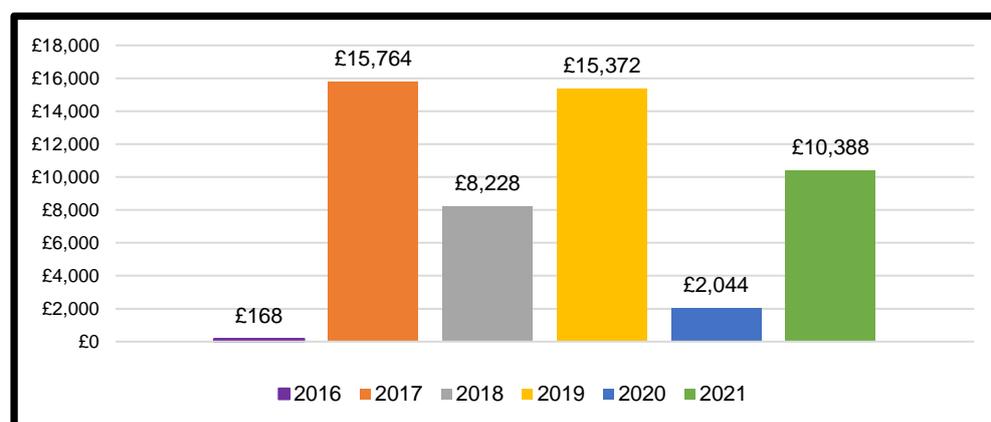
Table 5: Environmental Benefits of Donated Books

Year	Books Donated	Books (kg)	Trees	Green-house Gases (kgCO ₂ e)	Electricity kWh
2018/19	14,766	9,166	237	14,265	48,583
2019/20	6,958	4,319	111	14,749	22,785
2020/21	3,095	1,921	49	2,989	10,181
Total	24,819	15,406	397	32,003	81,549

We have also continued to support the Students' Union (SU) led ReUse campaign aimed at encouraging our students and staff to donate all unused materials at the end of each semester. 126 participated in the 2020/21 ReUse campaign donating 515.6 kg of materials. The volume of materials donated during the 2020/21 academic was 56% lower than our 2018/19 baseline. This implies that there is the need to actively promote this scheme.

We have over the last six-years donated items towards the British Heart Foundation (BHF) Pack for Good campaign. This campaign is aimed at reducing waste disposal, preventing unnecessary waste and carbon emissions, while supporting the funding of heart disease, stroke, vascular dementia and diabetes research. The total amount raised from the items we donated to this campaign over the last six-year was £51,964 (see Figure 5).

Figure 5: British Heart Foundation Pack for Good



Construction and Refurbishment

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

Attaining 'Excellent' and 'Very Good' ratings from the Building Research Establishment Environmental Assessment Method (BREEAM) for all our major new builds and refurbishment projects respectively would contribute to improving the environmental performances our estates. In addition, we use the Royal Institution of Chartered Surveyors' SKA rating assessment for all applicable major fit-out and applicable minor and small refurbishment and reconfiguration projects.

The refurbishment of the Queens' Building is our major on-going refurbishment project. Therefore, to improve the energy performance of this building, we will be investing £152,692 on installing 12.24 kWp photovoltaic panels on the roof of this building as well as to insulate the roof of this iconic building.

We are pleased to report that the recent fit-out of our Department W building achieved the SKA rating of Gold.

Biodiversity

As part of commitment to biodiversity enhance, we have reduced the frequency at which we mow our lawns as well as the use of chemicals. We are also currently manually removing weeds (unwanted plants). These approaches have the potential of improving wildlife and biodiversity.

During the 2021/22 academic year, the Grounds and Gardens Team delivered numerous biodiversity enhancement activities such as: foraging walk; four gardening workshops; three Seed Giveaway workshops and two garden therapy sessions. Approximately 80 students and 15 members of staff attended these activities. One of the highlights of these initiatives is that 60 apple and pear trees and 190 gooseberry and wild raspberry trees were planted creating an orchard and soft fruit garden at our Mile End campus.

Specifically, a community orchard and wildflower meadows were created across our Mile End campus. In addition, the Bronze Hedgehog Friendly Campus Award is one of the recognition of our commitment to biodiversity enhancement.

Our Green Mary Garden is an important area of our Mile End Campus. This garden and allotment plots were constructed to provide opportunities for students, staff, and the wider community (including local schools) to engage with and learn more about the biodiversity and ecological systems. Our Grounds and Gardens Team have continued to manage this allotment and it has been used to cultivate a variety of fruit and vegetables, which were harvested and used by staff and students.

The highlight of our 2020/21 is the planting of six Black Poplar Trees across our Mile End and Charterhouse Square campuses. Black Polar is currently one of Britain's rarest tree species and these trees were planted as part of the celebration of the 2021 World Environment Day. The planting of these trees is also aligned with the London Borough of Tower Hamlets commitment to enhancement across the Borough and the UN Decade on Ecosystem Restoration.

Sustainable Procurement

We have continued to include environmental specifications into relevant aspects of our procurement and commissioning processes as part of our commitment to influence our supply chain to reduce the environmental impacts of their operations as well as to embed good environmental practices into their operations. Specifically, we have continued to challenge our major contractors and suppliers to actively reduce their environmental and carbon footprints.

During the 2019/20 academic year, 11 of our 12 top suppliers and contractors (total spend £24.82 million) had environmental management system (EMS) and nine of these suppliers and contractors have certified ISO 14001:2015 EMS. During the year under review, we reduced the threshold for EMS certification to spends that are greater than £200,000 / annum and 49 contractors of total spends of £59.29 million fall into this scope. 47 (£52.33 million) 98% of these contractors had an EMS and 33 (£43.02 million) 80.7% of these contractors had certified ISO 14001:2015 EMS.

Being a Founding Partner of the London Living Wage Foundation and our current Modern Slavery statement are two indications of our commitment to decent work, economic growth, peace, justice and strong institutions.

Embedding Environmental Sustainability

We are committed to embedding education for sustainable development (ESD) into our academic offering. A review of the current 138 undergraduate courses that we offer show that

62% of these courses / programme have varied proportion of ESD and the principles and application of sustainable development.

In line with our ESD commitment, we are also offering all our students a certified continue professional development (CPD) course on sustainable development. Two of the intended outcomes of this course is that the participating students would become more aware of practical actions that they can take to reduce their environmental footprint as well as the benefits of good environmental practices. During the year under review, 454 students across 19 departments / schools registered for this optional online module.

Furthermore, we are an approved IEMA's Training Centre and we offer all professional services and academic staff the IEMA Environmental Sustainability Skills for the Workforce (ESSW) course and the Foundation Certificate in Environmental Management (FCEM). The ESSW course have been successfully completed by 109 staff across 29 departments / service areas as well as our Malta Campus. This course gives participants an opportunity to gain practical knowledge of environmental risks and opportunities as well as tools that could be used to deliver evidence-based good environmental outcomes.

Our inaugural five-day IEMA Foundation Certificate in Environmental Management (FCEM) was attended by 9 professional services staff, 1 Post-Doctoral Researcher, 2 PhD Research Scholar and 1 Undergraduate. The 12 participants that successfully completed the FCEM are currently Associate Members of IEMA and are applying the knowledge gained from this course into the way they deliver their responsibilities and are actively involved in the implementation of our environmental management system.

As part of our commitment to embed good environmental practices across our laboratories, we have introduced the Laboratory Efficiency Assessment Framework (LEAF) programme. The LEAF tool is being used to improve the environmental performances of our laboratories as well as assist users to appropriately explore opportunities to reduce the environmental impacts of laboratory activities. One of our current Environmental Associates coordinates the LEAF programme. We are pleased to report that during the year under review, 10 laboratory teams participated in the LEAF programme.

One of the highlights of embedding good environmental sustainability across all areas of operations is that we commissioned an Environmental Sustainability Champion group. The Coordinators of this group are currently Associate Members of IEMA and members of our SC. The Environmental Sustainability Champions commissioned are currently promoting good and responsible environmental practices across their areas of work.

We are pleased to report that during the 2020/21 academic year, the Students' Union launched its Sustainability Board (a sub-committee of Student Council) to create student leadership body on sustainability and that the Students' Union for three consecutive year received Gold in their end of year Green Impact audit.

Looking Ahead

Over the last two years, most of our environmental performances were skewed by international and local restrictions and lock-downs associated with the COVID-19 pandemic. Irrespective of this reality, we will have continued to adapt our environmental sustainability delivery approaches to ensure that we effectively respond to the current and emerging environmental opportunities and challenges.

Below are some immediate and short-term initiatives that we will be implementing as part of our environmental sustainability commitments:

- Review and update our environmental sustainability policy to reflect our environmental objectives and vision.
- Continue to use our Environmental Sustainability Action Plan (ESAP) and Environmental policy as the frameworks on which we deliver our commitment to embed good environmental practices into all aspects of our operations as well as comply with all environmental standards and regulations.
- As part of our commitment to promote the benefits of green skills, we will be offering the IEMA environmental sustainability skills for the workforce CPD course to all members of the London Borough of Tower Hamlets Climate Partnerships and Corporate Members of IEMA.
- Develop environmental sustainability induction programmes for all staff and students.
- As restrictions associated with COVID-19 are eased and lifted, we will run environmental sustainability awareness campaigns.
- Develop our HDP and ensure that we are prepared for all subsequent Public Sector Decarbonisation Scheme and government's carbon reduction incentives.
- Develop our concept and model of the Living Laboratory by July 2022.
- Carry out a mini-competition for the waste collection services across our three main UK campuses. Enhanced waste collection data quality will be one of the specifications of this competition.
- Continue to use the SLS' framework to monitor and report our performances against the UN SDGs.

- Attain ISO 14001:2015 Environmental Management System certification by July 2022.

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 report
- Endorse the presentation of this report to the Senior Executive Team (SET)



Environmental Management System

Outcome requested:	That the Sustainability Committee should: <ul style="list-style-type: none"> • Consider this updated system • Approve this system
Executive Summary:	This system provide the framework on which we deliver our commitment to environmental compliance and continuing environmental performance improvement
Alignment with: <ul style="list-style-type: none"> • QMUL Strategy • Internal Policies/Regulations • External Statutory Requirements 	<ul style="list-style-type: none"> • Queen Mary's Environmental Policy 2021 • 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:	<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
Executive Leads:	Ian McManus, Director of Estates and Facilities Philippa Lloyd, Vice Principal Policy and Strategy Partnerships
Date:	1 April 2022

Environmental Management System

Overview

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, supporting and high-quality learning experience and we are committed to supporting world-leading education and research.

This Environmental Management System (EMS) was developed based on the EcoCampus phased approach to implementing ISO 14001:2015 Environmental Management System (EMS). Attaining ISO 14001:2015 certification is one of our priorities to embed good environmental practices across all areas of our operations.

This EMS is being used as a flexible and adaptive framework to support the delivery of our objective to:

- Comply with all relevant regulations
- Fulfil our compliance obligations
- Continue to improve our environmental performance
- Environmental protection, including pollution prevention
- Continually improve our EMS for the purpose of enhancing our environmental performance

The procedures below have been developed to support the implementation of our EMS:

- Non-Hazardous Management Procedure 2022
- Hazardous Waste Management Procedure 2022
- Grounds Management Procedure 2022
- Construction, Refurbishment, Conversion and Fit-Out Procedure 2022
- Discharges to Water Management Procedure 2022
- Discharges to Air Management Procedure 2022
- Emergency Spill Management Procedure 2022
- Emergency Preparedness and Response Procedure 2022

- Contractor Control and Management Procedure 2022
- Energy Monitoring and Management Procedure 2022
- Emergency Preparedness and Response Procedure 2022

Related Documents and Tools

This EMS is linked to:

- Queen Mary's Environmental Policy 2021
- Queen Mary's Environmental Sustainability Action Plan (2020-23)
- Environmental Compliance Register 2022
- EMS Competence and Training Register 2022
- EMS Training Record March 2022
- Environmental Scope and Context Register 2022
- PESTLE (Political, Economic, Sociological, Technological, Legal and Environmental) Analysis Register 2022
- Log of Interested Parties Register 2022

Scope and Context

Currently all functions, processes and operations delivered from our UK campuses are included in the scope of our EMS.

The environmental aspects and compliance requirements that are associated with the activities are integrated into our EMS:

- Emissions to air
- Transport and travel (Fleet and business travel)
- Use and storage of chemical and oils
- Energy use
- Water use
- Construction, refurbishment and demolition
- Waste (hazardous and non-hazardous)
- Grounds and gardens
- Procurement and commissioning

Definitions and Terminologies

The definitions below were adapted from ISO 14001:2015 EMS Standard. These definitions gives insight into the terminologies associated with implementing an EMS.

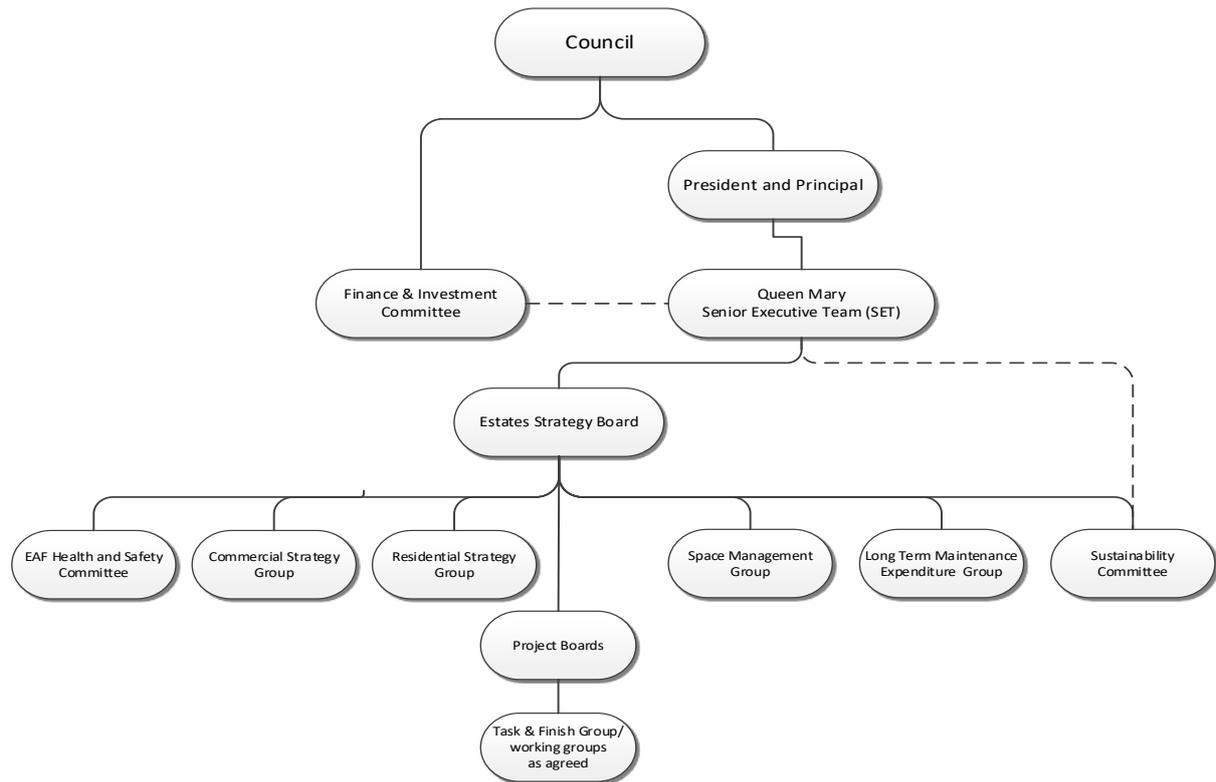
- Audit: systematic, independent and documented process of obtaining audit evidence and evaluating it objectively to determine the extent to which the audit criteria are fulfilled.
- Compliance Obligations: legal requirements that an organisation has to comply with and other requirements that an organisation has to or chooses to comply with.
- Corrective Action: action to eliminate the cause of a nonconformity and to prevent recurrence.
- Documented Information: information required to be controlled and maintained by an organisation and the medium on which it is contained.
- Effectiveness: extent to which planned activities are realised and planned results achieved.
- Environmental Aspect: element of an organisation's activities, products or services that interacts or can interact with the environment.
- Environmental Impact: change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisation's environmental aspects.
- Environmental Indicator: measurable representation of the condition or status of operations, management or conditions.
- Environmental Information Act (EIR): legislation governing the release of public sector information relating to the environment. Environmental information includes information about air, water, soil, land, flora and fauna, energy, noise, waste and emissions. Environmental Information also includes information about decisions, policies and activities that affect the environment.
- Environmental Objective: result to be achieved, set by the organisation, consistent with its environmental policy
- Environmental Performance: performance related to the management of environmental aspects.
- Environmental Policy: intentions and direction of an organisation related to environmental performance, as formally expressed by its top management
- Freedom of Information Act (FOI): legislation governing the release of public sector information.
- Indicator: measurable representation of the condition or status of operations, management or conditions

- Interested Party: person or organisation that can affect, be affected by, or perceive itself to be affected by a decision or activity
- Life Cycle: consecutive and interlinked stages of a product (or service) system, from raw material acquisition or generation from natural resources to final disposal.
- Measurement: Process to determine a value
- Monitoring: determining the status of a system, a process or an activity
- Out-source: make an arrangement where an external organisation performs part of an organisation's function or process
- Process and procedure: Set of interrelated or interactive activities, which transforms inputs into outputs.
- Non-conformity: non-fulfilment of a requirement of the Standard (need or expectation) that is stated, generally implied or obligatory.
- Risks and Opportunities: potential adverse effects (threats) and potential beneficial effects (opportunities).
- Top management: person or group of people who directs and controls an organisation at the highest level. Queen Mary's Senior Executive Team (SET) is its Top Management Group

Leadership and Governance

Our Principal and President is the Chair of the Senior Executive Team (SET) and is the duty holder accountable for the delivery of our environmental sustainability commitments. The Figure 1 show an overview of our environmental governance structure:

Figure 1: Queen Mary’s Environmental Governance Structure



Our SET:

- The strategic overview of our performance in the aspect of climate change adaptation and embedding good environmental practices into the way we deliver teaching, learning and all associated activities.
- Oversight and ownership of our environmental performance and compliance with all relevant environmental regulations and standards.
- Ensuring that resources are available across our University to enhance our resilience to extreme weather conditions as well as current and emerging environmental challenges.

