Report Title: DREAM (Defence Related Environmental Assessment Methodology)

DEAL (DREAM Evaluation and Assessment Log)

Project Name: New Bands Room

DREAM Project Number: 001

Purple Programme Number: D1234Y06)

Project Type: New Build
Building Type: Kitchen and Dining Facilities
Stage:Design
Report date: 01/06/2007 17:50:25

Assessment Status

Total Credits possible:	74
Credits achieved:	57
Current Rating:	EXCELLENT

DEFENCE ESTATES
Delivering Estate Solutions to Defence Needs

Design Stage

Biodiversity & Environmental Protection - Design

CREDIT STATUS

	Total Possible Credits:	**4**
	Credits acheived:	**1**
	Credits not acheived:	**3**

Credit Number	Question and Criteria	Assessor Notes	Credit Status
D-BI 1	**Site Ecology Strategy** **Aim:** To ensure compliance with statutory obligations to conserve biodiversity and encourage ecological enhancement of the site, and to minimise impacts on wildlife habitat. **Credit Criteria:** Credits are based on the predominant strategy as in: • Relocation = 1 • Conservation and Protection = 2 • Improvement = 3 **Relocation** involves the re-instatement of existing habitats off-site and is the minimum requirement, if it is impossible to mitigate in any other way. This must be carried out in liaison with a qualified ecologist who is also a Member of the Institute of Ecology and Environmental Management or an equivalent organisation. **Conservation or protection** undertaken at the design stage, requires that the building and any associated hardstand be positioned on the site to avoid existing habitats and hence minimise impacts. **Improvement** defines an improvement of the ecological value of the site; eg reintroducing appropriate indigenous vegetation, clearing intrusive vegetation (such as Japanese Knotweed) or linking isolated habitats, and should take account of habitats and ecosystem characteristics within the surrounding area. If the project may impact on a statutory designated site, or protected species, additional statutory assessment and mitigation requirements exist, and must be addressed. Specialist advice from the DE Environmental Support Team should be sought in these instances. **Credit Evidence:** The design team should provide the appropriate documentary evidence (eg photos of the existing site) and drawing information to demonstrate the selected strategy. The assessor should confer with the project ecological consultant (IEEM registered) to confirm credits achieved. **Further Guidance:** **MOD Guidance** • **MOD Sustainability and Environmental Appraisal Tools (SEAT) Handbook, See:** http://defenceintranet.diiweb.r.mil.uk/DefenceIntranet/Library/BrowseDocumentCategories/DefenceEstate/EstateStrategyAndManagement/ModSustainabilityAndEnvironmentalAppraisalToolHandbook.htm • **JSP 362 Defence Lands Handbook, Chapter 5 Natural Environment (Conservation). Available on the MOD website at:** http://www.defence.mod.uk/jsp362/362_ch05.pdf	Have awarded 1 default point for the green roof. Will discuss relocation of the trees and green space to award an additional point	1 / 3

	• **JSP 418 MOD Sustainable Development and Environment Manual, Leaflet 3, Conservation and Biodiversity. Available at:** http://www.defence-estates.mod.uk/publications/jsp/index.htm and http://www.defence.mod.uk/jsp400-700/jsp418/JSP418/Vol2/Leaf03.pdf • **JSP 434 MOD Defence Construction in the Built Environment, Biodiversity Section, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp434/index.htm • **For MoD Intranet users, See:** DE Business Management System/SupportingProcesses/2.7Sustainable Development/Natural Environment(Conservation). Available at: http://deintranet.de.r.mil.uk:151/2_support/2_7/2_7_3/2_7_3.htm • **DE Library Available at**: library@de.mod.uk • **DREAM Administration Manager Available at**: dream@de.mod.uk • **EST Defence Estates** ESTSustainability@de.mod.uk **Other Guidance** • **The Framework for Sustainable Development on the Government Estate, Part H, Biodiversity Targets** http://www.sustainable-development.gov.uk/delivery/integrating/estate/biodiversity-targets.htm • **The UK Biodiversity Action Plan is the UK Government's response to the Convention on Biological Diversity signed in 1992. It has detailed action plans for the protection of habitats and species.** http://www.ukbap.org.uk • **Institute of Ecology and Environmental Management, a professional body which represents and supports professionals in the fields of ecology and environmental management.** http://www.ieem.org.uk • ODPM Planning Policy Statement 9: Biodiversity and Geological Conservation, 2005. Available via: http://www.odpm.gov.uk/index.asp?id=1143832 • English Nature http://www.english-nature.org.uk • Scottish Natural Heritage http://www.snh.org.uk • Countryside Council for Wales http://www.ccw.gov.uk • Department of the Environment (NI) http://www.doeni.gov.uk • Department for Environment Food and Rural Affairs http://www.defra.gov.uk/ • IEEM http://www.ieem.org.uk		
D-BI 2	**Protection and Enhancement of the Historic Environment** **Aim:** To protect and enhance the historic environment and to ensure its sustainable future **Credit Criteria:** To award the credit, the assessor should ensure that the heritage integrity of the site is considered and where possible enhanced by the design of the construction. This includes: • Location and layout	The building has moved due to the presence of the listed building. DEEP process will de underataken as part of project	0 / 1

- Special features including proximity to a historic feature
- Sympathetic colour schemes and construction materials
- Stakeholder consultation
- Vernacular architecture, landscape and townscape
- The relevant heritage sections of the Design Excellence Evaluation Process (DEEP) have followed and taken into consideration.

Credit Evidence:

The project team should demostrate that the heritage of the site has been actively considered within the design phase of the project. They should provide evidence of consultations and how the various aspects as outlined above have been considered.

Further Guidance:

Historic Environment. The historic environment is an all encompassing term that includes; listed buildings; other historic buildings; scheduled monuments; field monuments; World Heritage Sites; Conservation Areas; Historic Battlefields'; Historic Parks and Garden; Historic Landscapes/townscapes or landscape features. The survey should also establish if any features are of heritage value to the MoD.

MoD Historic Environment Guidance

· **MOD Sustainability and Environmental Appraisal Tools Handbook._This is available via:**
http://defenceintranet.diiweb.r.mil.uk/DefenceIntranet/Library/BrowseDocumentCategories/DefenceEstate/EstateStrategyAndManagement/ModSustainabilityAndEnvironmentalAppraisalToolHandbook.htm

- **JSP 362 Defence Lands Handbook Ch.6 Historic Environment. Available on MoD website at:** http://www.defence.mod.uk/jsp362/362_ch06.pdf
- **Defence Estates Guide (DEG) Ch.24 Historic Environment.**
- **Estate Business Management System (EBMS) 2.7.4 Historic Estate.** Available after following Estate Policy & Standards>Sustainable Development>Historic Environment once opening link on the DE website at http://deintranet-ebms.de.r.mil.uk/qmap/index.htm
- **MOD Conservation Manual for the historic environment on the Defence Estate Design and Maintenance Guide 26.** Only available in hardcopy, for a copy contact Kam Jabbal Tel: 0121 311 3787.
- **JSP 418 MoD Sustainable Development and Environment Manual. Available at:** http://defenceintranet.diiweb.r.mil.uk/DefenceIntranet/Library/BrowseDocumentCategories/SafEnvFire/EnvironmentalManagement/Jsp418.htm
- **JSP 434 MoD Defence Construction in the Built Environment** Available from MoD Website : http://defenceintranet.diiweb.r.mil.uk/DefenceIntranet/Library/BrowseDocumentCategories/DefenceEstate/BuiltEstate/Jsp434DefenceConstructionInTheBuiltEnvironment.htm

Other Guidance

· MOD Sustainable Development contributions and Action Plan, which includes Historic Environment targets:
http://www.sustainable-development.gov.uk/government/department/mod.htm

- England: Planning Policy Guidance 15:Planning and the Historic Environment: See: www.odpm.gov.uk
- England: Planning Policy Guidance 16: Archaeology and Planning (PPG16) available from: www.odpm.gov.uk
- Wales:Planning Policy Wales. Chapter 6: Conserving the Historic Environment: available at: www.wales.gov.uk
- Scotland: National Policy Planning Guidance 18. PLANNING AND THE HISTORIC ENVIRONMENT (NPPG): available at:www.scotland.gov.uk
- Northern Ireland: Planning Policy Statement 6 (PPS6) Planning, Archaeology and the Built Heritage See: http://www.doeni.gov.uk/

External EQ - Design

CREDIT STATUS

	Total Possible Credits:	**6**
	Credits acheived:	**5**
	Credits not acheived:	**1**

