University of Sussex

Aspects & Impacts Register

EcoCampus

Ranking*	Category	Aspect	Normal	Abnormal	Emergency	Impact Description	Impact Comment
High	Water & energy	Water consumption	7 (Neg)	7 (Neg)	7 (Neg)	Water resource depletion. Use of chlorine / ozone in treatment and potential risk of damage to human health and ecosystems.	Water consumption at UoS is the worst in the HE sector (Estates Management Statistics 2008/09). A recent leak detection survey carried out by Aquatech Engineering determined a significantly high baseload of consumption of 15,000 litres/hour out of hours (recorded at 3am) Consequently, a full water use survey has been commissioned (26/06/09)
High	Water & energy	Discharges to water	7 (Neg)	7 (Neg)	7 (Neg)	Negative impact on local environment (contamination/potential pollution of local fresh water courses and soil eco systems). Possible soil erosion leading to contamination/silting of fresh water stream/lake - threat to local stream/lake and wildlife therein/on including significant fishing amenity. Potential damage to eco systems/reduction in biodiversity. All have negative impact on quality of water supply, requiring cleaning and potential threat to human and animal health.	Discharges arising from foul sewer and surface water drainage are mapped across the campus. Surface water drainage is mostly to soakaway. Intention is to install Sustainable Urban Drainage schemes (SUDs) to new areas of hard landscaping e.g. New Academic Building (NAB).
High	Water & energy	Use of gas from National Supply	7 (Neg)	7 (Neg)	1 (N/A)	Production of CO_2 leading to climate change and global warming resulting in sea level rise, changing weather patterns, increased incidence of pest / diseases, damage to human health / quality of life and biodiversity. Depletion of finite gas and oil resources. Production of oxides of nitrogen leading to photochemical smog formation, resulting in damage to human health, damage to plants and reduction of biodiversity. Production of sulphur dioxide leading to damage to human respiratory health and formation of acid rain resulting in forest decline and lake acidification.	666,667 therms per annum gas use on campus - however, 1.2MW gas-fired CHP plant achieves a 37% CO_2 saving vis-à-vis national grid supplied electricity (20% electricity generation from CHP). Feasibility of a biomass-fired boiler to support energy generation is being considered.
High	Waste	Waste electrical & electronic equipment (WEEE)	7 (Neg)	7 (Neg)	7 (Neg)	Breaches of environmental legislation. Human environment, health and safety issues, potential for spillage into the surrounding environment leading to pollution to land or water. Inadequate storage/containment leading to increased risk of pollution to local and wider environment resulting in damage to bio-diversity. Aesthetics, nuisance. Contribution to global warming through landfill gas or incinerator emissions leading to production of CO_2 into atmosphere. Pollution through emissions/effluent to air, land or water from production process, production related energy usage which releases emissions and discharges to land, water or air causing pollution to the environment. Increased risk of damaging bio-diversity at a local and national level.	Production, storage and disposal of WEEE (e.g. : Computer Monitors, Fridges & Freezers, TVs, Paints, Adhesives, Fluorescent tubes, Chemicals, Oil, Fuel, Oily Rags, Batteries, Inks etc) is managed by Support Services Manager (except for waste white goods arising from student residences - managed by Residential Operations Manager).
High	Waste	Waste management and recycling	7 (Neg)	7 (Neg)	7 (Neg)	Reduced waste to landfill and correct disposal and storage of waste leading to Human and Environmental benefits in terms of reduced pollution and risk to health, reduced depletion of natural resources and reduced deforestation, erosion and loss of habitat. Significant benefit to UoS site in terms of rodent/pest control and minimisation of on-site waste storage. Reduced potential contamination and eco toxicity but negative contribution to global warming arises from emission of CO_2 and resource use from transport and recycling processes.	General waste disposal via Waste to Energy plant - UoS is increasing its recycling rates (c. 24% in 2008/09) and collects co-mingled recyclables for processing via its waste contractor Veolia. Waste disposal figures greatly improved as a result of pay-by-weight contract.