Our Sustainability Committee (SC) is the governance group made up of relevant leaders, stakeholders and interested parties. The SC is responsible for: reviewing its Environmental Management System (EMS); coordinating the delivery of our environmental sustainability

commitments as well as providing assurance of our environmental sustainability performance and environmental regulatory compliance obligations.

The SC reports to our Senior Executive Team (SET) and the Estates Strategy Board (ESB) whenever required.

The Vice Principal, Policy and Strategic Partnerships, who is a member of the Senior Executive Team, provides strategic oversight of our environmental sustainability priorities and chairs the SC. The Vice Chair is the Director of Estates, Facilities and Capital Development.

The membership of the SC is made up of senior managers and leaders across our University, representative of staff trade union, staff groups, students, the Students' Union. Members of the Committee are expected to contribute to the delivery Queen Mary's environmental sustainability objectives. Currently, our SC have members from:

- Academic Faculties
- Human Resources
- Student Services
- Student Representative
- Staff Unions
- Finance
- Procurement
- Information Technology Services
- Marketing and Communications
- Health and Safety
- All Service Areas within the Estates and Facility Directorate
- Sustainability

Roles, Responsibilities and Competence

Internal and external assignment and allocation of responsibilities are fundamental to the implementation of our EMS. Therefore, the membership of our SC will continue to reflect our significant environmental aspects.

The Head of Sustainability in conjunction with the Chair, Vice Chair and members of the SC are responsible for:

- Determining individuals, whose responsibilities have the potential to affect its environmental performance and fulfilment of its compliance obligations, are competent on the basis of appropriate education, training or experience,
- Identifying training needs required to support the delivery of its environmental objectives
- Raising awareness about the benefits of good environmental practices
- Establishing, implementing and maintaining the EMS in accordance with the requirements of ISO 14001:2015 standard
- Identifying individuals (both internal and external) whose roles have, or could have, a significant impact on the environment and communicating the description of these roles and responsibilities within the EMS
- Coordinating the implementation of initiatives that support the delivery of Queen Mary's commitments to continually improve its environmental performance and comply with all relevant environmental regulations and compliance obligations.

Communication, Information and Record Management

Our environmental communication, information and record management process will continually be reviewed to ensure that it robustly meet the demands associated with:

- Incoming enquiries and complaints
- Requests for information
- Information on its intranet and extranet sites

Process

Communication Channels

Our directory <https://dir.qmul.ac.uk> is available to members of the public to access details of individual and departments and <https://www.qmul.ac.uk/about/sustainability> for specific information about its environmental sustainability performances and activities.

Other communications channels that we current use are:

- **Email:** sustainability@qmul.ac.uk
- **Twitter:** @QMULSustain
- **Instagram:** @QMULSustain
- **Facebook:** @QMULSustainability
- **Phone:** 020 7882 5555

Enquiries and Complaints

Enquiries and complaints can be made using any of the above channels or directly to the Sustainability Team. Whenever a formal record is required, these enquiries and responses are maintained by the Sustainability Team.

Requests for Environmental Information

Public requests for environmental information are handled in accordance with the Environmental Information Regulations (EIR), a regulatory function of the Freedom of Information Act (FOI).

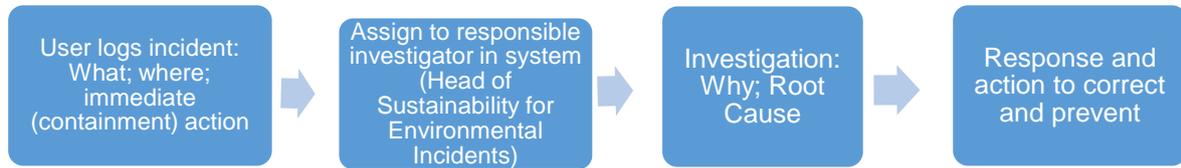
Such requests can be made directly to the Sustainability Team via foi-enquiries@qmul.ac.uk

Incidents

All environmental incidents must be recorded on the **Environmental Incident Report Form** and this completed form return to Head of Sustainability via sustainability@qmul.ac.uk this

form can be found at [Environmental Management System Procedure](#) or requested by emailing sustainability@qmul.ac.uk

This process flow explains the process



Further information about reporting environmental incident can be found within the [Emergency Preparedness and Response Procedure](#).

Document Control and Management

As part of our commitment to attain and maintain ISO 14001:2015 certification, we will continue to ensure that all EMS document, records, reports, toolkit and templates contain adequate and up to date information, suitable for use, protected from loss or damage, easily accessible and distributed as well as retained in usable formats.

All our EMS documents and associated reports are electronically stored and in a consistent version control format.

Below are expected standards of all our EMS documents:

- Documented information, where relevant, are stored electronically within the Sustainability SharePoint folder
- These electronic versions are stored in a version control system
- Relevant staff are informed of changes to documented information and provided with access to the most updated versions
- Documented information remains legible and readily identifiable and produced in the correct format
- Documented information is reviewed and revised (if necessary) as part of the internal audit process and Management Review
- Documents originating from outside Queen Mary, which are important for the planning and operation of the EMS, are identified and their distribution controlled.

Environmental Aspects and Impacts

Our environmental aspects and impacts register that accompany this report aligns with the ISO 14001:2015's Clause 6.1.2. This section:

- Determines the environmental aspects of all our activities within the scope of this EMS, which we can control and influence and associated environmental impacts
- Determines how compliance obligations apply to our environmental aspects
- Considers the life cycle perspective when assessing the significance of our aspects in terms of impacts on the environment under normal, abnormal and foreseeable emergency conditions
- Identifies risks (adverse impacts) and opportunities (beneficial impacts) resulting from significant aspects of our operations

Process: Significant Aspects Criteria

Queen Mary used the environmental criteria outlined in our **Environmental Aspects and Impacts Register**. This Register is used to monitor, manage and report our environmental performances. The assumptions used in developing this register are explained in the succeeding sub-sections.

Operating Conditions

Environmental aspects and its associated impacts are entered, together with type of activity and activity area. Scores are then assessed against normal and abnormal scenarios, as well as foreseeable emergency situations.

Type of Environmental Impact

The aspects are categorised on their potential impacts: positive (beneficial) or a negative (adverse) environmental impact, or not applicable as appropriate, under the different operating conditions.

Impacts Scores (Severity)

The severity of the environmental aspects are scored using a five-point scale depending of the severity of the environmental impact. The score of used for least impact and five representing the highest impact.

Scoring of Likelihood / Frequency of Impact

The likelihood or frequency of impacts are categorised based on the probability of the occurrence of the impacts or the frequency of the occurrence of the impacts.

Compliance Risk

A “Yes” or “No” can be selected in the ‘Compliance Risk’ column, to highlight whether the aspect is governed by legal or other requirements. Aspects with an associated compliance risk are automatically deemed as significant and the cell automatically turns red.

The aspects register calculates the significance of each aspect. The scores for ‘Severity’ and ‘Likelihood / Frequency of Impact’ are multiplied to give rise to significance ratings of between 1 and 25. These scores are used to ranked significance.

The cell colour within the ‘Significance’ column of the register indicates the level of significance. The Table 1 below summarise our significance-scoring guide.

Table 1: Environmental Aspects Significance Guide

Score	Level of Significance	Risk	Action
1 to 3	Very Low	Acceptable Risk	Continue to monitor and review
4 to 9	Low	No Immediate Risk	Continue to monitor and operational control may be required
10 to 19	Medium	Immediate	Concern, continue to monitor and operational control must be put in place
20 to 25	High	High Risk	Urgent action required as well as monitoring and operational control must be put in place

Environmental Objectives, Targets and KPIs

Our environmental objectives, targets and key performance indicators (KPIs) action planner aligns with the ISO 14001:2015's Clauses 6.2.1 and 6.2.2. This section:

- Establishes environmental objectives at relevant functions and levels, ensuring compatibility with strategic direction and consistency with commitments made in the environmental policy, including the commitment to continual improvement
- Takes into account Queen Mary's significant environmental aspects and compliance obligations
- Considers risks and opportunities
- Ensures environmental objectives are measurable (where practicable) and monitored via establishment environmental indicators

Our Environmental Sustainability Action Plan (ESAP 2020-23), contain an overview of all relevant KPIs used to monitor our environmental performances.

Objective Setting

The Head of Sustainability in conjunction with relevant stakeholders and interested parties prepared the [Aspects and Impacts Register, Compliance Register and Interested Parties Log](#). The above reference documents underpinned our ESAP 2020-2023 as well as our current environmental objectives, targets and KPIs.

Operational Planning and Control Procedure

Our planning and control procedure aligns with the ISO 14001:2015's Clause 8.1. This section set out how we:

- Establish, implement, control and maintain the processes associated with identified significant environmental aspects, compliance obligations and risks and opportunities associated with Queen Mary's operations
- Identify the type and extent to which outsourced processes can be controlled or influenced

Process

The Head of Sustainability in conjunction with the Chair, Vice Chair and members of the SC ensures that:

- Relevant departments and personnel contribute to developing appropriate management and control procedures. This includes collaboration with external providers regarding outsourced services
- Actions are implemented to achieve the Queen Mary's environmental objectives, address current and emerging risks and optimise all relevant opportunities
- Control of the procedures so that deviations from operating criteria are prevented
- Relevant processes and operating requirements are communicated to those involved, including suppliers and contractors
- Documented information, such as operating criteria and communications with internal staff and external providers is stored electronically in the Environmental Management System sub-folder and via the Sustainability web site
- Operational procedures and associated criteria are appropriately reviewed and revised as part of the Internal Audit and annual Management Review processes

Monitoring, Measuring, Analysis and Evaluation

Our environmental monitoring, analysis and evaluation procedure aligns with the ISO 14001:2015's 9.1.1 and this procedure is used to demonstrate how we:

- Monitors, measures and evaluates its environmental performance and the effectiveness of the EMS
- Sets environmental performance criteria and indicators

Process

The Head of Sustainability in conjunction with the Chair, Vice Chair and members of the SC:

- Determines how significant aspects and impacts within operational controls are monitored and measured, as well as, compliance with relevant environmental legislation and regulations and conformance to Queen Mary's objectives and targets
- Ensures the method and timing of monitoring and measurement is co-ordinated through **Operation Control Documented Information**. This also outlines who is responsible for collating and analysing the results
- Ensures any monitoring and equipment involved are regularly calibrated and maintained and records generated and filed appropriately
- Sets relevant environmental performance indicators
- Conducts an annual evaluation, including the reporting of trends, via the SC

Environmental Compliance Obligations

Our environmental compliance checklist and register aligns with the ISO 14001:2015's Clauses 4.2 and 6.1.3 and captures all relevant regulations and compliances obligations that are applicable to activities across Queen Mary UK's campuses.

Related Documents

All compliance obligations are detailed within our [Environmental Compliance Checklist](#) and [Environmental Compliance Register](#).

Environmental Compliance and Assurance Process

The two types of environmental compliance requirements that underpin our [Environmental Compliance Register](#) are:

- Mandatory and
- Other requirements

Mandatory Legal Requirements

We currently subscribe to the Comprehensive European Directory of Regulation on the Environment with Commentary (CEDREC) and it is a current Corporate Partner of the Institute of Environmental Management Assessment (IEMA).

CEDREC provide monthly environmental legislation updates via email and a section of IEMA's monthly Transform Magazine contain review of environmental regulations.

In summary, we use CEDREC and IEMA to identify and review mandatory legal requirements related to its environmental aspects.

Other Compliance Requirements

We maintain a log of all interested parties and stakeholders. This log is regularly reviewed to ensure that it is meeting all our environmental commitment and obligations.

Evaluation of Compliance

We will continue to use our evaluation of compliance procedure to demonstrate how we:

- Establish, implement and maintain the procedure for periodically evaluating compliance with applicable legal and other compliance obligations
- Record documented evidence of the periodic evaluation activities

Related Documents

The **Compliance Obligation Register** details all our current environmental compliance requirements. This register is stored in the EMS sub-folder within the Sustainability SharePoint Folder.

Process

The Head of Sustainability in conjunction with the Chair, Vice Chair and members of the SC:

- Maintains knowledge of compliance through appropriate compliance management processes
- Co-ordinates a team to periodically audit (**Internal Audit Programme**) areas where the legal and other compliance obligations apply to ensure that all those involved are complying with these requirements
- Ensures corrective actions following compliance audits are periodically reviewed, and appropriately revised.

The **Internal Audit Report Form** is used during compliance audits and previous audits reports can be viewed within the Internal Audit subfolder, within the EMS subfolder within the Sustainability SharePoint folder.

Internal Environmental Assurance Audit

Our internal environmental assurance audit programme aligns with the ISO 14001:2015's Clauses 9.1.2 and 9.2.2. This programme is also used to demonstrate how we:

- Conduct internal audits of its Environmental Management System (EMS) at planned intervals to determine whether it conforms or meet the requirements of the ISO14001:2015 standard and compliance obligations
- Retains documented information of the audit programme and findings.

Related Documents

Internal Audit Report Forms and the **Internal Audit Programme and Checklist** can be accessed by emailing sustainability@qmul.ac.uk

Process

The Sustainability and Environment Manager, in collaboration with the Head of Sustainability:

- Determines the audit criteria, scope, frequency and the methods to be used. This information is recorded on the **Internal Audit Programme**. It is based on the relevant environmental issues and the results of previous audits
- Ensures that all internal audits are conducted by appropriately trained and competent individuals
- Conduct audit against specific clauses and in line with the audit programme as well as the timely documentation of audit findings, including details of any opportunities for improvement (OFIs) or non-conformances using the **Internal Audit Report Form** template

All the documented information associated with the internal audit programme are stored in the Internal Environmental Audit Folder in the Sustainability SharePoint folder.

Effects and Actions on Non Conformance

We are aware that failure to comply with relevant regulations, compliance obligations and our EMS and associated procedures may result in:

- Non-conformity with the requirements of the ISO 14001:2015 standard
- Civil and / or criminal prosecution

Therefore, the Sustainability and Environment Manager in conjunction with the Head of Sustainability will ensure that robust systems are in place to respond and manage all environmental non-conformances and regulatory breaches as well as avoid environmental harm via the non-conformity and corrective actions.

Non-Conformity and Corrective Action

This section aligns with the ISO 14001:2015's Clause 4.3. This section of our EMS is used to demonstrate how we define the responsibility and authority for investigating and addressing non-conformances. The purpose of this section are for the purpose of:

- Identifying the cause(s) of the non-conformance(s)
- Analysing of the cause(s) of the non-conformance(s) to avoid recurrence(s)
- Exploring and implementing corrective action(s)
- Assessing the effectiveness of the corrective action(s)

Related Documents

The **Non Conformity Log** is used to log all non-conformances and can be accessed via the Internal Audit sub-folder, within the EMS sub-folder within the Sustainability SharePoint folder.

Process

The Sustainability and Environment Manager is responsible for ensuring that:

- Details of any non-conformity identified, usually as a result of internal and external audits, are sent to sustainability@qmul.ac.uk and are recorded on the Nonconformity Log
- The corrective actions and the time-scales required for the implementation of these actions
- The actions taken are appropriate to the magnitude of the non-conformity and the resultant environmental impacts
- The analyses of the effectiveness of corrective actions and determines the root causes of the non-conformities and takes necessary action to prevent recurrences
- After an environmental incident, non-conformance information is provided in the **Environmental Incident Report Form**
- Completed forms are adequately documented and appropriate action to control, correct and deal with the consequences of non-conformities are implemented

Environmental Management Review

This section of our EMS aligns with the ISO 14001:2015's Clause 9.3 and it is used to:

- Review our environmental performance against targets
- Ensure the continuing suitability, adequacy and effectiveness of our EMS and associated procedures
- Review key elements of the EMS
- Review findings from internal external audits and evaluations of compliance
- Assess opportunities for environmental performance improvement
- Ensure that appropriate resources/responsibility are available to implement and maintain the EMS

Process

The Head of Sustainability and the Chair and Vice Chair of the SC ensures:

- The Management Review is the main agenda of at least one SC meetings during each anaemic year usually following internal and external audits
- The Management Review takes into consideration the following:
 - The status of actions from previous management reviews
 - Changing circumstances regarding external and internal issues relevant to the EMS, such as the needs and expectations of interested parties, compliance obligations, significant environmental aspects as well as risks and opportunities
 - Evaluation of the performance of Queen Mary against its environmental sustainability objectives
 - Environmental performance information, such as the findings of recent internal audits and compliance evaluation
 - The status of nonconformities and corrective actions
 - Relevant internal and external communications from interested parties.
- The Management Review addresses the continuing suitability, adequacy and effectiveness of the EMS and makes recommendations for improvement.
- Expected outputs from these meeting include decisions and actions related to improvements and change in the EMS and Environmental Objectives, as well as opportunities to integrate the EMS with other internal processes and in line with the strategic direction of Queen Mary.