Credit Number	Question and Criteria	Assessor Notes	Credit Status
D-EEQ 1	**Reducing Global Warming Potential** **Aim:** To reduce the amount of Global Warming substances potentially released to the atmosphere. Air-conditioning systems, if required, should avoid the use of substances with high GWP. **Credit Criteria:** It is MOD policy not to specify air conditioning for buildings. The only possible exception would be if it could be demonstrated through thermal modelling or engineering calculations that the space in question will exceed 30 °C for more than 2 .5% or for 8 or more days over the peak summer month. The assessor must be provided with proof that any specific design or operational requirement has followed the guidelines of “Design and Maintenance Guide 07 – Justifying the Provision of Air Conditioning”. Credit is awarded for either design compliance or the use of refrigerants that have a GWP value of less than four. Refrigerants which have a GWP less than four include: • Ammonia • Hydrocarbons (propane etc) **Credit Evidence:** The assessor should be provided with the appropriate calculations / modelling results demonstrating the air conditioning is not required, or, if appropriate, specifications stating the type of refrigerant as evidence. **Further Guidance:** **MOD Guidance** • **DE Design and Maintenance Guides 07, See:** http://www.defence-estates.mod.uk/publications/technical_bulletins/1996/tb_96-27.pdf • **MOD Sustainability and Environmental Appraisal Tools (SEAT) Handbook**, See: http://defenceintranet.diiweb.r.mil.uk/DefenceIntranet/Library/BrowseDocumentCategories/DefenceEstate/EstateStrategyAndManagement/ModSustainabilityAndEnvironmentalAppraisalToolHandbook.htm • **JSP 418 MOD Sustainable Development and Environment Manual.** Available at: http://www.defence-estates.mod.uk/publications/jsp/jsp418/index.htm • **JSP 434 MOD Defence Construction in the Built Environment, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp434/index.htm • **DE Library Available at:** library@de.mod.uk • **DREAM Administration Manager Available at:** dream@de.mod.uk • **EST Defence Estates** ESTSustainability@de.mod.uk • DCI GEN 198/01 Note: DCI's usually expire after 1 year. Further information can be obtained from: Ian Carr (DCIC - 3) 020 7218 3949 Email: ian.carr469@mod.uk Also: DG Information Centre Ground Floor Main Building London SW1A 2HB Tel 0207 218 4445 Fax: 0207 218 5413 The Information Centre is open 0900 - 1730 Monday to Friday **Other Guidance**	There will be some air conditioning. The refigerants will have a GWP of greater than 4	0 / 1

	• **CIBSE CFCs , HCFCs and halons: professional and practical guidance on substances which deplete the ozone layer** , 2000. Available via: www.cibse.org • **The Green Guide To Specification** , 3 rd Edition, 2002 ,Blackwell Science • **NGS** http://www.GreenSpec.co.uk		
D-EEQ 2	**NOx emissions of heating source** **Aim:** To reduce the nitrogen oxides emitted into the atmosphere. **Credit Criteria:** Up to four credits given as in: • <200mg/kWh output energy = 1 • <150 mg/kWh output energy = 2 • <100 mg/kWh output energy = 3 • <50 mg/kWh output energy = 4 Note: • These are dry NO_x emissions at 0% oxygen. • The boiler or calorifier NO_x emission rating that is the greatest should be selected for assessment. • No credits permitted for the use of electricity sourced from the National Grid for space heating. • Where district CHP or heating only is provided, the performance of the central plant should be considered. • Manufacturer's specifications should be used to determine mg/kWh. **Credit Evidence:** The design team should provide a copy of the specification stating the type of plant (make and model), and evidence of the maximum NOx emission rate from the manufacturer (eg correspondence, literature, specifications). **Further Guidance:** **MOD Guidance** • **For official Defence Publications, Information and Statistics,** See: http://www.mod.uk/DefenceInternet/DefenceFor/Researchers/ • **For JSP 434 Defence Construction in the Built Environment**, See: http://www.defence-estates.mod.uk/publications/jsp/jsp434/index.htm • **For JSP418 Sustainable Development and Environment Manual**, See: http://www.defence-estates.mod.uk/publications/jsp/jsp418/index.htm • **The Sustainability Appraisal Handbook *For the MoD Estate***, See: http://defenceintranet.diiweb.r.mil.uk/DefenceIntranet/Library/BrowseDocumentCategories/DefenceEstate/EstateStrategyAndManagement/ModSustainabilityAndEnvironmentalAppraisalToolHandbook.htm • **For DE Design and Maintenance Guide No.7,** See: http://www.defence-estates.mod.uk/publications/technical_bulletins/1996/tb_96-27.pdf • **DE Library Available** at: library@de.mod.uk • **DREAM Administration Manager Available at**: dream@de.mod.uk • **EST Defence Estates** ESTSustainability@de.mod.uk **Other Guidance** • **For advice on NOx emissions See:** http://www.environment-agency.gov.uk/yourenv/eff/1190084/air/1158715/1162725/?lang=_e • **BS EN 297:1994 Gas-fired central heating boilers** — Type B11 and 11BS boilers fitted with atmospheric burners of nominal heat input not exceeding 70 kW (including amendments) • **CIBSE Guide B1: Heating,** 2002. Available via: http://www.cibse.org	The gas boilers proposed for the Band facility are quoted as having a NOx emission rate of 29mg/kWh	4 / 4

D-EEQ 3	**Zero ODP and GWP <5 Insulants** **Aim:** To reduce the amount of ozone depleting substances and substances with global warming potential to the atmosphere. **Credit Criteria:** Some blown insulation products contain gases that are harmful to the ozone layer, such as chlorofluorocarbons (CFCs) or hydro chlorofluorocarbons (HCFCs), or have a global warming potential, such as hydrofluorocarbons (HFCs). The design team should specify insulants which have zero ODP and GWP less than five. This should include all insulation products applied to building services systems as well as the building fabric insulation. **Credit Evidence:** The design team should provide copies of the specification clauses stating all types of insulation to be used within the building, and evidence from the manufacturers (eg correspondence, literature, specifications) which confirms that the insulation is zero ODP and GWP less than five. Note: Where insulation is inherently zero ODP and GWP less than five (mineral wool, glass fibre), evidence from the manufacturers is not required. **Further Guidance:** **MOD Guidance** • For JSP 434 Defence Construction in the Built Environment, See: http://www.defence-estates.mod.uk/publications/jsp/jsp434/index.htm • For JSP418 Sustainable Development and Environment Manual, See: http://www.defence-estates.mod.uk/publications/jsp/jsp418/index.htm • The Sustainability Appraisal Handbook *For the MoD Estate*, See: http://defenceintranet.diiweb.r.mil.uk/DefenceIntranet/Library/BrowseDocumentCategories/DefenceEstate/EstateStrategyAndManagement/ModSustainabilityAndEnvironmentalAppraisalToolHandbook.htm • For DE Design and Maintenance Guide No.7, See: http://www.defence-estates.mod.uk/publications/technical_bulletins/1996/tb_96-27.pdf • **DE Library Available at:** library@de.mod.uk • **DREAM Administration Manager Available at:** dream@de.mod.uk • **EST Defence Estates** ESTSustainability@de.mod.uk **Other Guidance** • **The Green Guide To Specification, 3rd Edition,** 2002 ,Blackwell Science • **NGS** www.GreenSpec.co.uk • **For Zero ODP and GWP ,5 Insulants, See:** http://www.breeam.org.uk/pdf/EcoHomes2005Guidance_v1_1.pdf	The insulants used will be stonewool or similar and have low U value, and GWP< 5 in both manufacture and use	1 / 1

Energy - Design

CREDIT STATUS			
	Total Possible Credits:		**22**
	Credits acheived:		**17**
	Credits not acheived:		**5**
Credit Number	Question and Criteria	Assessor Notes	Credit Status
D-EN 1	**Building Regulations Enhancement Part L2A** **Aim:** To reduce CO_2 emissions to atmosphere **Credit Criteria:** To achieve this credit(s), the BER for the building must be calculated using either the ODPM SBEM tool published or by another ODPM approved software program, in line with requirements of the Approved Document Part L2. Credits will be awarded based on the improvement over the TER as calculated using the same software program. • No improvement = 0 • > 10% = 1 • > 15% = 2 • > 20% = 3 **Credit Evidence:** The design team should provide a copy of the calculations and results demonstrating improvement. **Further Guidance:** **MOD Guidance** • **For JSP 434 Defence Construction in the Built Environment, See**: http://www.defence-estates.mod.uk/publications/jsp/jsp434/index.htm • **For JSP418 Sustainable Development and Environment Manual, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp418/index.htm • **The Sustainability Appraisal Handbook *For the MoD Estate*, See:** http://defenceintranet.diiweb.r.mil.uk/DefenceIntranet/Library/BrowseDocumentCategories/DefenceEstate/EstateStrategyAndManagement/ModSustainabilityAndEnvironmentalAppraisalToolHandbook.htm • **For DE Design and Maintenance Guide No.7, See:** http://www.defence-estates.mod.uk/publications/technical_bulletins/1996/tb_96-27.pdf • **Energy Consumption Guide 75 Energy use in MOD Establishments** • **DE Library Available at**: library@de.mod.uk • **DREAM Administration Manager Available at:** dream@de.mod.uk • **EST Defence Estates** ESTSustainability@de.mod.uk **Other Guidance** • For online building regs, See: http://www.planningportal.gov.uk/england/professionals/en/1115314110382.html • **Part L - Buildings other than dwellings** Approved Document L2A: Conservation of fuel and power (New buildings other than dwellings) (2006 edition) Approved Document L2B: Conservation of fuel and power (Existing buildings other than dwellings) (2006 edition) • **EST** http://www.est.org.uk/housingbuildings/specifiers/ • **The Carbon Trust**http://www.thecarbontrust.co.uk/energy/pages/home.asp • BRE http://www.ncm.bre.co.uk	BER currently calculates at 25.07 kgCO2/m2/annum against a TER of 28.28 kgCO2/m2/annum.	1 / 3
D-EN 2	**Building Air Leakage Design**	There is an	3 / 3