High	Waste	Use and disposal of hazardous materials	7 (Neg)	7 (Neg)	7 (Neg)	Impact of hazardous materials use (emissions, spillage and discharge) on aerial, terrestrial and aqautic environment and associated ecosystems, and impact on human health.	Significant aspect which is controlled by mutiple Statutory Instruments - however, operational practices need to be examined.
High	Transport	Provision of car parking on campus	7 (Neg)	7 (Neg)	7 (Neg)	Loss of habitat resulting in reduced localised species diversity. Loss of former amenity and sports area detracting from health facilities for staff and students. Contamination of groundwater with petrol, diesel, oil, salt and heavy metals such as lead and platinum. Possible entry of the above into drinking water supplies – damaging human health. Possible entry of above into freshwater and soil ecosystems leading to reduction in species diversity.	Emergency preparedness and response procedure needs developing for pollution incidents in car parks. As an interim, an Emergency Management Plan for environmental incidents has been produced. See Section 2.2.1.
High	Transport	Use of fossil fuel for transport, generating equipment and machinery etc.	7 (Neg)	7 (Neg)	7 (Neg)	Production of CO_2 leading to climate change and global warming resulting in sea level rise, changing weather patterns, increased incidence of pest / diseases, damage to human health / quality of life and biodiversity. Production of oxides of nitrogen leading to photochemical smog formation, resulting in damage to human health, damage to plants and reduction of biodiversity. Production of sulphur dioxide leading to damage to human respiratory health and formation of acid rain resulting in forest decline and lake acidification. Production of carbon monoxide and volatile organic carbons resulting in damage to human respiratory health. Production of PM10 and PM2.5 particulates resulting in damage to human respiratory health. Depletion of finite natural resources.	Out-of-town campus situation in AONB results in reliance of transport having an inevitable impact. To mitigate against this, UoS is increasing its fleet of on-campus electrically-powered vehicles.

High	Procurement	Purchase of non sustainable goods and services	7 (Neg)	7 (Neg)	7 (Neg)	Depletion of natural resources. Negative contribution to global warming through transport emissions and emissions during construction resulting from the release of CO^2 into atmosphere, increased waste generation, low cost may be indicative of poor quality and less attention to detail in meeting the required need, resulting in e.g. high repair costs – increased waste, frequent replacement – increased waste, Cheap raw materials or components could mean no attention has been paid to difficulty of waste disposal (e.g. Hazardous or WEEE waste thus increasing environmental risk) o In the case of Electrical and Electronic Equipment cheaper product may have higher energy consumption).	Impact is mitigated by EMS Manager and Head of Procurement are working closely to improve and promote sustainability in the UoS supply chain. Sustainable Procurement policy in place (see 1.2.1 - Baseline Environmental Review, Sustainable Procurement).
High	Procurement	Purchase of sustainable products and services	7 (Pos)	1 (N/A)	1 (N/A)	Minimum purchasing standards can be specified that have the effect of moving university away from negative environmental as listed above. Compliance and proactive approach to legislation, e.g. Hazardous waste, WEEE. Waste disposal charges, also planning laws, noise, pollution. Recommend positive purchasing policies that encourage positive effects on environmental and sustainability. Efficient use of funds means that university can focus on continuous improvement in Environmental and Sustainability issues. 'Rogue' purchasing can be quickly identified and risk of negative environmental impacts listed can be avoided.	EMS Manager and Head of Procurement are working closely to improve and promote sustainability in the UoS supply chain. Sustainable Procurement policy in place (see 1.2.1 - Baseline Environmental Review, Sustainable Procurement).
High	H&S	Smoking in public areas	7 (Neg)	1 (N/A)	1 (N/A)	Production of cancer causing airborne chemicals, litter production, air pollution for nearby students/staff	Robust Smoking at Work policy in accordance with the Smokefree (Premises & Enforcement) Regulations 2006 mitigates the impact of this aspect. (see 1.2.1 - Baseline Environmental Review, Health, Safety & Welfare).