Version Control

Date	Version	Lead	Due for Review:
7 May 2021	1.0	Head of Sustainability	6 May 2022
1 April 2022	2.0	Head of Sustainability	31 March 2023

Conclusion and Recommendation

That the Sustainability Committee should:

- Consider this updated system
- Approve this system



EMS: Non-Hazardous Waste, Hazardous Waste and Grounds Management Procedure

Outcome requested:	That the Sustainability Committee should: <ul style="list-style-type: none"> • Consider these procedures • Approve these procedures
Executive Summary:	These three procedures have been updated based on current procedures and in line with relevant regulations and standards: <ul style="list-style-type: none"> • Non-hazardous Waste Management Procedure • Hazardous Waste Management Procedure • Grounds Management Procedure
Alignment with: <ul style="list-style-type: none"> • QMUL Strategy • Internal Policies/Regulations • External Statutory Requirements 	<ul style="list-style-type: none"> • Queen Mary’s Environmental Policy 2021 • 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:	<i>Not Applicable</i>
Confidentiality and Distribution:	<i>Non-restricted</i>
Equality Impact Assessment:	<i>Not Applicable</i>
Author(s) :	Bronwen Eastaugh, Student Engagement and Partnerships Manager (Environmental Associate)
Date:	1 April 2022

Non-Hazardous Waste Management Procedure

Lead:	Facilities Manager, Estates and Facilities
Reviewed by:	Bronwen Eastaugh, Environmental Associate
Approved by:	Sustainability Committee
Date Approved:	1 April 2022
Date due for Review:	31 March 2023
ISO 14001:2015 Clause:	8.1

Purpose

This procedure details how non-hazardous wastes and recycling processes are managed across Queen Mary's UK campuses in order to:

- Address the risks and opportunities associated with the waste aspect
- Ensure that waste documentation is stored and maintained
- Increase the amount of material segregated for recycling
- Ensure compliance with relevant environmental legislation

Scope

This procedure covers the storage and disposal of all non-hazardous waste streams across Queen Mary, University of London (Queen Mary) UK campuses.

Definitions (ISO14001:2015)

- *Risks and Opportunities*: potential adverse effects (threats) and potential beneficial effects (opportunities)
- *Procedure*: Set of interrelated or interactive activities, which transforms inputs into outputs.

Responsibilities

Role / Position	Responsibilities
Head of Sustainability	Coordinates training and learning opportunities for all interested parties and relevant stakeholders on environmental compliance as well as risks and opportunities associated with non-hazardous waste management.

Role / Position	Responsibilities
Facilities Manager (Supported by the Assistant Facilities Managers)	<ul style="list-style-type: none"> • Coordinates the management of all non-hazardous wastes generated across Queen Mary's Campuses. • Ensure that all Queen Mary appointed non-hazardous waste hold relevant permits / licences / exemptions • Collation of all non-hazardous waste data for annual Estates Management Record (EMR) submissions • Ensure that all Queen Mary's licences / permits / exemptions are up to date • Ensure that all Waste Transfer Notes (WTN) are correctly completed and kept for a minimum period of two years.
Cleaning Porters	<ul style="list-style-type: none"> • Responsible for the transfer of all wastes from 1100L bins at temporary waste storage areas to the waste and recycling locations • Responsible for storing wastes into the correct compactors/skips
Cleaning Porters and Grounds Operatives	Removal of waste from all internal and external bins in offices, academic buildings, research facilities and student halls of residence kitchens and transfer to 1100 L bins at the temporary storage areas.
All staff, Students and Visitors	Ensure that all waste are appropriately segregated based on the waste management hierarchy and correctly stored in stored.
Waste Contractor	<ul style="list-style-type: none"> • Responsible for the transfer and disposal of waste from 1100L Bins located around campus • Responsible for the transfer and disposal of waste found in the Compactors and Skips • Responsible for the transfer and disposal of Cardboard Bales
Sustainability and Environment Manager	Responsible for the periodic audit of this procedure and associated activities against relevant regulations and ISO 14001:2015 EMS clauses and ensure that corrective actions are put in place to address any non-conformance(s).
Queen Mary's Environmental Associates	<ul style="list-style-type: none"> • Responsible for the review of this procedure in conjunction with all relevant stakeholders and interested parties.

Related Documents

This procedure is linked to:

- Queen Mary's Environmental Policy 2021

- Queen Mary's Environmental Sustainability Action Plan (2020-23)
- Queen Mary's Environmental Management System (EMS) 2022
- Queen Mary's Environmental Aspects and Impact Register 2022

Non-Hazardous Waste Management Overview

Waste

Waste is defined in the European Waste Framework Directive 75/442/EEC as any "substance or object, which the producer or the person in possession of it discards or intends to discard or is required to discard". All scrap materials, any unwanted materials, or any substance or article that is broken, worn-out, contaminated or spoiled and which the user intends to dispose of are classified as waste.

Waste Storage Collection Locations

Any designated area within Queen Mary's premises at which waste storage bins, containers or skips are stored. Only designated waste collection points must be used for storing wastes or recyclable materials for collection for treatment or disposal. These storage locations must not constitute public health and/or health and safety risks.

Duty of Care

This is a requirement that all waste producers, importers, carriers and those involved in the disposal of waste take all reasonable steps to ensure that wastes are properly segregated, described, stored, transported and treated or safely disposed of.

Waste transfer Note (WTN)

A WTN is a document, which demonstrates that all non-hazardous wastes generated across Queen Mary's premises or as a result of its operations, are properly collected, treated or safely disposed. WTNs must be kept for a minimum period of two years.

Waste Producer(s)

Any Queen Mary's employee, staff, volunteer and visitors whose activities generate waste, is a waste producer. It is the responsibility of everyone across Queen Mary to ensure that any waste they generate is safely handled, appropriately segregated and stored in line with this procedure, all relevant regulations and standards.

Non-Hazardous Waste Management Process

The following waste streams are managed by our Engineering and Estates Management Team:

1. Mixed recyclables
2. General waste

3. Food waste
4. Glass
5. Waste skips (Bulky waste)
6. Sanitary waste
7. Grounds and garden waste
8. Confidential waste
9. Toner cartridges

The catering department is responsible for the control and disposal of waste cooking oil.

Dry Mixed Recycling (DMR)

These are non-hazardous materials that can be used in their current state or can be processed or modified to be reused. Recyclable materials must be placed in the correct colour coded plastic bags and stored appropriately in DMR containers across Queen Mary's premises. Some examples of dry mixed recycling materials are:

- Metals: such as food cans, drinks cans, biscuit and chocolate tins. Excluding metals generated in our workshops
- Paper: such as: office paper; newspaper and magazines; paper bags; catalogues and greeting cards
- Plastics: such as: margarine tubs; yoghurt pots; bottles; plastic film and bubble wraps
- Cardboards: such as boxes and food sleeves that must be flattened before disposed into the dry mixed recycling containers

The Process below summarises how DMR is managed across Queen Mary:

1. Suitable bins for the segregation of dry mixed recycling and general waste are provided internally and externally around campus
2. **Bags**
 - a. Mile End: Green plastic bags are used to line dry mixed recycling bins
 - b. Whitechapel: Red plastic bags are used to line dry mixed recycling bins
 - c. Charterhouse Square: Green plastic bags are used to line dry mixed recycling bins,
3. Waste bags are removed from bins and transported to the relevant temporary waste areas and placed in the correct 1100 L bin, which is clearly labelled
4. Waste Contractor empties 1100L bins as per agreed upon collection schedule at all locations apart from behind the curve and between Creed and Beaumont. The 1100L bins here are transported by QM janitors and disposed of in the 14yrd recycling compactor.

General / Residual Waste

All forms of non-confidential and non-hazardous waste or unwanted materials generated across Queen Mary's premises, or vehicles, that cannot be recycled are regarded as general/"residual" wastes. These wastes must be placed in black plastic bags and stored appropriately in the general waste bins available across all Queen Mary's premises. Some examples of general wastes are:

- Non-Compostable food wastes;
- Food contaminated materials;
- Tissues, paper towels and serviettes;
- Tea bags and serviettes;
- All non-hazardous and non-healthcare wastes generated from any Queen Mary's premises or vehicles.

The Process below summarises how General Waste is managed across Queen Mary:

1. Suitable bins for the segregation of dry mixed recycling and general waste are provided internally and externally around campus
2. **Bags**
 - a. Mile End: Black plastic bags are used to line general waste bins.
 - b. Whitechapel: Clear plastic bags are used to line general waste bins
 - c. Charterhouse Sq: Clear plastic bags are used to line general Waste Bins
 - d. Chislehurst: Clear
3. Waste bags are removed from bins by Cleaning Operatives/Grounds Operatives and transported to the relevant temporary waste areas and placed in the correct 1100 L bin, which is clearly labelled.
4. Waste Contractor empties 1100L bins as per agreed upon collection schedule at all locations apart from behind the curve and between Creed and Beaumont. The 1100L bins here are transported by QM janitors and disposed of in the 30 general waste compactor recycling compactor.

The process flow charts summarises the recycling and general waste management procedure



Cardboard Waste

Currently there are 2 locations cardboard is specifically segregated for baling this is The Curve and cardboard from residential deliveries.

The process for signposting of this cardboard is as follows:

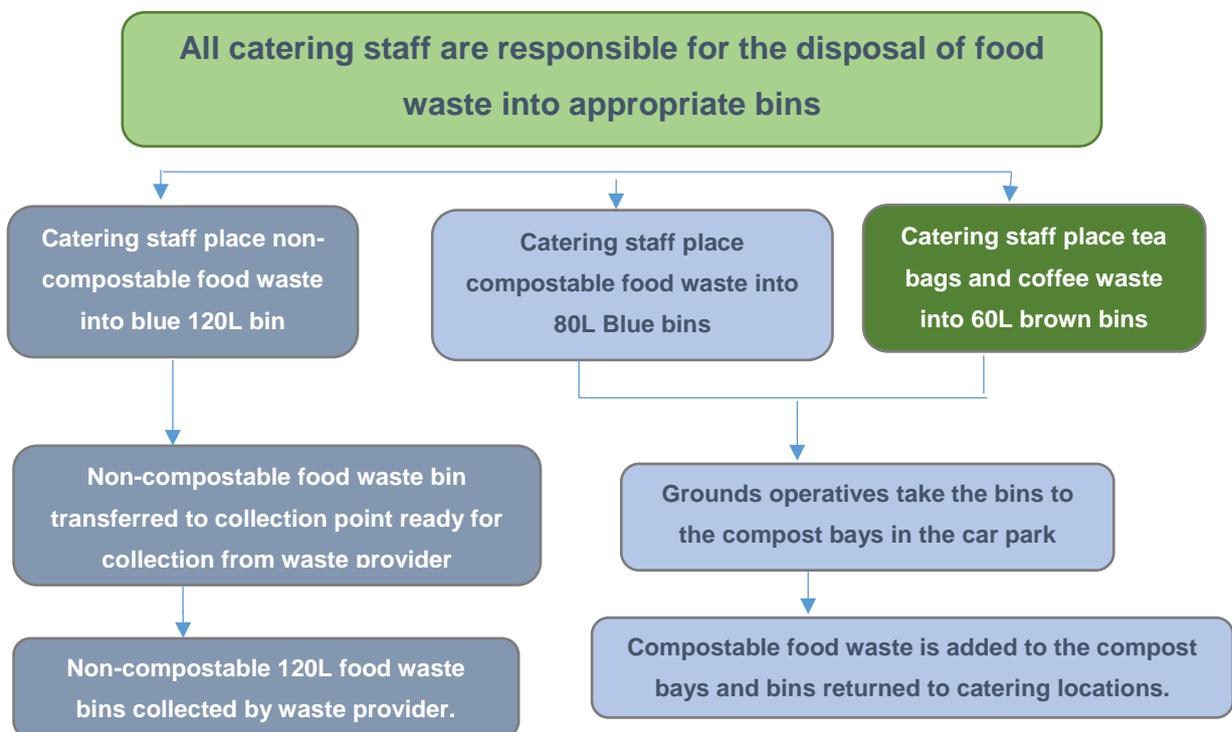
- Staff flat pack the cardboard and place in the brown towable 1100L bin
- Porters tow the 1100L bin to the recycling area
- Cardboard is placed in the baler and baled

- Once 4 bales have been made, the waste contractor is contacted to make collection by the Facilities Manager.
- Waste contractor makes collection and disposed of the cardboard bales.

Food Waste

1. All food waste from Whitechapel and Mile End are deposited at the Mile End campus, a buggy from the catering team transfers the food waste between the campuses.
2. Suitable bins and bags for the segregation of compostable and non-compostable food waste are provided at The Curve Catering Outlet. Smaller bins are provided in all Queen Mary catering outlets to store tea bags.
3. 120 L blue food waste bins are available for non-compostable food waste, bags are used for compostable food waste and 60L brown bins are used for tea bags
4. Blue non-compostable food waste bins are collected by Queen Mary's appointed waste collected service contractor from behind The Curve. Bags with compostable waste are emptied by the Ground and Garden Operatives into the compost bays located within the car park located within the Student Village of the Mile End Campus.

The Flow chart below details the food waste management procedure



Confidential Wastes

Confidential wastes contain either personal or sensitive information. These wastes must be placed in designated confidential waste receptacle, securely stored and disposed in compliance with the

Freedom of Information Act 2000 (Section 46), Environmental Information Regulations 2004, Data Protection legislation and the General Data Protection Regulation (GDPR), examples of confidential information include but not limited to:

- Data collected under a guarantee of confidentiality
- Any person identifiable information
- Any document which reveals the contact details, financial or health details of an individual
- Job applications
- References
- Interview notes
- Employees' performance review information
- Any record which if made public before a certain period may breach commercial confidentiality
- Any record that may breach intellectual property rights

The penalties for not complying with Data Protection legislation could be severe both to individuals and to Queen Mary. Therefore, it is everyone responsibility to ensure that confidential waste are securely and appropriately stored.

Confidential wastes and materials are put into white shredding bags ready for collection by the porters, the porters then deliver these bags to the Copy Shop for collection and shredding by Queen Mary's appointed Confidential Waste Service Contractor.

Grounds and Garden Waste

Queen Mary composts its garden waste and has a T23 - Aerobic composting and associated prior treatment waste exemption. All non-compostable garden waste are stored by the Grounds Operatives in the bulk waste skip located at the yard.

Waste Cooking Oil

Waste cooking oil from the catering outlets are transferred directly into the main waste compound by the catering staff and stored in 1100 L containers placed within appropriately sized bunds.

Toner Cartridges

HP recycling boxes are placed across Queen Mary's campuses for storing toners. Each box can hold 150-200 cartridges. Once the boxes are full; relevant staff raises ticket through the IT services helpdesk for the collection of these wastes.

Glass

Glass waste from the catering outlets, venues and halls of residences are transferred directly to the relevant waste storage locations and stored within the 240L bottle storage containers.

Waste Skips (Bulk Waste)

Bulk wastes are often generated during premises clear-outs or de-cluttering. Appropriate skips must be used to store these wastes. Details on how skips should be used are as follows:

- Skips must be used for temporary storage of all bulk wastes from our premises
- Skips must be ordered via Queen Mary's Estates and Facilities Team
- Skips must not be used to store hazardous wastes
- Skips must not be used to store waste electrical and electronics equipment (WEEE)
- Queen Mary's Estates and Facilities team must be informed to arrange the removal of these skips as soon as possible.

Bulky wastes are stored within designated skips located within the waste compounds. These are exchanged weekly by Queen Mary's appointed Waste Collection Service Contractors.

Sanitary Wastes

Sanitary wastes are solid, non-infectious, personal hygiene waste such as disposable nappies, pads and tampons. There are sanitary waste receptacle(s) across all Queen Mary's premises. Sanitary and hygiene wastes must not be mixed with other waste streams or flushed down any water closet (toilet).

Access is provided for contractors to exchange the sanitary waste bins from the Residential Halls and all Queen Mary's buildings. The sanitary bins are exchanged after 09:00 Hours and all students are notified of scheduled sanitary waste bins replacements.

Waste Licences

Queen Mary currently have the following waste exemptions and permits for:

1. Storing, treating and using waste (EPR/AF5846GH/A001)
2. Lower Tier Waste Carrier Dealer (CBDL/65465)
3. Aerobic composting and associated prior treatment waste exemption (T23)

Waste Inventory

The waste inventory details the commonly generated non-hazardous wastes generated across Queen Mary's campuses.

Waste Stream	EWC Code	Waste Carrier	Registration Certificate	Expiry Date	Waste Disposal Facility	License / Permit / Exemption
Dry mixed recycling	200101	Bywaters	CBDU100793	30 April 2022	Bywaters, Twelvetrees Crescent, E3 3JG	SP3093EA/V004
General Waste	200301	Bywaters	CBDU100793	30 April 2022	Cory Riverside, Norman Road North, Belvedere DA17 6JY	Smuggler's Wharf MRF and Transfer Station (FP3598VA/A001 and KP3690EV/T005); Walbrook Wharf Transfer Station (DP3691ND/S003); Cringle Dock Transfer Station (GP3790EN/T008); Northumberland Wharf Transfer Station and Amenity Site (FB3605LE/T001 and GB3332AD/T001); Belvedere Riverside Resource Recovery Facility (FB3038AB/A001).
Glass	200102	Bywaters	CBDU100793	30 April 2022	Bywaters, Twelvetrees Crescent, E3 3JG	SP3093EA/V004
Food Waste	200108	Bywaters	CBDU100793	30 April 2022	Bio Collectors Ltd 10 Osier Way Mitcham Surrey CR4 4NF	JB3737WE
Confidential Waste	200101	G&M	CBDU84584	28 February 2025	5A North Crescent E16 4TG	WEX 174046
Sanitary waste	180104	Citron Hygiene	CBDU292164	6 June 2022	Barking Site Unit 3 New England Industrial Estate Gascoigne Road Barking Essex IG11 7NZ	EPR/HB3804FZ
Garden waste	020103	Bywaters	CBDU100793	30 April 2022	Cory Riverside, Norman Road North, Belvedere DA17 6JY	Smuggler's Wharf MRF and Transfer Station (FP3598VA/A001 and KP3690EV/T005);

Waste Stream	EWC Code	Waste Carrier	Registration Certificate	Expiry Date	Waste Disposal Facility	License / Permit / Exemption
						Walbrook Wharf Transfer Station (DP3691ND/S003); Cringle Dock Transfer Station (GP3790EN/T008); Northumberland Wharf Transfer Station and Amenity Site (FB3605LE/T001 and GB3332AD/T001); Belvedere Riverside Resource Recovery Facility (FB3038AB/A001).
Cooking oil	200125	Bywaters – Outsourced to Oileco	CBDU67998	22 November 2024	Olleco Northampton Road Blisworth Northamptonshire NN73DW	EPR/LP3032NC
Toner cartridges	160216	TNT UK LTD	CBDU93735	25 March 2022	LGI Logistics Group International UK Ltd	Approval Number WEE/GR0002ZS/ATF

Documented Information

All documented information relating to the disposal of all non-hazardous wastes generated across Queen Mary are held by the Facilities Manager, Estates and Facilities.