	Aim: To reduce the thermal load associated with air infiltration. **Credit Criteria:** To award the credit, building envelope should be designed to reduce air leakage. Credits will only be awarded if an improvement is made on a base rate of air infiltration. Credits are determined as: • No improvement = 0 • < $9m^3/h/m^2$ = 1 credit • < $7m^3/h/m^2$ = 2 credits • < $5m^3/h/m^2$ = 3 credits **Credit Evidence:** The design team should provide a copy of the calculations and results demonstrating improvement. **Further Guidance:** **MOD Guidance** • **For JSP 434 Defence Construction in the Built Environment, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp434/index.htm • **For JSP418 Sustainable Development and Environment Manual, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp418/index.htm • **The Sustainability Appraisal Handbook *For the MoD Estate*, See:** http://defenceintranet.diiweb.r.mil.uk/DefenceIntranet/Library/BrowseDocumentCategories/DefenceEstate/EstateStrategyAndManagement/ModSustainabilityAndEnvironmentalAppraisalToolHandbook.htm • **For DE Design and Maintenance Guide No.7, See**: http://www.defence-estates.mod.uk/publications/technical_bulletins/1996/tb_96-27.pdf • **DE Library Available at:** library@de.mod.uk • **DREAM Administration Manager Available at**: dream@de.mod.uk • **EST Defence Estates** ESTSustainability@de.mod.uk **Other Guidance** • **For online building regs, See:** http://www.planningportal.gov.uk/england/professionals/en/1115314110382.html • **Part L - Buildings other than dwellings** Approved Document L2A: Conservation of fuel and power (New buildings other than dwellings) (2006 edition) • **CIBSE TM 23**. Available via http://www.cibse.org/ • **TN19: Guide to Air tightness Testing,** 2001, BSRIA • **S10: Air tightness Specifications,** 1998, BSRIA	objective of <6 agreed by the team	
D-EN 3 *	**Renewable Energy Feasibility Study** **Aim:** **To reduce CO_2 emissions to atmosphere and maximise sourcing of energy from renewable resources.** **Credit Criteria:** **To obtain the credit, the study should demonstrate a review of the economic and environmental whole life cost over a 25 year life period of opportunities to integrate renewable energy technology into the building. A calculation of CO2 savings shall be included in the report. Local Supplementary Planning Guidance on renewable energy must be followed. Appropriate technology to be considered is solar thermal, solar photovoltaic, wind, biomass/biogas and geothermal heat pump systems. Grant funding opportunities shall also be considered in the report.** **Credit Evidence:** **The assessor should be provided with a copy of the study, including findings and recommendations.**	**This was completed by Capita Symonds**	**1 / 1**

	Further Guidance: **MOD Guidance** • For Econ 75 Energy Use in MoD Establishments, See: http://www.defence-estates.mod.uk/publications/technical_bulletins/1999/tb_99-27.pdf • For official Defence Publications, Information and Statistics, See: http://www.mod.uk/DefenceInternet/DefenceFor/Researchers/ • For JSP 434 Defence Construction in the Built Environment, See: http://www.defence-estates.mod.uk/publications/jsp/jsp434/index.htm • For JSP418 Sustainable Development and Environment Manual, See: http://www.defence-estates.mod.uk/publications/jsp/jsp418/index.htm • The Sustainability Appraisal Handbook *For the MoD Estate*, See: http://defenceintranet.diiweb.r.mil.uk/DefenceIntranet/Library/BrowseDocumentCategories/DefenceEstate/EstateStrategyAndManagement/ModSustainabilityAndEnvironmentalAppraisalToolHandbook.htm • **DE Library Available at: library@de.mod.uk** • **DREAM Administration Manager Available at: dream@de.mod.uk** • **EST Defence Estates ESTSustainability@de.mod.uk** **Other Guidance** • **Part L - Buildings other than dwellings** **Approved Document L2A: Conservation of fuel and power (New buildings other than dwellings) (2006 edition)** Approved Document L2B: Conservation of fuel and power (Existing buildings other than dwellings) (2006 edition) • **GLA Integrating renewable energy into new developments: Toolkit for planners, developers and consultants, 2004. Available via: http://www.london.gov.uk/mayor/environment/energy/docs/renewables_toolkit.pdf** • **http://www.dti.gov.uk/renewables/**		
D-EN 4	**Renewable Energy** **Aim:** The aim is twofold: • To reduce the emissions of CO2 to atmosphere • To encourage the take up of renewable energy **Credit Criteria:** Where onsite renewable energy technologies, such as photovoltaics, solar collectors, wind turbines, geothermal systems etc, are incorporated into the project, credits can be awarded for providing the following percentages of the project's total energy consumption via renewable technologies: Credits are awarded as follows: • None = 0 credit • < 10% = 1 credit • Up to 20% = 2 credits • Up to 30% = 3 credits • Up to 40% = 4 credits • Up to 50% = 5 credits • Over 50% = 6 credits Alternatively, local renewable energy purchasing from a supplier where power is generated within 10 miles of the site will be eligible. "Green" electricity sourced from the grid is not eligible. Note: Geothermal systems utilise electricity to draw stored solar heat energy from the ground. This electricity should be provided from renewable sources generated within 10 miles of the site for this technology to be eligible for contributing to the overall % of renewable energy to the building.	The calculations provided by the team indicate that we will generate over 40% renewable requirement from the biomass boiler	5 / 6

	Credit Evidence: Evidence shall be provided of renewable energy technology integration within the building through provision of drawings, specifications etc. Calculations should be provided showing the estimated output of the system as a percentage of total building energy consumption. Where local renewable energy is purchased, a copy of a long term agreement or contract to purchase this renewable energy must also be provided to the assessor. **Further Guidance:** • MOD Sustainability and Environmental Appraisal Tools (SEAT) Handbook V3.1 - October 03 • DE Design & Maintenance Guide 17, 20 & 22 • Energy Consumption Guide 75 Energy use in MOD Establishments • http://deintranet.de.r.mil.uk:147/publications/de/de-index.htm • http://www.actionenergy.org.uk • http:// www.defra.gov.uk/environment/energy/chp/index.htm • http:// www.hmso.gov.uk/acts/act2003/20030030.htm		
D-EN 5	**Lighting Flexibility, Zoning and Control** **Aim:** To minimise energy use from artificial lighting. **Credit Criteria:** Credits are awarded as follows for implementing the following features in the lighting control strategy: • Zoned lighting – 1 credit • Occupancy and daylight linked lighting – 1 or 2 further credits **Zoned lighting – 1 credit** The project design should have appropriately zoned lighting to allow for varying occupancy levels and daylighting. The zoning should include the following, as a minimum: • Separate zoning and controls for office, café, lab, kitchens, circulation, meeting, lecture, conference and other space types. • Cafés and bars should be zoned to allow for 50% and 100% capacity. • Areas adjacent to windows and other glazed areas should be zoned separately to maximise use of daylight. **Occupancy and daylight linked lighting controls – 1 or 2 credits** Passive Infra-Red Occupancy linked control of lighting should be provided in WCs, circulation spaces, stores, and as appropriate in other areas. The design should also include a daylight linking strategy which has been applied to luminaires in all indoor offices, function and dining rooms where good daylight is available. The average daylight factor in these areas should be greater than 2.5% in accordance with the credit IEQ2. Lighting which is immediately adjacent to windows in office areas and meeting rooms should be zoned separately to allow for greater flexibility with daylight levels. Luminaires should have an automatic control to compensate for daylight and provide the correct level of illuminance. Closed loop dimming sensors should be considered for luminaries along glazed building perimeters. One credit is achieved where internal lighting is automatically switched on or off according to occupancy and/or availability of daylight. An additional credit can be achieved where internal lighting in		1 / 3

daylit areas (dining rooms, offices, meeting rooms etc) is automatically dimmed according to availability of daylight.