High	H&S	Asbestos survey	7 (Neg)	7 (Neg)	7 (Neg)	Potential release of asbestos fibres into the atmosphere resulting in potential damage to human health. Potential waste disposal issues leading to global warming through landfill gas or incinerator emissions resulting from the release of CO_2 into atmosphere.	Presence of asbestos in buildings and pipework lagging, exposed during works. Management of asbestos has become a priority for the Health & Safety Department.
High	H&S	Noise pollution from equipment used on site, student activity etc	7 (Neg)	7 (Neg)	7 (Neg)	Generation of nuisance in the local environment including disturbance to neighbours and habitats.	Significant amount of construction and refurbishment taking place across campus will generate noise pollution - however, this is minimised under Planning Permission conditions of operational hours for construction and associated movements of construction traffic.
High	Emissions & discharges	Emissions (from heating flues), boilers for heating and hot water, oil run emergency generator. Also from fire protection equipment etc	7 (Neg)	7 (Neg)	7 (Neg)	Depletion of finite gas reserves. Gas boilers require high maintenance standards to prevent risk to human health. Production of CO_2 leading to climate change and global warming resulting in sea level rise, changing weather patterns, increased incidence of pest / diseases, damage to human health / quality of life and biodiversity. Depletion of finite oil resources. Production of oxides of nitrogen leading to photochemical smog formation, resulting in damage to human health, damage to plants and reduction of biodiversity. Production of sulphur dioxide leading to damage to human respiratory health and formation of acid rain resulting in forest decline and lake acidification. Production of PM10 and PM2.5 particulates resulting in damage to human respiratory health.	666,667 therms per annum gas use on campus - however, 1.2MW gas-fired CHP plant achieves a 37% CO_2 saving vis-à-vis national grid supplied electricity (20% electricity generation from CHP). Feasibility of a biomass-fired boiler to support energy generation is being considered.
High	Emissions & discharges	Emissions from fume cupboard and use of chemicals. Solvents (arts, photography, printing etc), use of some cleaning materials	7 (Neg)	7 (Neg)	7 (Neg)	Solvents and Chemicals: Various health problems can be caused if these substances enter the body, damage can also occur to the local ecosystems and food chains e.g. DDT	Fume cupboard operational practices need to be examined in conjunction with Heads of Schools and Director of Health & Safety
High	Emissions & discharges	Effluent disposal - (use of municipal water - bathrooms/cleaners, discharge of effluent to sewers)	7 (Neg)	7 (Neg)	7 (Neg)	Possible breaches of disposal agreements. Human health and safety issues, potential for spillage into the surrounding environment. Inadequate storage/containment leading to increased risk of pollution to local and wider environment. Contribution to global warming through landfill gas or incinerator emissions leading to production of CO_2 into atmosphere. Pollution through emissions/effluent to air, land or water from production process, production related energy usage which releases emissions and discharges to land, water or air causing pollution to the environment. Increased risk of damaging bio-diversity at a local and national level. Potential release of nitrates, phosphates and organic effluents to local watercourses, leading to fish death and reduced species diversity. Loss of water as a natural resource use of chlorine / ozone in treatment and potential risk of damage to human health and ecosystems. Aesthetics, nuisance.	Significant concerns regarding chemical disposal to drains from laboratories to be addressed by EMS Manager & Director of Health & Safety
High	Emissions & discharges	Surface water run-off to groundwater	7 (Neg)	7 (Neg)	7 (Neg)	Contamination of groundwater with petrol, diesel, oil, salt and heavy metals such as lead and platinum. Loss of groundwater as a resource. Possible entry of the above into drinking water supplies – damaging human health. Possible entry into freshwater and soil ecosystems leading to reduction in species diversity.	Emergency preparedness and response procedure needs developing for pollution incidents in car parks. As an interim, an Emergency Management Plan for environmental incidents has been produced. See Section 2.2.1.