Relevant documented information include:

- Waste contractors and agreements
- Copies of waste contractor licenses
- Waste transfer notes
- Evidence of communications relating to the waste management process.

Effects and Actions on Non-Conformance

Failure to comply with this procedure may result in:

- Non-conformance with the ISO 14001:2015 standard
- Civil and / or criminal prosecution

Departure from this procedure is addressed in the **Non-Conformance, Corrective and Preventive Action Section** of our Environmental Management System.

Version Control

Date	Version	Lead	Due for Review
15 March 2021	1.0	Facilities Manager, Estates and Facilities	14 March 2022
1 April 2022	2.0	Facilities Manager, Estates and Facilities	31 March 2023

Conclusion and Recommendation

That the Sustainability Committee should:

- Consider this procedure
- Approve this procedure

Hazardous Waste Management Procedure

Lead:	Assistant Facilities Manager, Estates and Facilities
Reviewed by:	Bronwen Eastaugh, Environmental Associate
Approved by:	Sustainability Committee
Date Approved:	1 April 2022
Date due for Review:	31 March 2023
ISO14001(2015) Clause:	8.1

Purpose

This procedure details how hazardous wastes generated across Queen Mary, University of London (Queen Mary) UK's campuses are managed in order to:

- Address the risks and opportunities associated with the hazardous waste aspect;
- Ensure that hazardous waste documentation is stored and maintained;
- Ensure that hazardous waste is handled and stored appropriately;
- Ensure compliance with relevant environmental legislation.

Scope

This procedure covers the storage and disposal of all hazardous waste streams generated across Queen Mary's UK campuses.

Definitions (ISO14001:2015)

- *Risks and Opportunities*: potential adverse effects (threats) and potential beneficial effects (opportunities)
- *Process*: Set of interrelated or interactive activities, which transforms inputs into outputs.

Responsibilities

Role / Position	Responsibilities
Head of Sustainability	Coordinates training and learning opportunities for all interested parties and relevant stakeholders on environmental compliance and risks associated with hazardous waste management.

Role / Position	Responsibilities
Health and Safety Advisers and Managers	<ul style="list-style-type: none"> • Coordination of the safe storage, appropriately segregation and consignment of all laboratory generated hazardous wastes, excluding WEEE (Waste from Electrical and Electronic Equipment) across Queen Mary's campuses and for liaising with duly appointed hazardous waste collection service contractors for the collection, treatment and disposal of all hazardous wastes. • Ensure the retention of all laboratory generated hazardous waste consignment notes for a minimum period of three years. • Ensure that all laboratory generated hazardous wastes across Queen Mary's campuses are managed in line with relevant environmental regulations. • Collation of all hazardous waste data for the annual Estates Management Record (EMR) submissions.
Facilities Manager (Supported by the Assistant Facilities Managers)	<ul style="list-style-type: none"> • Coordination of the appropriate storage, collection, treatment and disposal of all WEEE generated across non-laboratory facilities at Queen Mary's campuses. • Ensure the retention of all WEEE consignment notes for a minimum period of three years. • Collation of all WEEE data for the annual Estates Management Record (EMR) submissions. • Ensuring that all WEEE generated across Queen Mary campuses are managed in line with relevant environmental regulations.
Porters	<ul style="list-style-type: none"> • Appropriate transfer and labelling of WEEE to the storage compound ready for collection. • Appropriate transfer and labelling of non-laboratory hazardous waste.
Engineering and Estates Management Team	<ul style="list-style-type: none"> • Transfer waste fluorescent tubes to the designated coffin.
Information Technology Department	<ul style="list-style-type: none"> • Ensure that all Information Technology WEEE are appropriately stored and collected by licensed hazardous waste collection service contractors. • Ensure the retention of all WEEE consignment notes for a minimum period of three years.

Role / Position	Responsibilities
Departmental Laboratory Hazardous Waste Manager	<ul style="list-style-type: none"> Ensure that all hazardous wastes generated across Queen Mary's laboratories are appropriately stored in line with relevant environmental regulations.
Sustainability and Environment Manager	Responsible for the periodic audit of this procedure and associated activities against relevant regulations and ISO 14001:2015 EMS clauses and ensure that corrective actions are put in place to address any non-conformance(s).
All Lab Users	<ul style="list-style-type: none"> Safely and appropriately, use hazardous waste receptacles to store all hazardous wastes generated across Queen Mary's laboratories.
Queen Mary's Environmental Associates	<ul style="list-style-type: none"> Responsible for the review of this procedure in conjunction with all relevant stakeholders and interested parties.

Related Documents

This procedure is linked to:

- Queen Mary's Environmental Policy 2021
- Queen Mary's Environmental Sustainability Action Plan (2020-23)
- Queen Mary's Environmental Management System (EMS) 2022
- Queen Mary's Environmental Aspects and Impact Register 2022

Hazardous Waste Overview

Hazardous wastes have potential to cause harm to human health or the environment. Some examples of hazardous wastes include but not limited to:

- Oil contaminated wastes
- All explosive, oxidising, flammable, irritant, corrosive, toxic, carcinogenic and mutagenic substances
- All clinical wastes and eco-toxic materials
- Waste oils and materials contaminated with waste oils
- Paints, solvents, acids and alkaline solutions
- Pesticides and chemicals
- Waste electrical and electronic equipment (WEEE)
- Batteries and fluorescent tubes
- Asbestos
- Radioactive waste

Clinical Waste

Any waste consisting wholly or partly of human or animal tissue, blood or other body fluids, excretions, drugs or other pharmaceutical products, swabs or dressings, or syringes, needles or other sharp instruments, being waste which unless rendered safe may prove hazardous to any person coming into contact with it.

Any waste arising from medical, nursing, dental, veterinary, pharmaceutical or similar practices, investigation, treatment, care, teaching or research, or the collection of blood for transfusion, being waste which may cause infection to any person coming into contact with it. Some hazardous clinical waste (materials / consumable / sharps) may contain chemical contaminants or cytotoxic / cytostatic compounds.

Waste Electrical and Electronic Equipment (WEEE)

All waste consisting of electrical devices including battery powered devices and electronic and mechanical information technology, communications equipment, mobile telephones, and non-lead acid batteries generated as a result of Queen Mary's activities are classified as WEEE.

All WEEE must be appropriately stored for treatment or disposal. The Facilities Manager (supported by the Assistant Facilities Managers) is responsible for managing the storage and disposal of all WEEEs generated across the University (excluding out of scope or damaged IT equipment).

Some examples of WEEE managed by Queen Mary's Facilities Manager include but are not limited to:

- Faulty or damaged television(s)
- Faulty or damaged audio and entertainment equipment
- Dry cell batteries
- Fluorescent tubes and light bulbs (excluding vehicle light bulbs)
- Faulty refrigerators, dish washers and washing machines
- Faulty electric heating and ventilation equipment
- Faulty electric cookers and microwaves
- Faulty vacuum cleaners and jet washers
- Faulty electric kettles
- Faulty electric fans
- Faulty electric irons
- Faulty electric toasters

Hazardous Waste Producers

Any Queen Mary employee or volunteer whose activities generate waste is a waste producer. It is the responsibility of everyone at Queen Mary to ensure that any wastes they generate are safely handled, appropriately segregated, and stored in line with relevant regulations, standards, and this procedure.

Hazardous Waste Storage and Collection Locations

Any designated area within Queen Mary's premises at which United Nations approved hazardous wastes are stored. Only designated waste collection locations must be used for the temporary storage of hazardous wastes prior to collection for treatment or disposal. These storage locations must not be easily accessible not constitute public health and health and safety risks.

Hazardous Waste Collection Service Contractor(s)

Any individual or organisation that hold appropriate licences, permits and exemptions appointed by Queen Mary to:

- Provide UN approved waste storage receptacles
- Consign, handle, transport and treat wastes prior to its final disposal.

These contractors must always ensure that their processes are compliant with all relevant environmental and hazardous waste regulations and standards

Duty of Care

This is a requirement that all waste producers, importers, carriers, and those involved in the disposal of waste take all reasonable steps to ensure that wastes are properly segregated, described, stored, transported, and treated or safely disposed

Consignment Note

A consignment note must accompany all hazardous wastes removed from all of Queen Mary's premises. All clinical and hazardous wastes (such as oily rags, vehicle oil filters and used oil) cannot be collected from Queen Mary's premises without a duly completed consignment note. Consignment notes are legal documents that must be kept for a minimum of 3 years at the premises from which hazardous wastes are removed.

Yellow Clinical Waste Bags

Provided by clinical waste contractor for the storage of solid wastes, trace liquids only, and non-sharps waste. Yellow clinical waste bags are suitable for the following wastes without pre-treatment:

- Negligible / low risk biological / clinical material waste and disposable consumables contaminated by materials equivalent to Advisory Committee on Dangerous Pathogens (ACDP) Hazard Group
- Genetic Modified (GM) Class 1 Waste such as tissue/blood sample solid residues that are known to be of negligible/low infectious risk and negligible/low risk animal by-products.

The following require pre-treatment before being placed into yellow clinical waste bags:

- Pathogenic wastes - ACDP HG 2 and 3
- Specified Animal Pathogens Order (SAPO) Class 2 and 3 waste
- GM Class 2 and 3 waste
- Medium-high risk biological/clinical waste
- Soils samples from unknown sources
- Plant or soil samples containing GM materials.

Sharp Containers

Sharp containers are used for the storage of all solid sharps waste including tips, serological pipettes, scalpels, needle sticks and syringes, microscope slides, glass Pasteur pipettes, small glass vials / ampoules (empty or trace liquid contamination).

- Yellow lidded sharps bins are used for non-blood containing infectious materials
- Orange lidded sharps bins are used for blood/phlebotomy related sharps (blood contact > 5% w/w)
- Purple lidded sharp bins are used for significant contaminated sharps (blood contact > 5% w/w), cytostatic and cytotoxic contaminated sharps.

Sharps containers are suitable for the following wastes without pre-treatment; Negligible / low risk biological / clinical contaminated sharps waste equivalent to ACDP Hazard Group and GM Class 1 Waste. As well as the following wastes following validated pre-treatment, Sharps contaminated with medium to high risk infectious biological/ clinical materials

Waste Oil Containers

Waste oils are hazardous, and all waste oil must be stored in marked leak-proof compliant containers within an appropriate bund.

Oil Contaminated Wastes

Oil contaminated materials must be appropriately stored and disposed as hazardous waste. Oil contaminated wastes must be segregated from other waste streams.

Hazardous Waste Management Process (Excluding Laboratories)

1. Departments, other than laboratories, that generate hazardous wastes are expected to contact the estates helpdesk to arrange for the collection of these wastes; alternatively, they can log their request via Ivanti (Queen Mary's Estates Help Desk portal)
2. It is the responsibility of the waste producer to provide details of:
 - a. the wastes location
 - b. type of waste
 - c. approximate or actual quantity
 - d. Additional description from the material safety data sheets (MSDS)
3. Porters label, collect and transfer these wastes to the designated hazardous waste storage location
4. Hazardous wastes is stored within the hazardous waste bins at the closest hazard waste compound waste compound
5. The Facilities Manager or designated Officer arranges for the waste to be collected by a licensed hazardous waste collection service contractor based on contractual agreement
6. Fully completed consignment notes must accompany the removal of all hazardous wastes.
7. On collection of the waste, the waste contractor must provide a consignment note with parts A to D completed, which is signed by a Waste Porter and an employee of Queen Mary appointed hazardous waste collection service contractor.
8. Queen Mary's hazardous waste collection service contractors must send quarterly hazardous waste returns to the Facilities Manager.
9. The consignment notes and hazardous waste quarterly returns must be kept for a minimum period of three years.

Fluorescent Tubes

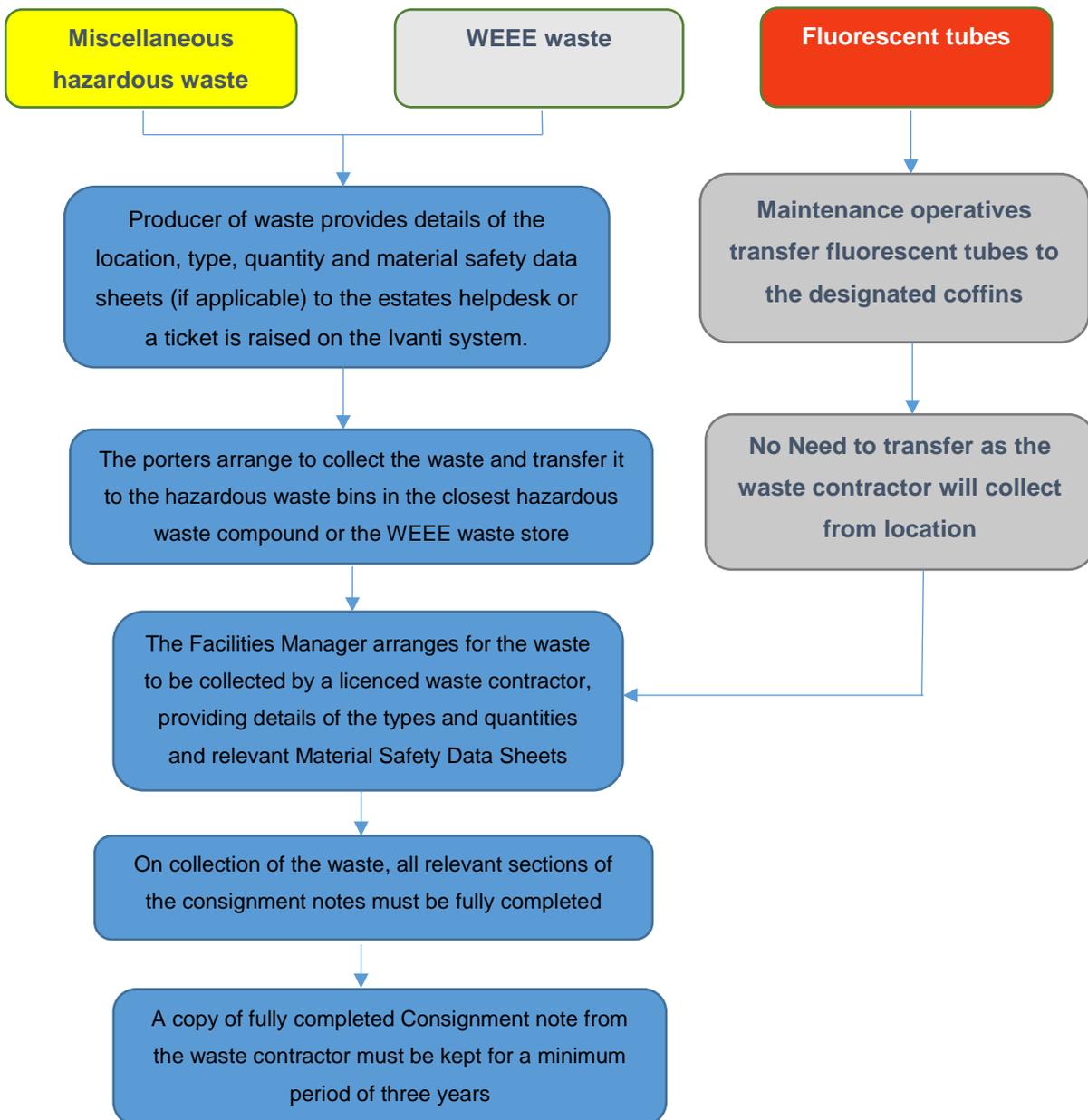
1. The Estates Operations and Maintenance Team is responsible for transferring waste fluorescent tubes to the designated coffin.
2. Once a fluorescent tube has been replaced, the old tube is taken to the waste compound and stored in a coffin, which has space.
3. Once the coffins are full, the maintenance engineers let the Facilities Manager know they ready for collection.
4. The Facilities Manager arranges collection with a licensed waste contractor.
5. The coffin is collected and replaced by the contractor on request by the Facilities Manager.
6. On collection of the fluorescent tubes, the waste contractor must provide a consignment note with parts A to D completed, which is signed by a waste porter and Queen Mary appointed hazardous waste collection service contractor.

7. Queen Mary's hazardous waste collection service contractors must send quarterly hazardous waste returns to the Facilities Manager.
8. The consignment notes and hazardous waste quarterly returns must be kept for a minimum period of three years.

WEEE

1. All departments that generate WEEE are expected to contact the Estates and Facilities Helpdesk to arrange for its collection
2. The waste producer provides details of the location, type and quantity of WEEE
3. The porters arrange to collect the waste and transfer it to the WEEE waste store
4. The Facilities Manager arranges for the WEEE to be collected by a licensed waste contractor as and when required, providing details of the types and quantities
5. All WEEE disposed as hazardous must be accompanied with consignment notes from the waste management supplier.
6. Fully completed consignment notes must accompany the removal of all hazardous wastes.
7. Queen Mary's hazardous waste collection service contractors must send quarterly hazardous waste returns to the Facilities Manager.
8. The consignment notes and hazardous waste quarterly returns must be kept for a minimum period of three years.

The process flow chart below details how we manage hazardous waste streams:



Batteries

1. Battery boxes are located in various locations
2. Once the box is full, the bags within are collected on request by the porters and transported to the post room.
3. The battery bin is collected by the battery waste collection service contractor on request from the Facilities Manager.
4. Accompanying waste transfer notes are kept by the Facilities Manager for a minimum period of three years.

Hazardous Chemical Wastes

Hazardous chemical waste includes but is not limited to laboratory chemicals, solvents - stocks and dilutions, residues from reactions, prepared samples from teaching laboratories, concentrated acids and bases, pump and mineral oils etc.

Packaging

Proprietary chemicals should be retained in their original packaging, segregated into their appropriate hazard group (e.g., oxidising, corrosive, flammable etc.) and placed into secondary containment.