Credits cannot be achieved if the aims of credit IEQ2 are not met. The credit for zoned lighting must also be achieved.

It should be noted that Daylight-linked control is only suitable for areas where the average DLF available is >2.5 %.

Credit Evidence:
To award the credit for zoned lighting, the design team should provide specifications and schematics demonstrating lighting zones. For the occupancy and daylight linked control credits, the specification and schematic drawing evidence should be supplied to show the occupancy linked control strategy and dimming and daylight linked control strategy.

Further Guidance:

MOD Guidance

- **For JSP 434 Defence Construction in the Built Environment, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp434/index.htm
- **For JSP418 Sustainable Development and Environment Manual, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp418/index.htm
- **The Sustainability Appraisal Handbook *For the MoD Estate*, See:** http://defenceintranet.diiweb.r.mil.uk/DefenceIntranet/Library/BrowseDocumentCategories/DefenceEstate/EstateStrategyAndManagement/ModSustainabilityAndEnvironmentalAppraisalToolHandbook.htm
- **For DE Design and Maintenance Guide No.7, See**: http://www.defence-estates.mod.uk/publications/technical_bulletins/1996/tb_96-27.pdf
- **For JSP 315 Services Accommodation Code, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp315/volume1/index.htm
- **For Econ 75 Energy Use in MoD Establishments, See:** http://www.defence-estates.mod.uk/publications/technical_bulletins/1999/tb_99-27.pdf
- **DE Library Available at**: library@de.mod.uk
- **DREAM Administration Manager Available at**: dream@de.mod.uk
- **EST Defence Estates** ESTSustainability@de.mod.uk

Other Guidance

- **Part L - Buildings other than dwellings**
  Approved Document L2A: Conservation of fuel and power (New buildings other than dwellings) (2006 edition)
- **For Lighting of Workplaces, See:** http://www.standardsdirect.org/standards/standards5/StandardsCatalogue24_view_9368.html
- **CIBSE Code for Lighting, 2004** Available via: http://www.cibse.org
- **Lighting Guide 10; CIBSE 1999.** Available via: http://www.cibse.org
- **CIBSE, Lighting Guide LG7: 2005, Lighting for Offices Available via:** http://www.cibse.org

D-EN 6

Lighting Levels

Aim:

To minimise energy use in lighting and thus reduce CO_2 emissions.

Credit Criteria:
To ensure occupant comfort while minimising energy consumption in lighting, the following lighting levels (from CIBSE LG7) should not be exceeded:

Area	Maximum lighting level
Offices (screen based work)	300 lux

1 / 1

Offices (paper based work)	500 lux
Meeting/training rooms (normal use) Meeting/training rooms (intensive writing)	300 lux 500 lux
Libraries (general) Libraries (reading) Libraries (shelving)	300 lux 500 lux 200 lux vertical on bookcase right down to bottom shelf
Tea points	200 lux
Dining rooms (general) Dining rooms (serveries)	200 lux 300 lux
Kitchens	500 lux
Reception/entrance lobby	300 lux
Stairs/escalators	150 lux
Lift lobbies	200 lux
Corridors	100 lux at floor level
Toilets / showers	100 lux

Credit Evidence:

To gain the credit, specification and schematic drawing evidence should be supplied to show the lighting levels of all areas within the building.

Assessors should be aware of the obligations and duty of care for the health and safety implications placed on Designers by the Construction (Design and Management) Regulations 1994. These extend to include all risks which could reasonably apply to persons installing, maintaining or affected by, lighting installations.

Further Guidance:

MOD Guidance

- **For JSP 434 Defence Construction in the Built Environment, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp434/index.htm
- **For JSP418 Sustainable Development and Environment Manual, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp418/index.htm
- **The Sustainability Appraisal Handbook *For the MoD Estate*, See:** http://defenceintranet.diiweb.r.mil.uk/DefenceIntranet/Library/BrowseDocumentCategories/DefenceEstate/EstateStrategyAndManagement/ModSustainabilityAndEnvironmentalAppraisalToolHandbook.htm
- **For JSP 315 Services Accommodation Code, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp315/volume1/index.htm
- **For Econ 75 Energy Use in MoD Establishments, See**: http://www.defence-estates.mod.uk/publications/technical_bulletins/1999/tb_99-27.pdf
- **DE Library available at:** library@de.mod.uk
- **DREAM Administration Manager available at:** dream@de.mod.uk
- **EST Defence Estates** ESTSustainability@de.mod.uk

Other Guidance

- **For BS EN 12464-1:2002 Light and Lighting, See:** http://www.standardsdirect.org/standards/standards5/StandardsCatalogue24_view_9368.html
- **CIBSE Code for Lighting, 2004** Available via: http://www.cibse.org
- **CIBSE, Lightin Guide LG7: 2005r, Lighting for Officers, Available via:** http://www.cibse.org
- **Lighting Guide 10; CIBSE 1999, Available via:** http://www.cibse.org

D-EN 7	**Internal and External Luminaires** **Aim:** To maximise energy efficiency in lighting and reduce CO_2 emissions. **Credit Criteria:** To exceed standards laid down in Part L2 of Building Regulations. To award this credit, the project design should develop a lighting plan that includes appropriate lighting layout and method of controls (switches - including remotely controlled switches). The plan should include a luminaire schedule that shows the efficacy of each lamp and how that corresponds to the luminaires specified. An allowance is made for up to 1kW of low efficacy lighting (<70 lumens / circuit-watt) for display or entertainment purposes. **Credit Evidence:** The design team should provide a copy of the lighting plan. **Further Guidance:** **MOD Guidance** • **For JSP 315 Services Accommodation Code, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp315/volume1/index.htm • **For Econ 75 Energy Use in MoD Establishments, See**: http://www.defence-estates.mod.uk/publications/technical_bulletins/1999/tb_99-27.pdf • **For JSP 434 Defence Construction in the Built Environment, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp434/index.htm • **For JSP418 Sustainable Development and Environment Manual, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp418/index.htm • **The Sustainability Appraisal Handbook *For the MoD Estate*, See:** http://defenceintranet.diiweb.r.mil.uk/DefenceIntranet/Library/BrowseDocumentCategories/DefenceEstate/EstateStrategyAndManagement/ModSustainabilityAndEnvironmentalAppraisalToolHandbook.htm • **DE Library Available at:** library@de.mod.uk • **DREAM Administration Manager Available at**: dream@de.mod.uk • **EST Defence Estates** ESTSustainability@de.mod.uk **Other Guidance** • **For BS EN 12464-1:2002 Light and Lighting, See:** http://www.standardsdirect.org/standards/standards5/StandardsCatalogue24_view_9368.html • **CIBSE Code for Lighting,** 2004. Available at http://www.cibse.org • **CIBSE LG6 Outdoor Environment,** 1992. Available at http://www.cibse.org • **CIBSE LG7** Office Lighting, 2005. Available at http://www.cibse.org	These will be used where feasible	1 / 1
D-EN 8	**Carbon Rating of Heating Fuel** **Aim:** To reduce carbon emissions from space heating. **Credit Criteria:** This credit is awarded where the space heating load is met by energy sources other than National Grid generated electricity. An exception would be where a purchasing agreement has	This is served by biomass (renewable)	1 / 1