High	Construction	Construction, refurbishment and maintenance of buildings	7 (Neg)	7 (Neg)	7 (Neg)	Depletion of natural resources. Contribution to global warming through transport emissions and emissions during construction resulting from the release of CO_2 into atmosphere. Release of contaminants into the atmosphere resulting in potential damage to human health and localised species. Depletion of natural resources such as timber, aggregates, metal products and water etc. Local atmospheric contamination from the use of hazardous substances such as solvents, lubricants and adhesives can lead to damage to human health. These requiring storage and duty of care in disposal - see waste sections above. Many impacts generated in upstream life-cycle. For example, solvent based paints are known to emit VOCs during use, thereby aggravating local air quality (through contributing to smog formation). There is scope to influence or control this aspect by specifying sustainable materials and adoption of BREEAM guidance etc.	Significant amount of construction and refurbishment work taking place across campus over the next 5 years (£100M+). BREEAM ratings to a minimum rating of Very Good being applied to all new build schemes (awaiting rollout of HE Standards - meanwhile, design is being developed to BREEAM Bespoke Standards. New Academic Building is intended to be BREEAM Outstanding subject to achievability tests. BREEAM In Use Standard also being looked at for significant refurbishment (i.e. Library Project).
High	Construction	Use of non sustainable construction materials	7 (Neg)	7 (Neg)	7 (Neg)	Depletion of natural resources. Negative contribution to global warming through transport emissions and emissions during construction resulting from the release of CO^2 into atmosphere, increased waste generation, low cost may be indicative of poor quality and less attention to detail in meeting the required need, resulting in e.g. high repair costs – increased waste, frequent replacement – increased waste, Cheap raw materials or components could mean no attention has been paid to difficulty of waste disposal (e.g. Hazardous or WEEE waste thus increasing environmental risk). In the case of Electrical and Electronic Equipment cheaper product may have higher energy consumption).	Impact should be reduced through achievement of BREEAM standards.
High (positive)	Transport	Travel reduction initiatives	7 (Pos)	1 (N/A)	1 (N/A)	Reduction of emissions of CO_2, SOx and NOx and a reduced impact on local air quality and human health, plants and biodiversity. Production of CO_2 leading to climate change and global warming resulting in sea level rise, changing weather patterns, increased incidence of pest / diseases, damage to human health / quality of life and biodiversity. Depletion of finite natural resources.	UoS has a detailed Travel Plan managed by the Transport Manager, with a significant number of incentives to reduce emissions arising from University-related transport activities, including promotion of public transport, dis-incentivising single-occupancy journeys to work through charging for parking, promoting car sharing, bike loan scheme, etc
Medium (Positive)	Community	Environmental awareness raising initiatives for the community	4 (Pos)	1 (N/A)	1 (N/A)	Increase in environmental awareness in the local community, support for environmental projects has a positive impact on local habitats and biodiversity.	EMS Manager works closely with Convenor of External Affairs to promote community engagement (see 1.2.1 - Baseline Environmental Review, Community Involvement).
Medium (Positive)	Biodiversity	Promotion and protection of biodiversity	4 (Pos)	1 (N/A)	1 (N/A)	Improved biodiversity protection for flora and fauna. Provision of green spaces leads to benefits for human and animal health and greater environmental awareness. Compliance with legislative requirements, policies and grounds management agreements (including none use of pesticides) leading to beneficial impacts on environment.	Assistant Director/Head of FM invests significantly in the protection and enhancement of biodiversity on campus in close consultation with the School of Life Sciences. Work includes meadowland creation, pond creation and maintenance, and creation of natural habitats, as well as conservation practices in conjunction with the Sussex Wildlife Trust.

Notes:
Impact ranking has been based on Loreus EcoCampus Significance Calculator*
1 - 3 Low significance
3 - 5 Medium significance
5 - 7 High significance