Solvent waste should be stored in a compatible robust, leak proof container (e.g., HDPE or Glass Winchester). If a recycled solvent container is to be used it is essential that it is thoroughly rinsed and all previous labelling must be removed before adding waste solvent.

Labelling

Waste containers must be labelled with the following information.

- Name: Who is depositing the waste (full name, not initials)
- Contact No: Office or lab ext. number
- Group/Location: Your group and lab number
- Date: Date of deposit into waste store
- Contents: Exact chemical name(s) – no acronyms
- pH: Where required
- Hazard properties: Indicate applicable symbol(s)

The Figures below show a sample of laboratory waste label

Name:
Contact No:
Group / Location:
Date:
Contents:
.....
pH:
Hazardous properties:

<input type="checkbox"/>

Unknown Items

It is not possible for both Health and Safety Directorate (HSD) and non-Health and Safety Directorate managed stores to accept unknown waste, as we are unable to transfer this to our

Hazardous Waste Contractor. The HSD must be contacted for further advice and guidance on the safe storage and disposal of any unknown chemical wastes.

It is the responsibility of laboratory users to ensure that all items are clearly classified and labelled.

Transport

All waste must be transported within campus boundaries in a suitably bunded trolley to contain leaks and prevent items falling. A suitable spill kit and PPE should be available during transport. Transport of waste is to be performed by two people so that in the event of an incident, assistance can be summoned and the area contained.

Hazardous chemical / solvent waste must not be transported on public roads in vehicles or by public transport. Hence, always arrange for a deposit within your campus boundaries.

Non-HSD Managed Chemical Wastes

There are departmental hazardous chemical and solvent waste stores that are directly managed by some Queen Mary's Schools / Institutes. In such cases, the local responsible person must ensure that:

- All waste is correctly labelled
- Segregated and stored according to hazard properties
- An inventory of waste within the store is maintained
- Waste is not held for more than 12 months
- Waste forms are correctly completed and collection arranged via HSD.

Clinical Waste

Clinical wastes generated across Queen Mary's three main UK Campuses are consigned by licenced hazardous waste collection service contractor. Currently these wastes are collected three times weekly from the designated clinical waste storage locations. There are:

- Four locations across the Mile End Campus
- Two locations across the Whitechapel Campus and
- Two locations across the Charterhouse Square Campus

The clinical waste collection service contractor appointed by Queen Mary delivers clinical waste receptacles to designated location across these three Campuses on a bi-monthly basis. This contract, whenever required delivers clinical waste consumable as well as carry out quarterly cleaning and disinfection of the United Nations (UN) approved clinical waste storage bins across

these three campuses. There is an annual contract review conducted by our Health and Safety Directorate (HSD) with PHS (Queen Mary's Clinical Waste Collection Service Contractor).

The processes below must be followed to ensure that clinical wastes are safely handled, appropriately segregated and correctly consigned:

1. Hazardous clinical waste must be correctly segregated and packaged in the appropriate coded/labelled yellow clinical waste bag / sharp bin according to the type of waste and appropriate waste disposal route (these are supplied by Queen Mary's current clinical waste collection service contractor).
2. Where the appropriate European Waste Codes (EWC) are not pre-printed on the bag / container, these must be correctly annotated.
3. Any incorrectly coded or labelled clinical waste receptacles must NOT be used to store clinical wastes (receptacles not supplied by Queen Mary's clinical waste collection service contractor).
4. To reduce manual handling risks to the staff of Queen Mary's appointed clinical waste collection service contractor, yellow clinical waste bags must NOT be filled with more than 5 kg (approx.) weight or not be more than three-quarter full.
5. Correctly packaged hazardous waste bags (tied with the designated coloured cable tie identifying the originating department) and sharp bins (tied with the appropriate coloured cable tie for identification) must be transported safely to the designated yellow clinical waste wheelie bin, awaiting uplift.
6. Designated UN approved clinical waste storage bins must be used to store all sharp containers. Sharp containers must not be placed with clinical waste bags or wrapped within yellow clinical waste bags or other bags.
7. All UN approved clinical waste storage bins must be kept locked and annotated (e.g. attach a laminated sheet with information onto the bin) with:
 - a. Queen Mary's clinical waste account number
 - b. Department / School / Institute name,
 - c. Local contact name and Queen Mary telephone number
 - d. These UN approved clinical waste bins must be appropriately labelled with infectious transport label attached (if no longer is available, the HSD's Clinical Waste Lead should be contacted for a label).
8. Any deficiencies to the service or defects to facilities (e.g., to bins) should be immediately noted to HSD Clinical Waste Lead.
9. Queen Mary's appointed clinical waste collection service contractor uplifts all correctly packaged and labelled hazardous clinical and clinical-related waste that are deposited in the UN approved clinical waste storage bins for treatment and disposal

10. Queen Mary appointed clinical waste collection service contractor supplies all consumables (yellow clinical waste bags, cable ties and various sized sharp bins) that are used to package hazardous clinical wastes across Queen Mary's UK campuses.
11. Consignment notes and quarterly hazardous waste returns are retained for a minimum period of three years by the designated Health and Safety Adviser / Manager.

High Efficiency Particle Absorption (HEPA) Filters

Air discharged from a Microbiological Safety Cabinet (MSC) to atmosphere passes through a High Efficiency Particle Absorption (HEPA) filter in order to remove contaminants. Other Local Exhaust Ventilation (LEV) equipment may also contain HEPA filters (e.g., fume cupboards used with nano-materials, clean rooms with clean air extraction systems, bench top glove boxes used for preparation of cytotoxic drugs).

Other filters than HEPAs from LEV systems (e.g., charcoal filters from re-circulating fume cupboards) that would also need to be treated as hazardous waste as they also would trap contaminants.

Depending on the nature of the contaminant, safe decontamination and final disposal procedures for HEPA filters must be in place to ensure the health and safety of the users, maintenance / cleaning staff, service engineers and waste disposal contractors.

Heads of laboratory groups or lab managers are responsible for ensuring all filters are disinfected or pre-treated to inactivate or seal any contaminants, removed safely, packaged for final disposal by the appropriate route.

Radioactive Wastes

Queen Mary's Health and Safety Directorate is responsible for coordinating and managing all radioactive wastes generated across its UK campus as well as ensure compliance with all relevant regulations and standards.

All radiation working areas in which sources of ionising radiation are used, are designated according to the potential health hazard of the work carried out in the area. Separate assessments are made in terms of external and internal hazards.

All records for the use of radioactive sources must be kept on the appropriate campus Queen Mary's ISOSTOCK computer management database. Paper records are not acceptable as a record.

All radiation workers and/or Radiation Protection Supervisor (RPS) must ensure that source delivery, holding stocks, usage, and disposal records are kept up to date. ISOSTOCK records must be correct by the day. Entries of all new stock should include the appropriate Project Approval Reference code at the requisition / authorisation stage. All stocks must be associated with a current member of Queen Mary staff.

Disposal of Radioactive Wastes

Radioactive materials waste is managed by utilisation of the ISOSTOCK software data system by departmental Radiation Protection supervisors (RPSs) and authorised lab users for radioactive materials receipt, use, accumulation and final disposal or decay, in line with the Environmental Agency permits and management documents for each campus and their project approvals for the work.

Accumulation and activity limits are identified in ISOSTOCK to warn RPSs, lab users and the Queen Mary Radiation Protection Officer (RPO) of approaching limits and to plan accordingly. Statutory Annual Pollution Inventories are submitted to the EA by the RPO and EA Inspections occur annually or bi-annually which include radioactive waste procedures and facilities. Internal radiation inspections are conducted annually by the appointed consultant Radiation Protection Adviser (RPA) / Radiation Waste Adviser (RWA).

Aqueous liquid waste is disposed via designated drains within the radiation laboratories. Zero activity decayed solid waste is then disposed into domestic waste, as long as no other hazardous property category exists. Solid waste with longer half-lives and organic liquid waste is accumulated within designated accumulation waste stores and then arranged for disposal within the Permit time limits, by high temperature incineration at the designated addresses in the Permit via an authorised radiation waste company with EA Permits, upper tier carrier status and Dangerous Goods Transport compliance accreditation.

The RPO utilises a licenced radioactive waste collection service contractor which results in incineration at the permitted facilities. Consignment Notes and Hazardous Waste Transfer Notes and final Destruction Certificates are retained by the RPS and RPO and ISOSTOCK updated accordingly.

Naturally, Radioactive Materials (NORM)Waste is accumulated and handled similar to above but with local records and flexible accumulation time periods. The legislation does allow for NORM disposals into domestic waste up to certain limits, but Queen Mary has chosen to use disposals via an authorised radiation waste company to avoid environmental harm and exposure.

Storage for accumulation and decay prior to disposal should only be in the designated campus radiation waste accumulation stores. The generation of solid waste is minimised by:

- Using the very minimum amount of radioactivity necessary for a given experiment.
- Storage of short-lived isotopes for (physical) decay, subject to EA authorisation.

Annual Returns

The RPO is responsible for ensuring that the required annual returns are made to the Environment Agency and other regulatory bodies, including the

- Annual Pollution return for Open Sources
- Return and updates of changes for other sources

The returns are required for the previous calendar year during the first month of the following calendar year. RPS(s) must ensure that all records are up to date at the end of each calendar year and the RPO promptly informed of any potential discrepancies in the records.

Contact the RPO for information about the safe storage and disposal of radioactive wastes. Further details are within the radiation local rules for each designated radiation area and in the HSD website [topic page](#).

Hazardous Waste Inventory

The table below summarises the commonly occurring hazardous wastes generated across Queen Mary's UK campuses.

Waste Stream	EWC Code	Waste Carrier	Registration Certificate	Expiry Date	Disposal Facility	Site License / Permit / Exemption
Chemical Wastes	180103 180109 (Cytotoxic)	PHS	CBDU289381	16.05.2022	PHS Wickford, Clinical Waste Transfer Station, Fulmer Way, Wickford, Essex, SS11 8ZB	LP3299NC/V002
Sharps Waste	180103 180104 (Human)	PHS	CBDU289381	16.05.2022	PHS Wickford, Clinical Waste Transfer Station, Fulmer Way, Wickford, Essex, SS11 8ZB	LP3299NC/V002
Sharps Waste	180103 180202 (Animal)	PHS	CBDU289381	16.05.2022	PHS Wickford, Clinical Waste Transfer Station, Fulmer Way, Wickford, Essex, SS11 8ZB	LP3299NC/V002

Waste Stream	EWC Code	Waste Carrier	Registration Certificate	Expiry Date	Disposal Facility	Site License / Permit / Exemption
Sharps Waste	180103 180108 (Cytotoxic)	PHS	CBDU289381	16.05.2022	PHS Wickford, Clinical Waste Transfer Station, Fulmer Way, Wickford, Essex, SS11 8ZB	LP3299NC/V002
WEEE Waste	200135	CDL	CBDU107046	01.06.2022	CDL House, Davy Road, Runcorn, WA7 1PZ	EPR/BB3505UA
Batteries	200133	European recycling company - Ecobat / G&P	CBDU74463	13.12.2021	Ecobat, WS10 8JR - sorted into the different chemistries for onward recycling to one of the companies	EPR/DB3704FG
Fluorescent Tubes	200121	Electrical Waste Recycling Group	CBDU166985	06.04.2023	Electrical Waste Recycling Group, School Lane, Huddersfield, HD5 0JS	WEE/ME0006ZT/A TF EPR/QP3034KA/V 003
Discarded equipment containing HCFC	160211	PHS	CBDU289381	16.05.2022	PHS Wickford, Clinical Waste Transfer Station, Fulmer Way, Wickford, Essex, SS11 8ZB	LP3299NC/V002
Soiled Nappy Waste from Queen Mary Nursery	180104	PHS	CBDU289381	16.05.2022	PHS Wickford, Clinical Waste Transfer Station, Fulmer Way, Wickford, Essex, SS11 8ZB	LP3299NC/V002
Radioactive wastes	200133*	Grundon Waste Management	CBDU147323	30/01/2023	Grundon (Waste) Limited, Hazardous Waste Incinerator, Lakeside Road, Colnbrook, Slough, SL3 0EG	Radioactive disposal permit: TB3439DM

Monitoring

Consignment notes checked to ensure that these legal documents contain:

- Full description of the hazardous waste
- Details of how the waste is packaged
- Quantity; place date and time of transfer
- Name and address of both parties
- Details of the permit (or exemption) of the person receiving the waste
- The EWC code for the waste
- The correct Standard Industrial Classification (SIC) code for the producer

- Statement confirming the waste hierarchy has been applied.

Documented Information

All documented information relating to the disposal of the waste streams covered by this process are held by the Facilities Manager, Estates and Facilities and the Health and Safety Directorate (for clinical, chemical and radioactive wastes).

Relevant documented information include:

1. Waste contractors and agreements
2. Copies of waste contractor licences
3. Consignment notes
4. Evidence of communications relating to the hazardous waste management process.

Waste Regulatory Compliance

The indicators that are used to monitor and report Queen Mary's compliance with relevant regulations are:

- Evidence that all premises from which clinical waste and hazardous waste are removed maintain a record of consignments notes. This record must be kept for a minimum of three years.
- Evidence that all hazardous waste storage receptacles meet the UN standards.
- Evidence that all wastes are safely stored within Queen Mary's premises.

Effects and Actions on Non-Conformance

Failure to comply with this procedure may result in:

- Non-conformance with the requirements of EcoCampus and the ISO 14001:2015 standard.
- Civil and / or criminal prosecution

Departure from this procedure is addressed in the **Non-Conformance, Corrective and Preventive Action Section** of our Environmental Management System.

Version Control

Date	Version	Lead	Due for Review
15 March 2021	1.0	Facilities Manager, Estates and Facilities	14 March 2022
1 April 2022	2.0	Facilities Manager, Estates and Facilities	31 March 2023

Conclusion and Recommendation

That the Sustainability Committee should:

- Consider this procedure
- Approve this procedure

Grounds Management Procedure

Lead:	Grounds and Gardens Supervisor
Reviewed by:	Bronwen Eastaugh, Environmental Associate
Approved by:	Sustainability Committee
Date Approved:	1 April 2022
Date due for Review:	31 March 2023
ISO14001(2015) Clause:	8.1

Purpose

This procedure details how grounds and gardens are managed across Queen Mary, University of London (Queen Mary) UK campuses in order to:

- Address the risks and opportunities associated with “Grounds and Garden Management”
- Minimise negative environmental impacts resulting from grounds and garden management activities
- Ensure that relevant environmental priorities are integrated into grounds and gardens management as well as the use and storage of pesticides and herbicides
- Ensure compliance with relevant environmental legislation
- Biodiversity enhancement and protection

Scope

This procedure covers all grounds management activities across Queen Mary UK campuses.

Definitions (ISO14001:2015)

- Risks and Opportunities: potential adverse effects (threats) and potential beneficial effects (opportunities).
- Process: Set of interrelated or interactive activities, which transforms inputs into outputs.

Responsibilities

Role / Position	Responsibilities
Assistant Director of Operations Estates and Facilities	Overall responsibility for overseeing grounds and gardens management and maintenance activities across Queen Mary Campuses
Head of Sustainability	Coordinates training and learning opportunities for all interested parties and relevant stakeholders on environmental compliance, as well as the risks and opportunities associated grounds and gardens management. Develop Queen Mary's Biodiversity Action Plan (BAP)
Sustainability and Environment Manager	Periodic audit of this procedure against relevant regulations and ISO 14001:2015 EMS clauses and ensure that corrective actions are put in place to address any non-conformance(s).
Grounds and Gardens Supervisor (Currently Vacant)	Responsible for overseeing all gardening and grounds maintenance work and the Grounds Management Team. Responsible for coordinating the implementation of Queen Mary's Biodiversity Action Plan with the Facilities Management and Sustainability Teams.
Grounds Management Team	Responsible for the maintenance of the grounds and gardens in line with Queen Mary's environmental sustainability objectives.
Queen Mary's Environmental Associates	Responsible for the review of this procedure in conjunction with all relevant stakeholders and interested parties.

Related Documents

This procedure is linked to:

- Queen Mary's Environmental Policy 2021
- Queen Mary's Environmental Sustainability Action Plan (2020-23)
- Queen Mary's EMS Emergency Spill Response Procedure 2022
- Queen Mary's Aspects and Impacts Register 2022

Process and Procedure

Grounds and garden management activities include:

- Maintenance of grassed areas including sports fields
- Maintenance of planted areas including flower beds, wildflower meadows, and woodland
- The clearing of litter and detritus

- Monitoring and maintenance of onsite roads and paths to ensure they are free of obstruction and are in good condition
- Use of pesticides to control weed and against infestation
- Manage and coordinate GreenMary Sensory and Medicinal Gardens and allotment at our Mile End Campus
- Promote the benefits of biodiversity and ecological conservation
- Identify and coordinate the implementation of initiatives that support biodiversity restoration (such as the Black Poplars)

Pesticides:

All pesticides are listed on Queen Mary's chemical inventory. All pesticides are stored within designated chemical cabinets. Material safety data sheets for all pesticides used are kept within these cabinets. All pesticides are used directly from their original containers.

The **Emergency Spill Response Procedure** detail procedures that must be followed after any spillage incident. All members of the Grounds and Gardens Management Team are aware of the risks associated with pesticides and can competently use these chemicals.

Waste:

All green wastes are composted on site and used across the green areas whenever required. Queen Mary hold a T23 - Aerobic composting and associated prior treatment waste exemption.

Grounds and garden wastes are disposed in accordance with Queen **Mary's Non-Hazardous Waste Management Procedure**.

Contractors:

Any grounds and garden activities carried out by a contractor are managed in accordance with Queen Mary's **Contractor Control and Management Procedure**.

Contractors appointed to carry out grounds and gardens management activities must use products approved by the Grounds and Gardens Supervisor. These Contractors are responsible for the removal of all unused products, empty containers and wastes. All contractors are required to provide method statements for all onsite activities, which includes the use, handling, storage and disposal of chemicals and pesticides. Whenever required, onsite pest control is carried out by an appointed contractor.