	been arranged with electricity suppliers to provide from renewable sources generated within 10 miles from the site, or where the electricity has been generated on site through a combined heat and power installation. Ground-source heat pump installations will also be eligible for this credit provided a COP (ratio of kW of heat delivered: kW of electrical power) of > 3 is achieved. This is based on the following statistics: • National Grid Electricity 0.115 kgC / kWh • Oil 0.072 kgC / kWh • Gas 0.053 kgC / kWh (Figures from ODPM Approved Document Part L2) "Green" electricity sourced from the grid is not eligible. **Credit Evidence:** The design team should demonstrate via drawings and/or specification clauses the type of fuel being used for space heating purposes. **Further Guidance:** **MOD Guidance** • **For JSP 434 Defence Construction in the Built Environment, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp434/index.htm • **For JSP418 Sustainable Development and Environment Manual, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp418/index.htm • **The Sustainability Appraisal Handbook *For the MoD Estate*, See:** http://defenceintranet.diiweb.r.mil.uk/DefenceIntranet/Library/BrowseDocumentCategories/DefenceEstate/EstateStrategyAndManagement/ModSustainabilityAndEnvironmentalAppraisalToolHandbook.htm • For Econ 75 Energy Use in MoD Establishments, See: http://www.defence-estates.mod.uk/publications/technical_bulletins/1999/tb_99-27.pdf • DE Library Available at: library@de.mod.uk **Other Guidance** • **For Renewable Energy and the Carbon Trust, See:** http://www.carbontrust.co.uk/default.ct • **Part L - Buildings other than dwellings** Approved Document L2A: Conservation of fuel and power (New buildings other than dwellings) (2006 edition)		
D-EN 9	**Boiler Efficiency** **Aim:** To ensure the specification of energy efficient heat generating plant and reduce CO_2 emissions. **Credit Criteria:** The credit is awarded where the operating efficiency of both the boilers and central hot water heating plant is > 85%. **Credit Evidence:** Specification clauses and/or equipment schedules confirming the types of boilers being installed, and supporting technical evidence from the manufacturers should be provided to confirm the efficiency. **Further Guidance:** **MOD Guidance** • **For official Defence Publications, Information and Statistics, See:** http://www.mod.uk/DefenceInternet/DefenceFor/Researchers/ • **For JSP 434 Defence Construction in the Built Environment, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp434/index.htm • **For JSP418 Sustainable Development and Environment Manual, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp418/index.htm • **The Sustainability Appraisal Handbook *For the MoD Estate*, See:**		1 / 1

	http://defenceintranet.diiweb.r.mil.uk/DefenceIntranet/Library/BrowseDocumentCategories/DefenceEstate/EstateStrategyAndManagement/ModSustainabilityAndEnvironmentalAppraisalToolHandbook.htm • **For DE Design and Maintenance Guide No.7, See**: http://www.defence-estates.mod.uk/publications/technical_bulletins/1996/tb_96-27.pdf • **DE Library Available at**: library@de.mod.uk • **DREAM Administration Manager Available at**: dream@de.mod.uk • **EST Defence Estates** ESTSustainability@de.mod.uk **Other Guidance** • **For Econ 75 Energy Use in MoD Establishments, See**: http://www.defence-estates.mod.uk/publications/technical_bulletins/1999/tb_99-27.pdf • **For Renewable Energy and the Carbon Trust, See**: http://www.carbontrust.co.uk/default.ct • **For CIBSE Guides, See**: http://www.cibse.org/index.cfm?go=home.show&PageID=372&TopSecID=4&L1=372		
D-EN 10	**Energy Metering** **Aim:** To facilitate energy management and saving initiatives, thus reducing CO_2 emissions. **Credit Criteria:** Metering should be provided to all main incoming supplies of gas and electricity. Sub-meters should be provided for floorplate and/or departmental monitoring. In addition, sub-metering to all major energy uses (eg lighting, small power, large appliances, catering/kitchens etc) within the building should be provided in compliance with Part L2 of Building Regulations. **Credit Evidence:** Type and location of meters should be indicated on drawings together with supporting evidence to demonstrate compatibility of data to BMS requirements. **Further Guidance:** **MOD Guidance** • **For JSP 434 Defence Construction in the Built Environment, See**: http://www.defence-estates.mod.uk/publications/jsp/jsp434/index.htm • **For JSP418 Sustainable Development and Environment Manual, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp418/index.htm • **The Sustainability Appraisal Handbook *For the MoD Estate*, See:** http://defenceintranet.diiweb.r.mil.uk/DefenceIntranet/Library/BrowseDocumentCategories/DefenceEstate/EstateStrategyAndManagement/ModSustainabilityAndEnvironmentalAppraisalToolHandbook.htm • **For DE Design and Maintenance Guide No.7, See**: http://www.defence-estates.mod.uk/publications/technical_bulletins/1996/tb_96-27.pdf • **For Econ 75 Energy Use in MoD Establishments, See**: http://www.defence-estates.mod.uk/publications/technical_bulletins/1999/tb_99-27.pdf • **For Renewable Energy and the Carbon Trust, See:** http://www.carbontrust.co.uk/default.ct • **DE Library Available at:** library@de.mod.uk • **DREAM Administration Manager Available at**: dream@de.mod.uk • **EST Defence Estates** ESTSustainability@de.mod.uk **Other Guidance** • **For CIBSE Guides, See:** http://www.cibse.org/index.cfm?go=home.show&PageID=372&TopSecID=4&L1=372 • **GIL 65 Metering energy use in new non-domestic buildings**, Available at: http://www.cibse.org/pdfs/GIL065.pdf • **ECG 19: Energy use in offices**, 2000. Available via: http://www.cibse.org/pdfs/ECG019.pdf	There will be a BMS present	1 / 1

D-EN 11	**Thermal Modelling** **Aim:** To optimize thermal comfort of occupants and reduce building heating and cooling loads. Data generated from the model should be used to inform the design team with reliable information regarding building performance and energy loads. **Credit Criteria:** A dynamic thermal modelling analysis should be undertaken, and the results of the analysis used to aid and inform the design team in the overall building design. A thermal modelling software package such as TAS (Thermal Analysis Software) or IES (Integrated Environmental Solutions), or other software that is compliant with the Guidance of CIBSE AM11, should be used. Thermal modelling using the ODPM's 'SBEM' software is not sufficient to meet this credit. Where analysis of environmental conditions shows likely discomfort of occupants, passive environmental control methods should be employed to moderate the internal environment. Comfort criteria are outlined in CIBSE Guide A. **Credit Evidence:** The results of the thermal modelling should be provided, along with evidence that the results of the thermal modelling exercise have informed the design strategy with regard to orientation and fenestration arrangements, the control of solar gains, ventilation, heating and cooling arrangements. **Further Guidance:** **MOD Guidance** • For JSP 434 Defence Construction in the Built Environment, See: http://www.defence-estates.mod.uk/publications/jsp/jsp434/index.htm • For JSP418 Sustainable Development and Environment Manual, See: http://www.defence-estates.mod.uk/publications/jsp/jsp418/index.htm • The Sustainability Appraisal Handbook *For the MoD Estate*, See: http://defenceintranet.diiweb.r.mil.uk/DefenceIntranet/Library/BrowseDocumentCategories/DefenceEstate/EstateStrategyAndManagement/ModSustainabilityAndEnvironmentalAppraisalToolHandbook.htm • For DE Design and Maintenance Guide No.7, See: http://www.defence-estates.mod.uk/publications/technical_bulletins/1996/tb_96-27.pdf • **For MoD Commercial Managers Toolkit, See:** http://www.ams.mod.uk/ams/content/docs/toolkit/index.htm • **DE Library Available at**: library@de.mod.uk • **DREAM Administration Manager Available at**: dream@de.mod.uk **Other Guidance** • **For CIBSE Guides, See:** http://www.cibse.org/index.cfm?go=home.show&PageID=372&TopSecID=4&L1=372 • **E mail:** library@de.mod.uk	This is currently being undertakn	1 / 1

Internal EQ - Design

CREDIT STATUS			
	Total Possible Credits:		**9**
	Credits acheived:		**7**
	Credits not acheived:		**2**
Credit Number	Question and Criteria	Assessor Notes	Credit Status
D-IEQ 1 ✻	**Environmental Comfort - Meet Standards** **Aim:** **To provide a comfortable and healthy work environment.** **Credit Criteria:** **Credit will be awarded if the internal and external design conditions used in the design calculations for heating and ventilation systems comply with guidance outlined in CIBSE Guide A.** **Credit Evidence:** **The design team should provide the internal and external design conditions for the heating and ventilation systems, and demonstrate that these comply with guidance outlined in CIBSE Guide A** **Further Guidance:** **MOD Guidance** • For Econ 75 Energy Use in MoD Establishments, See: http://www.defence-estates.mod.uk/publications/technical_bulletins/1999/tb_99-27.pdf • For JSP 434 Defence Construction in the Built Environment, See: http://www.defence-estates.mod.uk/publications/jsp/jsp434/index.htm • For JSP418 Sustainable Development and Environment Manual, See: http://www.defence-estates.mod.uk/publications/jsp/jsp418/index.htm • The Sustainability Appraisal Handbook *For the MoD Estate*, See: http://defenceintranet.diiweb.r.mil.uk/DefenceIntranet/Library/BrowseDocumentCategories/DefenceEstate/EstateStrategyAndManagement/ModSustainabilityAndEnvironmentalAppraisalToolHandbook.htm • For DE Design and Maintenance Guide No.7, See: http://www.defence-estates.mod.uk/publications/technical_bulletins/1996/tb_96-27.pdf • **DE Library Available at: library@de.mod.uk** • **DREAM Administration Manager Available at: dream@de.mod.uk** • **EST Defence Estates ESTSustainability@de.mod.uk** **Other Guidance** • For CIBSE Guides, See: http://www.cibse.org/index.cfm?go=home.show&PageID=372&TopSecID=4&L1=372 • For BCO Best Practice in Office Specs http://www.bco.org.uk/ • **Part L - Buildings other than dwellings** **Approved Document L2A: Conservation of fuel and power (New buildings other than dwellings) (2006 edition)**	**Modelling indicates that at some times of the year, the internal environment in some rooms will exceed 25 deg C. Currently there is no legislation that requires a cap on maximum temperatures, and there is no provision in the Brief to provide comfort cooling. However, there will be an allowance on the main plant to incorporate cooling at some future date. Environmental control is required by JSP315 in the instrument store only. Section 1.3 of CIBSE Guide A states: "The summer comfort temperatures given in Table 1.1 apply to air conditioned buildings. Higher temperatures may be acceptable if air conditioning is not present, e.g. if for sedentary areas such as offices an inside dry resultant temperature of 25°C is not exceeded for**	**1 / 1**