Biodiversity is promoted and protected by the following:

- The use of herbicides is minimised to small areas and paths across Queen Mary's campuses
- Physical removal of weeds is the preferred method across Queen Mary campuses
- All grounds and gardens activities must be carried out in such a way that these do not disturb any species protected by law
- The Grounds and Gardens Supervisor is Queen Mary's competent person responsible for advising contractors whose work may disturb animal species
- As part of our commitment to biodiversity restoration, we have continued to explore opportunities to increase the number of native Black Poplars across our UK campuses
- Mulching mowers are used for cutting grass
- Log piles are left in designated areas to promote biodiversity
- In-situ chipping of felled trees are used as mulch the grounds and gardens across Queen Mary UK campuses

Biodiversity Action Plan (BAP)

Queen Mary's Head of Sustainability is currently developing its Biodiversity Action Plan (BAP).

Records of any ecological assessments carried out across Queen Mary's UK campuses are stored by the Grounds and Gardens Supervisor and the Sustainability team.

Training records of the Ground Management Team are held by the Grounds and Gardens Supervisor. Relevant aspects of these records are used to update **Queen Mary's EMS Roles, Responsibilities and Training Schedule**.

Effects and Actions on Non-Conformance

Failure to comply with this procedure may result in:

- Non-conformance with the requirements of EcoCampus and the ISO 14001:2015 standard
- Civil and / or criminal prosecution

Departure from this procedure is addressed in the **Non-Conformance, Corrective and Preventive Action Section** of our Environmental Management System.

Version Control

Date	Version	Lead	Due for Review
15 March 2021	1.0	Grounds and Gardens Supervisor	14 March 2022
1 April 2022	2.0	Grounds and Gardens Supervisor	31 March 2023

Conclusion and Recommendation

That the Sustainability Committee should:

- Consider this procedure
- Approve this procedure



EMS Procedure: Emergency Preparedness, Emergency Spill Response and Emission to Air Procedures

Outcome requested:	That the Sustainability Committee should: <ul style="list-style-type: none"> • Consider these procedures • Approve these procedures
Executive Summary:	These three procedures have been updated based on current procedures and in line with relevant regulations and standards: <ul style="list-style-type: none"> • Emergency Preparedness and Response Procedure • Emergency Spill Response Procedure • Emission to Air Management Procedure
Alignment with: <ul style="list-style-type: none"> • QMUL Strategy • Internal Policies/Regulations • External Statutory Requirements 	<ul style="list-style-type: none"> • Queen Mary's Environmental Policy 2021 • 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:	<i>Not Applicable</i>
Confidentiality and Distribution:	<i>Non-restricted</i>
Equality Impact Assessment:	<i>Not Applicable</i>
Author(s) :	Peter Milewski, Crime Prevention Manager (Environmental Associate)
Date:	1 April 2022

Emergency Preparedness and Response Procedure

Lead:	Assistant Director Security and Business Continuity, Estates and Facilities
Reviewed by:	Peter Milewski, Environmental Associate
Approved by:	Sustainability Committee
Date Approved:	1 April 2022
Date due for Review:	31 March 2023
ISO 14001:2015 Clause:	8.2

Purpose

This procedure details how Queen Mary, University of London (Queen Mary):

- Identifies potential emergency situations that could have adverse environmental impacts.
- Plan and implement actions that could prevent and appropriately respond to accident and emergency situations.
- Periodically review and test emergency preparedness and response actions.
- Communicates relevant information and training regarding emergency preparedness and response to all relevant stakeholders and interested parties.

Scope

This procedure covers all environmental emergency situations that may occur across Queen Mary, University of London (Queen Mary) campuses.

Queen Mary “Incident Management” is used interchangeably with response to emergencies.

Definitions (ISO14001:2015)

- Environmental Impact: change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisation’s environmental aspects.
- Interested Party: person or organisation that can affect, be affected by, or perceive itself to be affected by decision or activity.

Responsibilities

Role / Position	Responsibilities
Estates and Facilities Directorate	The Senior Management Team (SMT) of the Estates and Facilities (EAF) Directorate or representative(s) are responsible for ensuring that emergency response processes are carried out as planned (in the event of emergency situations). The Management Review Committee review actions annually.
Assistant Director Security and Business Continuity, Estates and Facilities	Responsible for the strategic overview and delivery of Queen Mary's emergency preparedness and control procedure.
Head of Security and Emergency Planning	The Head of Security and Emergency Planning is responsible for: <ul style="list-style-type: none"> • Planning actions to prevent and respond to accident and emergency situations. • Periodically reviewing and testing emergency preparedness and response actions.
Head of Sustainability	The Head of Sustainability is responsible for reviewing planning actions to ensure that these appropriately prevent or mitigate environmental impacts associated with our operations. In addition, coordinates training and learning opportunities for all interested parties and relevant stakeholders on environmental compliance, risks and opportunities.
Sustainability and Environment Manager	Periodic audit of this procedure against relevant regulations and ISO 14001:2015 EMS clauses and ensure that corrective actions are put in place to address any non-conformance(s).
Relevant Managers and Departments	All Managers are responsible for identifying potential emergency situations, planning actions to prevent or mitigate environmental impacts and organising periodic testing of responses.
Queen Mary's Environmental Associates	Responsible for the review of this procedure in conjunction with all relevant stakeholders and interested parties.

Related Documents

This procedure is linked to:

- Queen Mary Environmental Policy 2021

- Queen Mary Environmental Sustainability Action Plan (2020-23)
- Queen Mary Incident Management Plan
- Queen Mary Environmental Management System (EMS) 2022
- Queen Mary Environmental Aspects and Impact Register 2022
- Queen Mary Environmental Incident Report Form 2022
- Queen Mary EMS Emergency Spill Response Procedure 2022
- Queen Mary EMS Discharges to Water Management Procedure 2022
- Queen Mary EMS Emissions to Air Management Procedure 2022

Procedure

The Head of Security and Emergency Planning in conjunction with the Head of Sustainability and all interested parties across Queen Mary would ensure that:

1. Relevant emergency situations within the **Environmental Aspect and Impact Register** are reviewed and revised annually to identify all potential accident and emergency scenarios
2. Relevant departments and interested parties contribute to developing appropriate emergency preparedness and response actions as well as ensure that all interested parties are aware of their roles and responsibilities in supporting the delivery of this procedure. This may include liaison with external agencies and contractors
3. Emergency preparedness and response actions are periodically reviewed, and if necessary revised, particularly after accidents and emergencies have occurred or following testing
4. An Incident Management Plan (IMP) is in place and provides guidance and direction on how to respond to emergency situations as well as 24-hour contact details of personnel, contractors, consultants, specialists and service providers with the responsibility for attending any environmental incidents. It also outlines responsibilities for all major incident scenarios. Incident covered within the IMP that include potential environmental risks and emergencies are:
 - a. Flood (Engineering and Estates Management, Estates and Facilities Directorate)
 - b. Fire (All Departments and Service Areas)
 - c. Pollution/spillage hazard (Security provides initial response; while the Health and Safety Directorate provide specialist guidance)
 - d. Loss of coolant (Engineering and Estates Management, Estates and Facilities Directorate)
 - e. Gas leak or other emissions to air (Engineering and Estates Management, Estates and Facilities Directorate)

- f. Power loss (Engineering and Estates Management, Estates and Facilities Directorate)
- g. Building damage (Engineering and Estates Management, Estates and Facilities Directorate)
- h. Asbestos exposure (Asbestos, Water Systems and Compliance Manager)

In the event of an environmental accident or emergency the Security Control Room (SCR) / Security Manager is contacted. The SCR / Security Manager co-ordinates all immediate response and escalates notification as required.

After an incident, the **Environmental Incident Report Form** (See Appendix 1) is used to document and record this incident. This form can also be accessed from the procedures and template section of the Sustainability website. Completed forms are sent to the Head of Sustainability via sustainability@qmul.ac.uk who liaise with relevant stakeholders or interested parties to investigate and agree appropriate measures that would avoid the occurrence of similar incidents in line with Queen Mary's environmental commitments.

Effects and Actions on Non-Conformance

Failure to comply with this procedure may result in:

- Non-conformance with the requirements the ISO 14001:2015 standard.
- Civil and / or criminal prosecution

Departure from this procedure is addressed within **Non-Conformance, Corrective and Preventive Action Section** of Queen Mary's Environmental Management System.

Version Control

Date	Version	Lead	Due for Review
7 May 2021	1.0	Assistant Director Security and Business Continuity, EAF	6 May 2022
1 April 2022	2.0	Assistant Director Security and Business Continuity, EAF	31 March 2023

Conclusion and Recommendation

That the Sustainability Committee should:

- Consider this procedure
- Approve this procedure

Emergency Spill Response Procedure

Leads:	Assistant Director, Engineering and Estates Management, EAF
Reviewed by:	Peter Milewski, Environmental Associate
Approved by:	Sustainability Committee
Date Approved:	1 April 2022
Date due for Review:	31 March 2023
ISO 14001:2015 Clause:	8.2

Purpose

The purpose of this procedure is to:

- Provide guidance to all staff on how to respond to a spillage of oils or chemicals
- Provide an overview of the responsibilities and practices relating to spill control and management
- Prevent or minimise the environmental impacts from pollution incidents
- Ensure compliance with relevant environmental legislation

Scope

This procedure covers all incidents associated with spills that occurs across Queen Mary, University of London (Queen Mary) UK campuses.

Definitions (ISO14001:2015)

- Environmental Impact: change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisation's environmental aspects.

Responsibilities

Role / Position	Responsibilities
Assistant Director, Engineering and Estates Management	The Assistant Director, Engineering and Estates Management is responsible for ensuring that emergency response processes are carried out as planned as well as in the event of emergencies
Head of Health and Safety, EAF	Responsible for identifying potential incidents, planning actions to prevent or mitigate environmental impacts and organising periodic testing of responses.

Role / Position	Responsibilities
Head of Sustainability	Responsibility for coordinating training and learning opportunities for all interested parties and relevant stakeholders on environmental compliance and risks associated with chemical and oil spillages.
Sustainability and Environment Manager	Responsible for the periodic audit of this procedure and associated activities against relevant regulations and ISO 14001:2015 EMS clauses and ensure that corrective actions are put in place to address any non-conformance(s).
Head of Catering Services	Responsible for ensuring correct and secure storage of oil and supervision of deliveries.
Faculty / Professional Department	Responsible for ensuring correct and secure storage of oil and chemicals and supervision of deliveries.
Security	Responsible for out-of-hours emergency response.
Trained / Designated Staff	All staff who receive spill training are responsible for dealing with spillages in a safe manner and for disposing of contaminated materials.
Health and Safety Directorate	Responsible for providing specialised health and safety advice and guidance on safe and appropriate storage of chemical as well as responses whenever spillage of chemicals occur. In addition, carry out the testing the operational effectiveness of a response to a spill incident.
Queen Mary's Environmental Associates	Responsible for the review of this procedure in conjunction with all relevant stakeholders and interested parties.

Related Documents

This procedure is linked to:

- Queen Mary's Environmental Policy 2021
- Queen Mary's Environmental Sustainability Action Plan (2020-23)
- Queen Mary's Environmental Management System (EMS) 2022
- Queen Mary's Environmental Aspects and Impact Register 2022
- Queen Mary's EMS Discharges to Water Management Procedure 2022
- Queen Mary's EMS Emergency Preparedness and Response Procedure 2022
- Queen Mary's Health and Safety Spills Management Guidance

Procedure

All incidents must be reported immediately to Operations and Maintenance Team of the Estates and Facilities Directorate via eaf-helpdesk@qmul.ac.uk or if out of normal working hours, the

Security Control Room should be informed via +44 (0)20 7882 3333. The Security Office are responsible for coordinating out-of-hour responses to such incidents.

No matter the situation:

SPILLAGE MUST NOT BE WASHED/HOSED DIRECTLY INTO SURFACE WATER DRAINAGE SYSTEMS

The 7 rule of thumb steps below should be followed in responding to routine spillages:

- Assess the risk
- Select personal protective equipment (PPE)
- Confine the spill
- Stop the source
- Evaluate the incident and implement clean-up
- Decontaminate the site / area
- Complete all required reporting forms

In addition to the above 7 steps; in the event of a hazardous substance or oil spill occurring externally, the following specific actions should be taken (only staff trained in spill response should conduct the following). Otherwise, specialised emergency responders must be contacted.

1. Determine the material involved and seek material data sheet if necessary; refer to Control of Substances Hazardous to Health (COSHH) register
2. Seek assistance dependant on level of spill
3. If there is danger to individuals, or you are unsure, evacuate the area and contact the Security Department, Health and Safety Directorate, Estates Operations and Maintenance Team, Head of Sustainability and Relevant Manager or the out of hours contact and give the following information:
 - a. Location of the spill
 - b. Name of substance spilt
 - c. Nature/source and volume of spillage
 - d. Any injury or suspected injuries
4. If there is no immediate danger, and the material is still leaking, or spilling collect the appropriate spill kit necessary to contain the spill
5. Take appropriate action to stop the flow (close valve, plug leak etc). Personal Protective Equipment (PPE) must be worn
6. To prevent the spill entering a surface water drain or sewer it may be necessary to either cover or bund the relevant access point before containing the spill

7. Contain the spill to prevent further spread using appropriate absorbing materials such as absorbent booms, socks or sand
8. If some material has entered the surface water drain or a watercourse, contact the Head of Sustainability and out of hours emergency contact
9. Absorb and collect the resultant material
10. Place all contaminated clean-up materials in a hazardous waste bag, available within the spill kit. This must be stored and disposed as hazardous waste
11. Record the incident using the environmental incident report form (see Appendix 1) and send this to the Head of Sustainability via sustainability@gmul.ac.uk
12. The Head of Sustainability carries out a review of the incident identifying any preventative actions that may be required
13. Re-stock the spill kit and re-order any materials that have been used up
14. This procedure is reviewed annually and either a desktop or a real-life simulation created to test its effectiveness by the Health and Safety Directorate.

Spill Procedure Summary

- Close off the source of the spill
- Collect spill kit
- Contain the spill
- Collect the spilled material using appropriate absorbent material
- Communicate with internal personnel as appropriate and clear the spill away
- Record and report the incident

After an incident, information is provided in the **Environmental Incident Report Form** (which can be downloaded from the Procedures and Template section of the Sustainability web site). Completed forms are sent to the Head of Sustainability via sustainability@gmul.ac.uk who is responsible for investigating and recommending appropriate action to prevent and mitigate the environmental impacts of similar incidents in the future.

Effects and Actions on Non Conformance

Failure to comply with this procedure may result in:

- Non-conformance with the requirements of ISO 14001:2015 standard.
- Civil and / or criminal prosecution

Departure from this procedure is addressed within the **Non-Conformance, Corrective and Preventive Action Procedure** section of Queen Mary's Environmental Management System

Version Control

Date	Version	Leads	Due for Review
7 May 2021	1.0	Assistant Director Operations, Estates and Facilities	6 May 2022
1 April 2022	2.0	Assistant Director, Engineering and Estates Management	31 March 2023

Conclusion and Recommendation

That the Sustainability Committee should:

- Consider this procedure
- Approve this procedure

Emissions to Air Management Procedure

Lead:	Assistant Director Engineering and Estates Management, EAF
Reviewed by:	Peter Milewski, Environmental Associate
Approved by:	Sustainability Committee
Date Approved:	1 April 2022
Date due for Review:	31 March 2023
ISO 14001:2015 Clause:	8.1

Purpose

This procedure details how emissions from air-conditioning/refrigeration equipment, boilers and fume cupboards are managed across Queen Mary, University of London (Queen Mary) UK campuses in order to:

- Address the risks associated with “Emissions to Air”
- Minimise emissions to air
- Minimise pollution risks by ensuring equipment are appropriately maintained
- Ensure compliance with relevant environmental legislation

Scope

This procedure covers all air-conditioning/refrigeration equipment, boilers and fume cupboards across Queen Mary UK campuses.

Definitions (ISO14001:2015)

- *Risks and Opportunities*: potential adverse effects (threats) and potential beneficial effects (opportunities).
- *Procedure*: Set of interrelated or interactive activities, which transforms inputs into outputs.

Responsibilities

Role / Position	Responsibilities
Assistant Director Engineering and Estates	Responsible for managing the air-conditioning and fire extinguisher maintenance contract and ensuring compliance

Role / Position	Responsibilities
Management, Estates and Facilities	with relevant F-Gas and environmental regulations. Custodian of the air-conditioning maintenance records.
Head of Sustainability	Coordinates training and learning opportunities for all interested parties and relevant stakeholders on environmental compliance and risks associated with air pollution.
Sustainability and Environment Manager	Responsible for the periodic audit of this procedure and associated activities against relevant regulations and ISO 14001:2015 EMS clauses and ensure that corrective actions are put in place to address any non-conformance(s).
Engineering and Estates Management Team, EAF	Collating, documenting and reporting all faults
Appointed Air Conditioning Contractor	Responsible for maintaining the equipment asset registers and ensuring contractor control. Conduct air-conditioning/refrigeration maintenance including leak testing. Conduct general equipment maintenance and repairs.
Senior Laboratory Technicians / Managers	Responsible for coordinating the maintenance and repairs of fume cupboards.
Queen Mary's Environmental Associates	Responsible for the review of this procedure in conjunction with all relevant stakeholders and interested parties.

Related Documents

This procedure is linked to:

- Queen Mary's Environmental Policy 2021
- Queen Mary's Environmental Sustainability Action Plan (2020-23)
- Queen Mary's Environmental Management System (EMS) 2022
- Queen Mary's Environmental Aspects and Impact Register 2022
- Queen Mary's EMS Emergency Preparedness and Response Procedure 2022

Procedure

Air-conditioning and refrigeration equipment:

1. Queen Mary uses equipment containing Fluorinated Greenhouse Gases (F-Gases) including air conditioning units, refrigeration units, and firefighting equipment
2. Queen Mary's appointed Air Conditioning Contractor is responsible for maintaining the air-conditioning and refrigeration equipment across Queen Mary UK campuses

3. An asset register which details all equipment containing F-Gases and the quantity of each type of gas is held by the Assistant Director of Operations, Estates and Facilities Directorate
4. All equipment is serviced and leak tested by Queen Mary's Air Conditioning contractor at frequencies dependent on the F-gas Regulations:
 - a. at least every 12 months for equipment containing between 5 and 50 tonnes of CO₂ equivalent
 - b. at least once every 24 months for equipment containing between 5 and 50 tonnes of CO₂ equivalent where a leakage detection system have been installed
 - c. at least every 6 months for equipment containing between 50 and 500 tonnes of CO₂ equivalent,
 - d. at least every 12 months for equipment containing between 50 and 500 tonnes of CO₂ equivalent where leak detection system have been installed
 - e. at least every 3 months for equipment containing over 500 tonnes of CO₂ equivalent
 - f. at least every 6 months for equipment containing over 500 tonnes of CO₂ equivalent where a leakage detection system is installed
5. Maintenance records including evidence of leak tests are stored by the Assistant Director Engineering and Estates Management (Estates and Facilities Directorate).
6. The appointed Air Conditioning Contractor is certified to handle fluorinated greenhouse gases and a copy of their REFCOM F-GAS certificate is held by the Assistant Director Engineering and Estates Management (Estates and Facilities) and stored in the Sustainability SharePoint Folder.
7. Only Engineers from the appointed Air Conditioning Contractor, with relevant qualifications are authorised to carry out work on equipment containing F-Gases:
 - a. City and Guilds F GAS and ODS Regulations Certificate
 - b. Construction Industry Training Board Refrigeration certificate
8. Contracts, maintenance and individual contractor training records are held by the Assistant Director Engineering and Estates Management, Estates and Facilities

Boilers:

1. Queen Mary has a register of all its boiler emission points.
2. Queen Mary does not have boilers over 20MW, or over 3MW that burn waste or waste oil, therefore is not required to have a Greenhouse Gas (GHG) emission Environmental Permit. However, all its boilers are maintained to prevent emissions of dark smoke and ensure compliance with the Clean Air Act 1993.
3. Queen Mary's appointed Boiler Maintenance Contractor is responsible for carrying out maintenance and emissions testing every six months

4. In case of emissions of dark smoke from its boilers, the Estates Operations team shut off such boiler(s) and notify the boiler maintenance contractor
5. Contracts, maintenance and training records are stored in the Record Management System (RMS) of the Estates and Facilities Directorate

Fume cupboards:

1. Queen Mary have a record of all its buildings with fume cupboard emission points
2. The Senior Laboratory Technicians or Managers for each department are responsible for ensuring that fume cupboards are serviced and maintained
3. All fume cupboards are scheduled to be tested by a competent Engineer at least every 14 months to ensure that they are performing as intended and to demonstrate that adequate control of exposure is achieved
4. Test reports are stored by the Senior Laboratory Technician or Manager and must be kept for a minimum period of 5 years
5. All Laboratory Technicians are trained in the use of fume cupboards.
6. Training records are stored by the Senior Laboratory Technicians or Managers.

Monitoring System

In order to ensure an adequate control system over continuous compliance with this procedure, Head of Sustainability will delegate annually to a specific and named staff member, a task of spot check verification of documentation covering air conditioning and refrigeration equipment (points 5-8), boilers (point 5) and fume cupboards (points 4-6). This will provide early warning surveillance in case of the procedural’s responsibilities not being demonstrated and will allow the corrective actions to be applied.

Effects and Actions on Non-Conformance

Failure to comply with this procedure may result in:

- Non-conformance with the requirements of 14001:2015 standard
- Civil and / or criminal prosecution

Departure from this procedure is addressed within the **Non-Conformance, Corrective and Preventive Action Section** of Queen Mary’s Environmental Management System

Version Control

Date	Version	Lead	Due for Review
7 May 2021	1.0	Assistant Director Operations, Estates and Facilities	6 May 2022
1 April 2022	2.0	Assistant Director, Engineering and Estates Management	31 March 2023

Conclusion and Recommendation

That the Sustainability Committee should:

- Consider this procedure
- Approve this procedure



Environmental Management System: Energy Monitoring and Management Procedure

Outcome requested:	That the Sustainability Committee should: <ul style="list-style-type: none"> • Consider this procedure • Approve this procedure
Executive Summary:	The energy monitoring and management procedure have been updated in line with relevant regulations and standards.
Alignment with: <ul style="list-style-type: none"> • QMUL Strategy • Internal Policies/Regulations • External Statutory Requirements 	<ul style="list-style-type: none"> • Queen Mary's Environmental Policy 2021 • 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:	<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:	1 April 2022

Energy Monitoring and Management Procedure

Lead:	Sustainability and Energy Manager
Reviewed by:	Head of Sustainability
Approved by:	Sustainability Committee
Date Approved:	1 April 2022
Date due for Review:	31 March 2023
ISO 14001:2015 Clause:	8.1

Purpose

This procedure details how Queen Mary, University of London (Queen Mary) manages energy used across its UK campuses as well as:

- Address the risks and opportunities associated with aspect 'energy consumption'
- Monitor energy consumption
- Minimise energy consumption
- Embed good energy management practices across all its premises
- Ensure compliance with relevant environmental legislation.

Scope

This procedure covers all electricity, gas and other fossil fuel used for heating across the premises of Queen Mary, University of London (Queen Mary).

Definitions (ISO14001:2015)

- *Risks and Opportunities*: potential adverse effects (threats) and potential beneficial effects (opportunities).
- *Process*: Set of interrelated or interactive activities, which transforms inputs into outputs.

Responsibilities

Role / Position	Responsibilities
Sustainability Committee	Responsible for ensuring that there are adequate resources to support the delivery of Queen Mary's carbon reduction and decarbonisation targets and objectives. Provide oversight of

Role / Position	Responsibilities
	Queen Mary's energy efficiency and carbon reduction performance
Assistant Director, Engineering and Estates Management	Responsible for aligning Queen Mary's carbon reduction and energy efficiency objectives into all Engineering and Estates Management functions and ensuring that TM44 Air conditioning inspections are carried out by an accredited air-conditioning inspector.
Head of Sustainability	Overall responsibility for overseeing energy management across Queen Mary and ensuring compliance with all relevant energy regulations. Responsible for developing Queen Mary's carbon management plan.
Assistant Director, Space and Workplace Transformation	Responsible for coordinating and submission of Queen Mary's annual Estate Management Record (EMR) to the Higher Education Statistics Agency (HESA)
Sustainability and Energy Manager	<ul style="list-style-type: none"> • Responsible for monitoring energy / carbon performance and collating data to generate DEC's and HESA reports. • Responsible for collating technical energy efficiency opportunities and risks across Queen Mary's portfolio. • Responsible for coordinating Queen Mary's energy audit programme as well as exploring non-technical approaches to reducing energy wastage.
Relevant Managers and Departments	Proactively encourage good energy practices across their Departments, Schools, Faculties and Service Areas.
Building Management System Contractor	Deliver energy efficiency via optimisation of Building Management System (BMS).

[Related Documents](#)

This procedure is linked to:

- [Queen Mary's Environmental Policy 2021](#)
- [Queen Mary's Environmental Sustainability Action Plan \(2020-23\)](#)
- [Queen Mary's Environmental Management System \(EMS\) 2022](#)
- [Queen Mary's Environmental Aspects and Impact Register 2022](#)

Procedure

Building Management System

1. Queen Mary's appointed BMS Contractor is responsible for controlling heating, ventilation air-conditioning systems (HVAC) and hot water controls via building management system.
2. The HVAC of most of Queen Mary's buildings can be controlled via the BMS; however, some of our buildings have complex control systems.
3. Majority of Queen Mary's buildings have manual controls, within individual rooms for air-conditioning, heating and lighting.
4. Some of Queen Mary's buildings are regulated automatically via the BMS, which controls the internal air temperature of either zones or individual rooms within the building according to seasonality, term times, temperature and occupancy.

Higher Education Statistics Agency (HESA) submissions:

1. The Sustainability and Energy Manager collates the annual electricity, fossil fuel (heating), water used, and business travel data across all Queen Mary's UK campuses. These data are part of Queen Mary's annual Estate Management Record (EMR) submissions.
2. The Sustainability and Energy Manager stores all email correspondence and HESA's reporting requirements in designated sub-folder. This evidence is available for assurance and audit purposes.
3. The Assistant Director – Space and Workplace Transformation (Estates and Facilities) is Queen Mary's primary contact for the HESA monitoring and reporting.

Energy Performance of Buildings (England and Wales):

1. The Sustainability and Energy Manager is responsible for ensuring that all qualifying Queen Mary's buildings (with a total useful floor area over 250m² after 9 July 2015) have valid Display Energy Certificates (DECs) and have the associated advisory reports.
2. The DECs and Advisory Reports are prepared by registered consultant, who conducts the annual review of each building during the process of generating these DECs.
3. The DECs are displayed at the entrance/reception area of each building and are publicly available via relevant section of Queen Mary's Sustainability web site.
4. Energy Performance Certificates (EPCs) of all recently acquired buildings are available via relevant section of Queen Mary's web site.
5. TM44 Air conditioning inspections are carried out, by an accredited air-conditioning inspector, in accordance with the Energy Performance of Buildings Regulations. These certificates are held by the Assistant Director of Engineering and Estates Management (Estates and Facilities Directorate).

Monitoring and reporting:

1. Majority of Queen Mary's buildings have smart electric meters for accurately monitoring electricity, gas and water consumption.
2. The Sustainability and Energy Manager validates energy bills against fiscal meter data and ensure that Climate Change Levy (CCL) is applied to non-residential buildings according to Climate Change Levy (General) Regulations SI 2001/838.
3. The Head of Sustainability present energy and carbon performance to the Sustainability Committee (SC) and the Finance and Investment Committee (FIC).
4. Scope 1 and 2 data are captured within Queen Mary's energy monitoring and management workbooks.

Carbon Management and Energy Efficiency Opportunities

1. Six-year 30% carbon reduction target against Queen Mary's 2018/19 baseline is one of the commitments with its Environmental Sustainability Action Plan (ESAP) 2020-23.
2. The Sustainability and Energy Manager and the Head of Sustainability in conjunction with all relevant stakeholders is responsible for identifying energy efficiency and carbon reduction opportunities and carrying out cost/benefit analysis to determine the feasibility of all identified energy efficiency and carbon reduction opportunities.
3. The Sustainability and Energy Manager is currently exploring opportunities to encourage all building users to adopt good energy efficiency opportunities.
4. The Head of Sustainability present reports to the Sustainability Community and the Finance and Investment Committee on Queen Mary's against its carbon reduction target.

Effects and Actions on Non-Conformance

Failure to comply with this procedure may result in:

- Non-conformance with the requirements the ISO 14001:2015 standard
- Budgetary pressure from increased energy consumption / wastage
- Civil and / or criminal prosecution

Departure from this procedure is addressed within **Non-Conformance, Corrective and Preventive Action Section** of Queen Mary's Environmental Management System.

Version Control

Date	Version	Lead	Due for Review:
7 May 2021	1.0	Head of Sustainability	6 May 2022
1 April 2022	2.0	Sustainability and Energy Manager	31 March 2023

Conclusion and Recommendation

That the Sustainability Committee should:

- Consider this procedure
- Approve this procedure



EMS Procedures: Construction, Refurbishment, Conversion and Fit-Out Procedure, Contractor Control and Management and Discharges to Water Management Procedure

Outcome requested:	That the Sustainability Committee should: <ul style="list-style-type: none"> • Consider these procedures • Approve these procedures
Executive Summary:	These three procedures have been updated based on current procedures and in line with relevant regulations and standards: <ul style="list-style-type: none"> • Construction, Refurbishment, Conversion and Fit-Out Procedure • Contractor Control and Management Procedure • Discharges to Water Management Procedure
Alignment with: <ul style="list-style-type: none"> • QMUL Strategy • Internal Policies/Regulations • External Statutory Requirements 	<ul style="list-style-type: none"> • Queen Mary's Environmental Policy 2021 • 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:	<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
Date:	1 April 2022

Construction, Refurbishment, Conversion and Fit-Out Procedure

Lead:	Assistant Director Capital Development, Estates and Facilities
Reviewed by:	Head of Sustainability
Approved by:	Sustainability Committee
Date Approved:	1 April 2022
Date due for Review:	31 March 2023
ISO14001(2015) Clause:	8.1

Purpose

This procedure details how construction, refurbishment, conversion and fit-out projects are managed across our UK campuses for the purpose of:

- Reducing the risks and optimise the opportunities associated with our construction, refurbishment, conversion and fit-out projects
- Minimising negative environmental impacts associated with our construction, refurbishment, conversion and fit-out projects
- Ensuring that appropriate consideration of environmental issues, including procurement of materials for construction, refurbishment, conversion and fit-out projects
- Ensuring compliance with relevant environmental legislation.

Scope

This procedure covers all construction, refurbishment, conversion and fit-out projects across our UK campuses.

Definitions (ISO14001:2015)

- *Risks and Opportunities:* potential adverse effects (threats) and potential beneficial effects (opportunities)
- *Procedure:* Set of interrelated or interactive activities, which transforms inputs into outputs.

Responsibilities

Role / Position	Responsibilities
Director of Estates and Facilities (EAF)	Strategic responsibility for all capital development projects.
Assistant Director Capital Projects EAF	Responsible for ensuring sustainability is considered during design, demolition and construction phases of all construction, refurbishment, conversion and fit-out projects.
Head of Sustainability	Responsible for coordinating embedding relevant environmental priorities into all aspects of construction, refurbishment, conversion and fit-out projects. Responsible for coordinating Queen Mary's Display Energy Certificates and compliance with relevant energy regulation. Act as a consultant on environmental sustainability considerations during the planning stages of construction, refurbishment, conversion and fit-out projects.
Sustainability and Environment Manager	Responsible for the periodic audit of this procedure and associated activities against relevant regulations and ISO 14001:2015 EMS clauses and ensure that corrective actions are put in place to address any non-conformance(s).
Sustainability and Energy Manager	Responsible for monitor the energy efficiency of new-builds, refurbishment, conversion and fit-out projects against expected energy performances.
BREEAM / SKA Assessor	Provides advice and guidance to the Capital Projects Team and conducts sustainability assessments.

Related Documents

This procedure is linked to:

- Queen Mary's Environmental Policy 2021
- Queen Mary's Environmental Sustainability Action Plan (2020-23)
- Queen Mary's Environmental Aspects and Impacts Register 2022

Process and Procedure

The Capital Projects Team (CPT) consider and explore the opportunities of embedding good environmental practices into the design, demolition and construction phases of all construction and refurbishment projects across Queen Mary. For each project the CPT are responsible for:

- Detailing project specifications
- Inviting tenders

- Agreeing contract terms
- Selecting contractors
- Checking any relevant environmental or other licences and permits for all construction and refurbishment projects
- Ensuring environmental considerations are included at the project design stage (including reuse of existing materials and purchase of sustainable goods and materials)
- Identifying legally protected animal species and advising on necessary actions
- Ensuring legal compliance during all phases of the project.

Sustainability Assessments and Design Specifications

The CPT determines and uses the most appropriate environmental sustainability assessment methodology for each project. The typical assessment methodologies considered are:

- Building Research Establishment Environmental Assessment Method (BREEAM) for New Construction / Build
- BREEAM Refurbishment for all major refurbishment / conversion projects
- RICS – SKA Rating for fit-outs and minor refurbishment and conversion projects.

In addition, the CPT determine key priority areas for each project in relation to energy and water consumption, waste management, pollution prevention and biodiversity preservation and enhancement. Environmental sustainability targets are set for each project, which take into account the assessment methodology and key priority areas identified.

Design briefs are developed for each project; these briefs details the expected outcomes for all capital project including the sustainability objectives.

Energy and Water

The CPT, in conjunction with the Head of Sustainability set minimum energy standards for each project. These standards covers the areas below:

- Insulation
- Ventilation efficiency
- Air flow
- Plant energy efficiency
- Equipment and appliances energy and water consumption
- Lighting – artificial and natural
- Heating
- Energy generation or CHP

- Water re-use or rain / grey water harvesting
- Building use
- Monitoring

Waste

The CPT, in conjunction with the Head of Sustainability include appropriate waste minimisation strategy into all capital projects. These strategies generally details how all waste generated throughout the demolition and construction stages are managed and to ensure that these are aligned with Queen Mary's reuse / recycling priorities.

Queen Mary expects all relevant contractors for major construction and refurbishment projects to have site waste management plans.

The CPT consider and where practicable explore the use of recycled materials.

Construction Materials

Generally, material selection will be based on the Green Guide to the specification of construction materials developed by the Building Research Establishment (BRE). The selection of these components are carried out between the CPT, design teams and the Head of Sustainability and on the basis of balancing the environmental impact, whole life cost, maintenance regime, viability, fire safety, thermal mass, durability, aesthetics and the expected outcomes associated with these projects.

Pollution Prevention

The CPT, in conjunction with the Head of Sustainability actively explore opportunities to reduce and mitigate pollution to the air, land and water including noise and dust during the demolition, construction and use of new buildings. Consideration are given to:

- Carbon emissions from equipment and machinery during the project
- Low emissions technology
- Dust minimisation
- Noise and vibration levels
- Water pollution
- Refrigeration (HCFC's)
- Emergency preparedness and response.

Biodiversity Preservation and Enhancement

The CPT, in conjunction with the Head of Sustainability explore opportunities to preserve or enhance biodiversity.

Below are some of the biodiversity issues considered:

- Using the existing footprints of buildings if practicable
- Avoiding the removal of trees, hedges or water courses where possible
- Planting native tree / plants species
- Building green spaces for biodiversity
- Including green or brown roofs where practicable
- Relocation or re-provision of species if removal cannot be avoided.

Contractor Control

Contractors are managed in accordance with the **Contractor Control and Management Procedure**. The CPT are responsible for ensuring that contractors operate in conformance with relevant environmental regulations and Queen Mary's environmental priorities.

Copies of method statements, operational control processes, emergency response procedures and incident reports are to be assessed for suitability by the CPT prior to work commencing. Where required the Head of Sustainability is consulted.