		more than 5% of the annual occupied period (typically 125 hours)" We would recommend that cooling is not applied until the users have had a chance to review the building performance through at least one summer.	
D-IEQ 2	**Daylighting** **Aim:** To reduce artificial lighting requirements and thus reduce CO_2 emissions. **Credit Criteria:** To achieve this credit, the daylight factor should be > 5% across 80% of the floor area of the building. This should be assessed at a height of 800mm. **Credit Evidence:** The design team should demonstrate compliance by providing calculations to show a daylight factor > 5% across 80% of the floor area of the building. **Further Guidance:** **MOD Guidance** • **For official Defence Publications, Information and Statistics, See:** http://www.mod.uk/DefenceInternet/DefenceFor/Researchers/ • **For JSP 434 Defence Construction in the Built Environment, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp434/index.htm • **For JSP418 Sustainable Development and Environment Manual, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp418/index.htm • **The Sustainability Appraisal Handbook *For the MoD Estate*, See**: http://defenceintranet.diiweb.r.mil.uk/DefenceIntranet/Library/BrowseDocumentCategories/DefenceEstate/EstateStrategyAndManagement/ModSustainabilityAndEnvironmentalAppraisalToolHandbook.htm • **For Econ 75 Energy Use in MoD Establishments, See:** http://www.defence-estates.mod.uk/publications/technical_bulletins/1999/tb_99-27.pdf • **DE Library Available at**: library@de.mod.uk • **DREAM Administration Manager Available at**: dream@de.mod.uk • **EST Defence Estates** ESTSustainability@de.mod.uk **Other Guidance** • **CIBSE Day lighting and Window Design; Lighting Guide 10**; 1999. Available via: http://www.cibse.org • **BS 8206-2:1992 Lighting for buildings, Code of practice for daylighting (AMD 7391),** 1992. • **CIBSE, Lighting Guide LG7**: 2005, Available via: http://www.cibse.org • **CIBSE Code for Lighting**, 2004. Available via: http://www.cibse.org • **For BS EN 12464-1:2002 Light and Lighting, See:** http://www.standardsdirect.org/standards/standards5/StandardsCatalogue24_view_9368.html		0 / 1

D-IEQ 3	**Safe Lighting Conditions** **Aim:** To promote a healthy indoor environment by reducing health and safety risks associated with low frequency lighting. High frequency lighting is also more energy efficient. Are high frequency electronic ballasts installed on all fluorescent luminaries? **Credit Criteria:** The design should include high frequency electronic ballasts which are installed to fluorescent luminaires in all working areas. In office areas, high frequency lighting impacts less upon visual health, whilst in food preparation areas, high frequency lighting poses less risk of stroboscopic effects when operating equipment. **Credit Evidence:** The design team should provide specifications and/or drawings to confirm that high frequency electronic ballasts are installed to fluorescent luminaires in all working areas. **Further Guidance:** **MOD Guidance** • **JSP315 Services Accommodation Code, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp315/volume1/index.htm • **For JSP 434 Defence Construction in the Built Environment, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp434/index.htm • **For JSP418 Sustainable Development and Environment Manual, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp418/index.htm • **The Sustainability Appraisal Handbook *For the MoD Estate*, See:** http://defenceintranet.diiweb.r.mil.uk/DefenceIntranet/Library/BrowseDocumentCategories/DefenceEstate/EstateStrategyAndManagement/ModSustainabilityAndEnvironmentalAppraisalToolHandbook.htm • **For DE Design and Maintenance Guide No.7, See:** http://www.defence-estates.mod.uk/publications/technical_bulletins/1996/tb_96-27.pdf • **For MoD Commercial Managers Toolkit, See:** http://www.ams.mod.uk/ams/content/docs/toolkit/index.htm • **DE Library Available at**: library@de.mod.uk • **DREAM Administration Manager Available at**: dream@de.mod.uk • **EST Defence Estates** ESTSustainability@de.mod.uk **Other Guidance** • **For Lighting of Workplaces, See:** http://www.standardsdirect.org/standards/standards5/StandardsCatalogue24_view_9368.html • **For CIBSE Guides, See:** http://www.cibse.org/index.cfm?go=home.show&PageID=372&TopSecID=4&L1=372		0 / 1
D-IEQ 4	**Thermal Zoning** **Aim:** To provide local control according to different load conditions and optimise staff comfort levels. The ability to provide out-of-hours local heating to spaces and separate zones independently of one another should also be provided to optimise energy usage **Credit Criteria:** The design team should provide appropriate local control, incorporating the following: • Local heating control to workspaces should be easy to understand with manual operation such that occupants have a satisfactory level of local control over their environment. An appropriate system would be TRV control		1 / 1

	of radiators. The control system should also include a manual override facility for out-of-hours use. • Space heating systems for large communal areas should have a simple, easy to use control system to provide manual override of heating program for out-of-hours use. **Credit Evidence:** For local heating control to workstations and space heating systems for large communal areas, the design team should provide evidence of the proposed method of control, including specification clauses and schematic drawings. **Further Guidance:** **MOD Guidance** • **For Econ 75 Energy Use in MoD Establishments, See:** http://www.defence-estates.mod.uk/publications/technical_bulletins/1999/tb_99-27.pdf • **For JSP 434 Defence Construction in the Built Environment, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp434/index.htm • **For JSP418 Sustainable Development and Environment Manual, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp418/index.htm • **The Sustainability Appraisal Handbook *For the MoD Estate*, See**: http://defenceintranet.diiweb.r.mil.uk/DefenceIntranet/Library/BrowseDocumentCategories/DefenceEstate/EstateStrategyAndManagement/ModSustainabilityAndEnvironmentalAppraisalToolHandbook.htm • **For DE Design and Maintenance Guide No.7, See**: http://www.defence-estates.mod.uk/publications/technical_bulletins/1996/tb_96-27.pdf • **DE Library Available at:** library@de.mod.uk • **DREAM Administration Manager Available at**: dream@de.mod.uk • **EST Defence Estates** ESTSustainability@de.mod.uk **Other Guidance** • **For CIBSE Guides, See:** http://www.cibse.org/index.cfm?go=home.show&PageID=372&TopSecID=4&L1=372 • **CIBSE Guide A: Environmental Design,** 1999. Available via: http://www.cibse.org • **CIBSE Guide - Heating, Air Conditioning and Refrigeration,** 2006. Available via: http://www.cibse.org • **BCO** Best practice in the specification for offices, 2005 . Available via:http://www.bco.org.uk/html/menu/menu.html		
D-IEQ 5	**Acoustic Design** **Aim:** To ensure a safe and comfortable working environment is maintained between food preparation, workplace, entertaining spaces and living accommodation. **Credit Criteria:** **I**nternal noise levels to unoccupied spaces should not exceed the following ambient noise levels, in accordance with BS8233:1999: • Dining / Function Rooms — 30-35 dBLAeqT • TV Rooms — 30-35 dBLAeqT • Snooker / Games Room — 35-45 dBLAeqT • Café areas — 45-50		1 / 1

	dBLAeqT
• Bars	45-50 dBLAeqT
• Circulation Areas	≤ 50 dBLAeqT
• Offices	30-35 dBLAeqT
• Living Accommodation	≤ 30 dBLAeqT

Noise levels should be assessed taking into account both internal (eg ventilation) and external (eg vehicles) sources of noise, with openable windows assumed open.

Credit Evidence:

The design team should provide calculations or a written statement from an acoustician to demonstrate that internal noise levels to unoccupied spaces do not exceed the criteria.

The design team should confirm that the internal layout of the building conforms to the requirements of DEO DMG 06 Officer's Messes, section 2.5.2.