In the event of a non-conformance with the operational control processes or an incident, the CPT will work with the contractors to ensure that the non-compliances are addressed and any environmental harm addressed.

Monitoring and Reporting

Objectives, targets and relevant key performance indicators (KPIs) identified associated with each projects monitored by the CPT throughout each project. The performance against targets is reviewed by the CPT and reported into the Sustainability Committee (SC), Estates Strategy Board (ESB) and Senior Executive Team (SET).

Effects and Actions on Non-Conformance

Failure to comply with this procedure may result in:

- Non-conformance with the requirements of the ISO 14001:2015 standard
- Criminal and / or civil prosecution

Departure from this procedure is addressed in the **Non-Conformance, Corrective and Preventive Action Section** of our Environmental Management System.

Version Control

Date	Version	Lead	Due for Review
15 March 2021	1.0	Assistant Director Capital Development, EAF	14 March 2022
1 April 2022	2.0	Assistant Director Capital Development, EAF	31 March 2023

Conclusion and Recommendation

That the Sustainability Committee should:

- Consider this procedure
- Approve this procedure

Contractor Control and Management Procedure

Lead:	Assistant Director, Engineering and Estates Management EAF
Reviewed by:	Head of Sustainability
Approved by:	Sustainability Committee
Date Approved:	1 April 2022
Date due for Review:	31 March 2023
ISO 14001:2015 Clause:	8.1

Purpose

This procedure details how contractor management and control is implemented across Queen Mary, University of London (Queen Mary) UK campuses for the purpose of:

- Addressing the risks and opportunities associated with the environmental aspects related to contractor activities
- Ensuring contractors are aware of the environmental risks associated with their activities and how to control these risks
- Minimising negative environmental impacts resulting from contractor activities
- Ensuring compliance with relevant environmental legislation.

Scope

This procedure covers all activities carried out by Contractors across Queen Mary's UK campuses. This excludes any works undertaken using a F10 procedure (Notification of Construction Project). Construction projects require active oversight by the Capital Project Team with support by the Queen Mary's Sustainability Team, to ensure that the relevant procedures are suitable and sufficient.

Definitions (ISO14001:2015)

- *Risks and Opportunities*: potential adverse effects (threats) and potential beneficial effects (opportunities).
- *Procedure*: Set of interrelated or interactive activities, which transforms inputs into outputs.

Responsibilities

Role / Position	Responsibilities
Assistant Director, Engineering and Estates Management, Estates and Facilities	Overall responsibility for ensuring all activities of contractors (Estates and Facilities) are appropriately managed
Sustainability and Environment Manager	Responsible for the periodic audit of this procedure and associated activities against relevant regulations and ISO 14001:2015 EMS clauses and ensure that corrective actions are put in place to address any non-conformance(s).
Capital Projects Team	Responsible for co-ordinating contractors involved in construction, refurbishment, conversion and fit-out projects
Engineering and Estates Management Team	Responsible for co-ordinating engineering and maintenance contractors.
Facilities Manager	Responsible for co-ordinating grounds maintenance and facilities contractors.
<ul style="list-style-type: none">• Grounds Management Team• Engineering and Estates Management Team	Responsible for issuing permits to work and supervising contractors whilst on site.
Contractors	Responsible for operating in accordance with Queen Mary's procedures and relevant legislations.

Related Documents

This procedure is linked to:

- Queen Mary's Environmental Policy 2021
- Queen Mary's Environmental Sustainability Action Plan (2020-23)
- Queen Mary's Environmental Management System 2022
- Queen Mary's Environmental Aspects and Impact Register 2022
- Queen Mary's Environmental Incident Report Form 2022
- Queen Mary's EMS Emergency Preparedness and Response Procedure 2022
- Queen Mary's Permit to Work
- Queen Mary's EMAP 42

Procedure

Prior to commencing work on site, relevant manager reviews the following documents on Queen Mary's Risk Management System (RMS):

- Risk Assessments and Method Statements (RAMS)
- Qualifications or training records relevant to the work to be carried out
- Details of any hazardous substances to be used on site including material safety data sheets
- Details of the contractors' relevant environmental, permits and procedures (such as spill management and control procedures)

All contractors complete site induction (carried out online within the RMS system) once approved on the RMS, contractors then apply for a permit to work, before starting work at any Queen Mary's premises. These online site inductions are valid for a period of 12 months.

Site Induction

The site induction covers the health, safety and environmental risks associated with schedule works.

The Environmental section of these inductions include:

1. Environmental hazardous materials, substances or risks relevant to the activities scheduled to be completed within any Queen Mary's premises
2. The use and storage of chemicals on site
3. Waste disposal processes
4. Emergency procedure and plan, such as spill or leak
5. Incident reporting process
6. Queen Mary's emergency contacts

All Contractors that have previous received induction, but have not worked at the site that they are scheduled to carry out work within the last 12 months, must completed site e-induction. All induction records are stored electronically in the Risk Management System (RMS).

E-Permit

The permit to work system has been developed to ensure that health and safety of contractors whilst working on site. However, environmental considerations have been integrated into this system to ensure that contractors are aware of the risks to the environment and how to avoid the occurrence of these risks.

Relevant Manager Issues permit to work after reviewing the documentation provided by appointed contractors. Any environmental considerations or hazard associated with the work they are scheduled to carry are detailed in the RAMS.

Contractors must keep a copy of the permit with them at all time whilst on site.

Effects and Actions on Non-Conformance

Failure to comply with this procedure may result in:

- Non-conformance with the requirements the ISO 14001:2015 standard.
- Civil and / or criminal prosecution

Departure from this procedure is addressed within **Non-Conformance, Corrective and Preventive Action Section** of Queen Mary's Environmental Management System.

Version Control

Date	Version	Lead	Due for Review
7 May 2021	1.0	Assistant Director, Engineering and Estates Management	6 May 2022
1 April 2022	2.0	Assistant Director, Engineering and Estates Management	31 March 2023

Conclusion and Recommendation

That the Sustainability Committee should:

- Consider this procedure
- Approve this procedure

Discharges to Water Management Procedure

Leads:	Head of Health and Safety, Estates and Facilities
Reviewed by:	Head of Sustainability
Approved by:	Sustainability Committee
Date Approved:	7 May 2021
Date due for Review:	6 May 2022
ISO 14001:2015 Clause:	8.1

Purpose

This procedure details how discharges to water are managed across Queen Mary, University of London (Queen Mary) UK campuses in order to:

- Define actions, controls and responsibilities regarding discharges to surface water and effluent drains
- Appropriately identify the potential risks from discharges into surface water and effluent drains across Queen Mary campuses
- Minimise discharges into surface water
- Mitigate and control any discharges into surface water and effluent drains
- Ensure compliance with the Queen Mary's effluent discharge consent
- Ensure compliance with all relevant environmental regulations

Scope

This procedure covers all discharges to surface water and effluent drains across Queen Mary's UK Campuses.

This procedure covers any individuals or organisations carrying out activities across Queen Mary's campuses that may result in discharges into surface water and effluent drains.

This procedure forms part of Queen Mary's Environmental Management System (EMS).

Definitions (ISO14001:2015)

- *Risks and Opportunities*: potential adverse effects (threats) and potential beneficial effects (opportunities).

- *Procedure*: Set of interrelated or interactive activities, which transforms inputs into outputs.

Responsibilities

Role / Position	Responsibilities
Head of Health and Safety, EAF	Provide assurance that all drainage systems across Queen Mary's campuses are fit for purpose and custodian of information of the status of all surface water and effluent drains across Queen Mary's campuses.
Head of Sustainability	Responsibility for coordinating training and learning opportunities for all interested parties and relevant stakeholders on environmental compliance and risks associated with water pollution.
Sustainability and Environment Manager	Responsible for the periodic audit of this procedure and associated activities against relevant regulations and ISO 14001:2015 EMS clauses and ensure that corrective actions are put in place to address any non-conformance(s).
Estates Operations / Maintenance Team	Responsible for maintaining and conducting minor repairs to surface water and effluent drain systems across Queen Mary's campuses. Report all incidents and emergencies associated with discharges into surface water and effluent drains.
Health and Safety Directorate	Responsible for providing health and safety advice and guidance on the most appropriate ways to store, dispose and respond to emergencies associated with chemicals, all hazardous and polluting substances across Queen Mary's campuses
Senior Lab Technician / Managers	Responsible for ensuring compliance with Queen Mary's trade effluent discharge consents and permits, safely and appropriately store and dispose of all chemicals and hazardous wastes. Report all incidents and emergencies associated with discharges into surface water and effluent drains within their areas of responsibilities.

Related Documents

This procedure is linked to:

- Queen Mary's Environmental Policy 2021
- Queen Mary's Environmental Sustainability Action Plan (2020-23)
- Queen Mary's Environmental Aspects and Impacts Register 2022
- Queen Mary's EMS Emergency Spill Response Procedure 2022

- Queen Mary's EMS Emergency Preparedness and Response Procedure 2022
- Queen Mary's Health and Safety Spills Management Guidance

Procedure

This section details systems and procedures that must be complied with to prevent the discharge of harmful materials into surface drains across our campuses.

Drainage system:

1. The information about all surface water surface and effluent drainage systems across Queen Mary UK campuses are held by the Operations Managers, Estates and Facilities
2. The drainage system is maintained by the Operations and Maintenance team who conduct minor works / repairs as and when required
3. Prior to the commencement of construction works appropriate drainage surveys are conducted, in relevant areas, to determine the structural integrity of the drainage system. The outcome of these surveys are held by the Operations Managers, Estates and Facilities
4. The Operations Managers with the support of the Estates and Operations Team are responsible for managing all issues relating to the drainage system across Queen Mary's campuses

Waste Water and Trade Effluent:

The main types of wastewater generated across Queen Mary's campuses are:

- Normal wastewater from sinks, toilets, etc.
- Surface water runoff from rain falling on the ground and buildings (this is the reason why the management of spills is important)
- Trade effluent waste generated from certain operations, such as from educational research
- Laboratory wastes associated with publicly funded research and teaching.

Environmental Permit

Queen Mary has trade effluent permit and consent for its Mile End, Whitechapel and Charterhouse Square Campuses. These consents preclude Queen Mary or its agents from discharging anything other than rainwater into the surface water drains.

Queen Mary, also possess environmental permits for its Mile End, Whitechapel and Charterhouse Campuses concerned with the control of radioactive material and the receipt, transfer, accumulation and disposal of radioactive waste.

Vehicle washing is strictly prohibited across all Queen Mary's campuses.

What chemicals can be disposed of down the sink?

Aqueous chemical solutions can be disposed of via standard sinks provided that these:

- Chemicals are dilute and below relevant hazardous waste threshold level(s).
- They are not on the prescribed substances list of chemicals that should never be disposed via standard sink.
- They are not excluded on the permits / exemptions of the specific campus.

We are aware that some research laboratories generate small volumes (a few hundred millilitres) of relatively harmless chemical solutions that are not classified as hazardous following moderate dilution. As such, it is acceptable for solutions of small volumes (typically < 500 ml) of non-toxic water-soluble chemicals to be carefully washed down standard sinks with plenty of running water.

The assessment of what is a "small amount" relies on professional judgement; bearing in mind the concentration levels at which these substance(s) are toxic or otherwise harmful.

Larger quantities or highly concentrated chemical substances must not be disposed via any drain and the disposal of such substances must comply with Queen Mary's hazardous waste disposal procedures, guides, and chemical datasheet.

Examples of low hazard, water-soluble waste that can be disposed via standard sink include:

- Diluted acids, alkalis and alcohols
- Harmless inorganic salts (including drying agents such as CaCl_2 , MgSO_4 , Na_2SO_4 , P_2O_5)
- Alcohols containing salts (e.g., from destroying sodium)
- All disinfectant solutions used to inactivate Hazard Groups 1 and 2 biological agents
- Hypochlorite solutions (e.g., from destroying cyanides, phosphines)

If any individual is in doubt whether a solution can be disposed via standard sink; they should contact the designated Faculty Health and Safety Manager/Adviser.

What chemicals must not be disposed via standard sink?

No waste substances should be disposed via standard sinks that could ultimately harm:

- The environment
- The sewerage system

- The health and safety of the public or have the potential to interact with other substances to cause such effects

However, it is acceptable for waste solutions from experiments containing trace / low levels of hazardous organic or water-soluble chemicals to be disposed of via standard sinks but these must be flushed with plenty of water.

Examples of wastes that should never be discharged into surface water or effluent drain via standard sinks across our campuses:

- Persistent chemicals such as heavy metals and various organic compounds
- None-soluble organic liquids such as petroleum hydrocarbons and chlorinated compounds
- Compounds which produce toxic vapours, such as cyanide, ammonia, formaldehyde and glutaraldehyde
- Strongly acidic or alkaline wastes (pH < 6 or pH > 11)
- Highly reactive chemicals or flammable wastes
- Prescribed substances as per Trade Effluent Regulations 1989

Trade Effluent Regulations 1989 (Prescribed Substances) as seen in the table below:

Mercury and its compounds	Dieldrin	Simazine
Cadmium and its compounds	Endrin	Tributyltin compounds
γ -Hexachlorocyclohexane	Carbon Tetrachloride	Triphenyltin compounds
DDT	Polychlorinated Biphenyls	Trifluralin
Pentachlorophenol	Diclorvos	Fenitrothion
Hexachlorobenzene	1,2-Dichloroethane	Azinphos-methyl
Hexachlorobutadiene	Trichlorobenzene	Malathion
Aldrin	Atrazine	Endosulfan

Whenever in doubt about the status of any solution; contact your Faculty Health and Safety Manager/Adviser

Emergency response:

1. Relevant spill kits are available wherever hazardous or potentially hazardous substances are stored across Queen Mary's campuses
2. Queen Mary's Environmental Emergency Preparedness and Response Procedure contain further details regarding how to manage effluent, chemicals or oil spillages.

Review

This procedure will be reviewed at least once every year and it will be updated in the following circumstances (minimum):

- Following any significant incidents or adverse audit findings relating to discharges of water
- In the event of relevant changes to external or regulatory requirements
- When significant changes are made to the existing drains across Queen Mary's campuses

Effects and Actions on Non-Conformance

Failure to comply with this procedure may result in:

- Non-conformance with the requirements of ISO 14001:2015 standard.
- Civil and / or criminal prosecution as a result of spillage or accidental discharge of hazardous materials into surface water and effluent drains across Queen Mary campuses

Departure from this procedure is addressed within the **Non-Conformance, Corrective and Preventive Action Procedure** of Queen Mary's Environmental Management System

Version Control

Date	Version	Leads	Due for Review
7 May 2021	1.0	Head of Health and Safety, Estates and Facilities	6 May 2022
1 April 2022	2.0	Head of Health and Safety, Estates and Facilities	31 March 2023

Conclusion and Recommendation

That the Sustainability Committee should:

- Consider this procedure
- Approve this procedure



Environmental Management System Registers and Record

Outcome requested:	That the Sustainability Committee should: <ul style="list-style-type: none"> • Consider these registers and record • Approve these registers • Take assurance of the training record
Executive Summary:	<p>The registers below have been developed to support the implementation of our environmental management system (EMS):</p> <ul style="list-style-type: none"> • PESTLE Analysis Register • Log of Interested Parties • Environmental Scope and Context Register • Environmental Compliance Register • Environmental Aspects and Impacts Register • Environmental Objectives and Action Log • Environmental Competence and Training Requirements Register <p>We have continue to maintain a record of training sessions that we have delivered to embed our EMS as well as enhance environmental compliance across our University</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’s Environmental Policy 2021 • 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"> • <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
Date:	<i>1 April 2022</i>

Environmental Management System Registers and Record

Overview

The registers below have been developed to support the implementation of our environmental management system (EMS):

- PESTLE Analysis Register
- Log of Interested Parties
- Environmental Scope and Context Register
- Environmental Compliance Register
- Environmental Aspects and Impacts Register
- Environmental Objectives and Action Log
- Environmental Competence and Training Requirements Register

We have continue to maintain a record of training sessions delivered to embed our EMS as well as enhance environmental compliance across our University. EMS Registers & Records Folder for the above register and our updated training record.

Description of Registers

- PESTLE Analysis Register: This register captures all the current, Political, Economic, Social, Technological, Legal and Environmental issues associated with our operations, processes and activities. This register support our commitment to appropriately respond to current risks as well as optimise current and emerging environmental opportunities.
- Log of Interested Parties Register: This register captures our relevant stakeholders, interested parties, partners and regulators. This register ensures that our environmental engagement, communication and compliance strategies are fit for purpose to enable us achieve our environmental objectives.
- Environmental Scope and Context Register: This register captures all our activities and processes that may have positive or negative environmental impacts. This register underpins our environmental aspects register and environmental compliance registers. This register is also currently being used to gain insight into environmental risks and opportunities associated with our operations.

- Environmental Compliance Register: This register captures all our environmental compliance and regulatory responsibilities as well as our current systems and procedures to ensure that we comply with all relevant regulations, remits of our permits, exemptions and licences.
- Environmental Aspects and Impacts Register: This register is based on the assessment (significant and likelihood of occurrence) of all current significant areas in which we interact with the environment. This register is used to ensure that all our current EMS procedures are fit for purpose.
- Environmental Objectives and Action Log. This register summarises our current environmental objectives and key performance indicators (KPIs). These objectives are aligned with our environmental policy 2021 and environmental sustainability action plan (ESAP 2020-23).
- Environmental Competence and Training Requirements Register. This register captures all the relevant skills, knowledge and experiences required to ensure that we deliver all our environmental objectives, commitments and attain ISO 14001:2015 EMS certification by July 2022.
- Environmental Management Training Record March 2022. This record captures all training sessions that we have delivered to enhance the competence and knowledge of all those directly or indirectly involved in the delivery our environmental objectives and regulatory compliance. This record is also used to identify knowledge or skills gaps as well as to ensure that our environmental awareness and training programmes are fit for purpose.

Conclusion and Recommendations

That the Sustainability Committee should:

- Consider these updated registers
- Approve these updated registers
- Take assurance of our environmental management training record