Further Guidance:

MOD Guidance

- **For official Defence Publications, Information and Statistics, See:** http://www.mod.uk/DefenceInternet/DefenceFor/Researchers/
- **For JSP 434 Defence Construction in the Built Environment, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp434/index.htm
- **For JSP418 Sustainable Development and Environment Manual, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp418/index.htm
- **The Sustainability Appraisal Handbook *For the MoD Estate*, See:** http://defenceintranet.diiweb.r.mil.uk/DefenceIntranet/Library/BrowseDocumentCategories/DefenceEstate/EstateStrategyAndManagement/ModSustainabilityAndEnvironmentalAppraisalToolHandbook.htm
- **For DE Design and Maintenance Guide No.7, See**: http://www.defence-estates.mod.uk/publications/technical_bulletins/1996/tb_96-27.pdf
- **For MoD Commercial Managers Toolkit, See:** http://www.ams.mod.ukams/content/docs/toolkit/index.htm
- **DE Library Available at:** library@de.mod.uk
- **DREAM Administration Manager Available at**: dream@de.mod.uk
- **EST Defence Estates** ESTSustainability@de.mod.uk

Other Guidance

- **Resistance to the passage of sound (2003 edition) Part E** Approved Document E - Resistance to the passage of sound (2003 edition)
- **BCO** Best practice in the specification for offices, 2005 . Available via:http://www.bco.org.uk/html/menu/menu.html

D-IEQ 6	**External Views** **Aim:** To reduce eyestrain for building occupants by allowing long distance views and the provision of visual connection to the outdoors. **Credit Criteria:** All office workstations should have a view, either externally or to an adequately sized and naturally lit internal atrium. Office workstations should be no more than eight metres from glazing. **Credit Evidence:** The design team should provide furniture layout drawings which	Architects indicate that there will be external views from all workstations	1 / 1

	demonstrate that all office workstations within Kitchen and Dining Facilities have a view, and that these workstations are no more than eight metres from glazing. **Further Guidance:** **MOD Guidance** • **For JSP 434 Defence Construction in the Built Environment, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp434/index.htm • **For JSP418 Sustainable Development and Environment Manual, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp418/index.htm • **The Sustainability Appraisal Handbook *For the MoD Estate*, See:** http://defenceintranet.diiweb.r.mil.uk/DefenceIntranet/Library/BrowseDocumentCategories/DefenceEstate/EstateStrategyAndManagement/ModSustainabilityAndEnvironmentalAppraisalToolHandbook.htm • **For DE Design and Maintenance Guide No.7, See**: http://www.defence-estates.mod.uk/publications/technical_bulletins/1996/tb_96-27.pdf • **DE Library Available at**: library@de.mod.uk • **DREAM Administration Manager Available at**: dream@de.mod.uk • **EST Defence Estates** ESTSustainability@de.mod.uk **Other Guidance** • For BCO Best Practice in Office Specs http://www.bco.org.uk/ • **Glazing, See: Part N** Approved document N - Glazing (1998 edition)		
D-IEQ 7	**Internal Emissions** **Aim:** To prevent emissions of air pollutants and encourage healthy internal environments. **Credit Criteria:** The internal finishes should comply with the following: • 95% of all painted surfaces are low-VOC paints or no paint is used; • All floor and wall coverings are low-VOC or no coverings are installed; • All adhesives, sealants and preservatives are low-VOC or no adhesives or sealants or preservatives are used; and • All composite wood and joinery products are low emission formaldehyde or no composite wood or joinery products are used. **Credit Evidence:** The design team should provide specifications and/or drawings which confirm that the internal finishes comply with the criteria. **Further Guidance:** The internal finishes should comply with the following: • 95% of all painted surfaces are low-VOC paints or no paint is used; • All floor and wall coverings are low-VOC or no coverings are installed; **MOD Guidance** ○ **For JSP 434 Defence Construction in the Built Environment, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp434/index.htm ○ **For JSP418 Sustainable Development and Environment Manual, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp418/index.htm ○ **The Sustainability Appraisal Handbook *For the MoD Estate*, See:** http://defenceintranet.diiweb.r.mil.uk/DefenceIntranet/Library/BrowseDocumentCategories/DefenceEstate/EstateStrategyAndManagement/ModSustainabilityAndEnvironmentalAppraisalToolHandbook.htm ○ **For DE Design and Maintenance Guide No.7, See**: http://www.defence-estates.mod.uk/publications/technical_bulletins/1996/tb_96-27.pdf		1 / 1

- **DE Library Available at**: library@de.mod.uk
- **DREAM Administration Manager Available at**: dream@de.mod.uk
- **EST Defence Estates** ESTSustainability@de.mod.uk

Other Guidance

- **For The Green Guide to Specification, 3rd Edition, See:**

  http://books.google.co.uk/books?vid=ISBN0632059613&id=p2sIH3am3mUC&pg=RA3-PA8&lpg=RA3-PA8&ots=xV7rOBsz2M&dq=The+Green+Guide+to+Specification+3rd+edition&sig=aOb2_t1KviqYEm-hWCzc8DEbmn4

- **VOC Emissions from Building Products – Sources, Testing and Emission Data**, C Yu, D. Crump
- **VOC Emissions from Building Products – Control, evaluation and labelling schemes**, C Yu, D. Crump
- **For the Solvent and Emissions (England and Wales) Regs, See**

  http://www.opsi.gov.uk/si/si2004/20040107.htm

- http://www.netregs.gov.uk
- http://www.transstudio.com
- http://www.envirowise.gov.uk

- All adhesives, sealants and preservatives are low-VOC or no adhesives or sealants or preservatives are used; and
- All composite wood and joinery products are low emission formaldehyde or no composite wood or joinery products are used.

D-IEQ 8

Adaptation to Climate Change

Aim:

To ensure that MOD policy for addressing the issues of adaptation to climate change has been addressed and that the building will be fit for purpose during more frequent extreme weather events, including increasing storm severity, higher moisture content,

Credit Criteria:

Buildings can be designed for longevity under changing conditions by anticipating the likely impacts and matching the specification to the environmental pressures that will be experienced. Two credits can be awarded for designing 3 or more features which meet these aims.

Examples on adaptation issues and response requirements are provided in the following table.

Potential Impacts of Climate Change	Examples of Possible Adaptation Responses
Higher risk of flooding/erosion of existing buildings or susceptible developments in floodplains or coastal margins	Ensure planning and development takes account of future trends in flooding and coastal erosion. Consider range of options for flood and coastal management (with the Environment Agency where appropriate). Locate new developments away from areas of highest risk and instigating a range of flood-proofing measures, relocation or sustainable defence measures for existing properties
	Incorporate landscape features to absorb water within developments
Hotter drier summers could further increase pressure on water resources	Consider potential water supply/demand issues when siting new development
Emergency planning for increased risk of flooding and severe weather	Ensure emergency procedures and equipment are updated to meet increased risk

2 / 2

Increased risk of subsidence as soils shrink in hotter drier summers and increased risk of surface damage to hard standing areas	Plan for preventative and remedial maintenance of existing stock
	Ensure foundations are resilient
	Provide appropriate structural design for the building, and any associated hard standing /roads
Temperature increases affecting thermal comfort of living / working environment	Use thermal properties of materials to improve cooling and specify energy efficient systems
	Reduce solar heating using recessed windows, roof overhangs and shades
	Provide energy efficient heating and ventilation
Wetter winters causing damp, condensation and mould problems	Upgrade weatherproofing systems and manage internal environment
Increased rainfall intensity affecting civil engineering, embankments, etc. and washing earth / debris into gullies	Adapt specifications and increase monitoring and maintenance regimes for structures, and increase gully emptying activity
Climate change influence on natural environment	Plan for wildlife corridors to allow natural migration

Credit Evidence:
The project team should demonstrate via specifications, drawings or other appropriate evidence, the features which have been designed into the building that will enhance its resilience to climate change.

Further Guidance:

MOD Guidance

- **For official Defence Publications, Information and Statistics, See:**
  http://www.mod.uk/DefenceInternet/DefenceFor/Researchers/
- **For JSP 434 Defence Construction in the Built Environment, See:**
  http://www.defence-estates.mod.uk/publications/jsp/jsp434/index.htm
- **For JSP418 Sustainable Development and Environment Manual, See:**
  http://www.defence-estates.mod.uk/publications/jsp/jsp418/index.htm
- **The Sustainability Appraisal Handbook *For the MoD Estate*, See**:
  http://defenceintranet.diiweb.r.mil.uk/DefenceIntranet/Library/BrowseDocumentCategories/DefenceEstate/EstateStrategyAndManagement/ModSustainabilityAndEnvironmentalAppraisalToolHandbook.htm
- **For The Defence Estates Strategy (2006), See:**
  http://www.defence-estates.mod.uk/publications/corporate/The_Defence_Estate_Strategy_guide.pdf
- **DE Library Available at**: library@de.mod.uk
- **DREAM Administration Manager Available at**: dream@de.mod.uk
- **EST Defence Estates** ESTSustainability@de.mod.uk

Other Guidance

- **For online building regs, See:**
  http://www.planningportal.gov.uk/england/professionals/en/1115314110382.html
- **For The Met Office and Climate Change, See:**
  http://www.metoffice.gov.uk/
- **CIBSE Climate change and the indoor environment: impacts and adaptation**, 2005. Available via:
  http://www.cibse.org
- **UKCIP http://www.ukcip.org.uk**
- **CIRIA http://www.ciria.org.uk/**

Procurement - Design

CREDIT STATUS

	Total Possible Credits:	**20**
	Credits acheived:	**14**
	Credits not acheived:	**6**

Credit Number	Question and Criteria	Assessor Notes	Credit Status
D-PR 1	**Innovation in Sustainable Construction** **Aim:** To provide design teams and projects the opportunity to be awarded points for exceptional performance above the requirements set by DREAM. **Credit Criteria:** There are 3 credits available, awarded for up to three separate instances, where the performance of the project significantly exceeds the requirements of DREAM. For example, this could be an advanced energy or water saving measure or a detailed life cycle analysis of components. **Credit Evidence:** For each credit the design team should propose in writing; • The aim of the innovation and the proposed requirement for achieving the credit. • The design approach for achieving this credit should be submitted through written or drawn information. The assessor should use discretion in awarding the credit by firstly viewing the aim of the innovation to discern that it significantly exceeds DREAM requirements. Secondly, the assessor should be satisfied that these objectives have been achieved. **Further Guidance:** **MOD Guidance** • **JSP 507 MOD Guide to Investment Appraisal & Evaluation** • **For JSP 434 Defence Construction in the Built Environment, See:** • **For JSP418 Sustainable Development and Environment Manual, See:** • **The Sustainability Appraisal Handbook *For the MoD Estate*, See:** • **For DE Design and Maintenance Guide No.7, See**: • **For MoD Commercial Managers Toolkit, See**: http://www.ams.mod.uk/ams/content/docs/toolkit/index.htm • **DE Library Available at**: • **DREAM Administration Manager Available at:** • **EST Defence Estates** **Other Guidance** • **For, "*Teaching and Learning Building Design and Construction,* See:** http://shop.earthscan.co.uk/ProductDetails/mcs/productID/711 • **OGC Sustainable Procurement.** Available via: • **TSO The Green Book**, 2003. Available via • http://www.ogc.gov.uk		0 / 3

D-PR 2

Sustainable Development Construction Specialist

Aim:
To identify key sustainability opportunities, with an aim to achieving best practice design standards.

Credit Criteria:

The design team should receive input from a competent person with proven skills and abilities in the design and delivery of sustainable building that this assessment tool relates to. The competent person could be a DREAM / BREEAM / CEEQUAL accredited assessor to facilitate the successful delivery of an "Excellent" rated building.

Good design should:

- Make a positive addition to the location, the environment and the community
- Add value and reduce whole life costs
- Create built environments that are safe to construct and safe to use
- Create flexible, durable, sustainable and ecologically sound environments for the community
- Minimise waste of materials, energy and pollution both in construction and in use
- Be attractive and healthy for users
- Contribute to construction that is quick, safe and efficient
- Produce a facility that is easy and cost effective to manage, clean and maintain

Credit Evidence:
Evidence could include a letter of appointment or a report from the sustainable development specialist, along with details of the specialist's qualifications and experience in sustainable development.

Further Guidance:

MOD Guidance

- **For those with access to MoD Intranet, See:**
  http://deintranet.de.r.mil.uk:147/publications/de/estates/policy_instructions/2004/pi_04-29_attachment.pdf
- **For official Defence Publications, Information and Statistics, See:**
  http://www.mod.uk/DefenceInternet/DefenceFor/Researchers/
- **For JSP 434 Defence Construction in the Built Environment, See:**
  http://www.defence-estates.mod.uk/publications/jsp/jsp434/index.htm
- **For JSP418 Sustainable Development and Environment Manual, See:**
  http://www.defence-estates.mod.uk/publications/jsp/jsp418/index.htm
- **The Sustainability Appraisal Handbook *For the MoD Estate*, See:**
  http://defenceintranet.diiweb.r.mil.uk/DefenceIntranet/Library/BrowseDocumentCategories/DefenceEstate/EstateStrategyAndManagement/ModSustainabilityAndEnvironmentalAppraisalToolHandbook.htm
- **For DE Design and Maintenance Guide No.7, See**: http://www.defence-estates.mod.uk/publications/technical_bulletins/1996/tb_96-27.pdf
- **For MoD Commercial Managers Toolkit, See:**
  http://www.ams.mod.uk/ams/content/docs/toolkit/index.htm
- **DE Library Available at:** library@de.mod.uk
- **DREAM Administration Manager Available at:** dream@de.mod.uk
- **EST Defence Estates** ESTSustainability@de.mod.uk

Other Guidance

- **For MoD's Approach to Sustainable Development, See:**
  http://www.mod.uk/DefenceInternet/AboutDefence/WhatWeDo/HealthandSafety/DSC/SustainableDevelopmentInGovernmentsdig.htm
- **For online building regs, See**:
  http://www.planningportal.gov.uk/england/professionals/en/1115314110382.html
- **OGC Procurement Guides 06, 07& 09.** Available via: www.ogc.gov.uk

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D-PR 3	**Building User Consultation** **Aim:** To ensure that both end users and stakeholders are consulted early on in the design process on sustainable development issues and suggestions / feedback are acted upon. **Credit Criteria:** One credit is available where at least two consultation sessions were held with building users prior to stage D of the design process to discuss sustainable development issues. A further credit is given where the user/stakeholder input has been integrated into the design. **Credit Evidence:** For the first credit, the design team should provide evidence such as feedback forms or minutes from the consultation sessions. For the additional credit, evidence can include minutes of meetings which record design changes based on consultation feedback. **Further Guidance:** **MOD Guidance** • **For JSP 434 Defence Construction in the Built Environment, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp434/index.htm • **For JSP418 Sustainable Development and Environment Manual, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp418/index.htm • **The Sustainability Appraisal Handbook *For the MoD Estate*, See:** http://defenceintranet.diiweb.r.mil.uk/DefenceIntranet/Library/BrowseDocumentCategories/DefenceEstate/EstateStrategyAndManagement/ModSustainabilityAndEnvironmentalAppraisalToolHandbook.htm • **For DE Design and Maintenance Guide No.7, See:** http://www.defence-estates.mod.uk/publications/technical_bulletins/1996/tb_96-27.pdf • **For MoD Commercial Managers Toolkit, See**: http://www.ams.mod.uk/ams/content/docs/toolkit/index.htm • **DE Library Available at:** library@de.mod.uk • **DREAM Administration Manager Available at**: dream@de.mod.uk • **EST Defence Estates** ESTSustainability@de.mod.uk **Other Guidance** • **For RICS Building User Consultation, See:** http://www.rics.org/Environmentalandlandconsultancy/Sustainability/sustainable_consult030206.html • **OGC Procurement Guides 01-10**. Available via: http://www.ogc.gov.uk		1 / 2
D-PR 4	**Evaluation of Local Supply Chain for Local Procurement** **Aim:** To mitigate transportation energy use and costs, and negate unnecessary use of transport. **Credit Criteria:** Materials (origin of products from within 100 miles of the site) should be selected and incorporated into the design wherever possible. One credit is awarded where written evidence is provided of the following: A review should be undertaken to identify opportunities for use of local suppliers providing products that have originated within 100 miles of the site. This should cover the following building elements:		1 / 1

- Structure
- Masonry
- Flooring
- Windows
- Cladding

At least 30% of materials by mass should have the potential to be supplied from local sources. As well as newly manufactured building products, this may include re-used or recycled materials or building elements. All local timber should meet the requirements of credit **PR9** .

Where buildings are required in remote areas, and the review of local suppliers shows that it is not possible to purchase at least 30% of materials by mass within 100 miles, then this credit may be awarded by default.

Credit Evidence:
Written confirmation of the origins of products shall be obtained from the suppliers (eg websites, correspondence etc showing addresses of sources).

Further Guidance:

MOD Guidance

- **For MoD's Approach to Sustainable Development, See:** http://www.mod.uk/DefenceInternet/AboutDefence/WhatWeDo/HealthandSafety/DSC/SustainableDevelopmentInGovernmentsdig.htm
- **For MoD Commercial Managers Toolkit, See**: http://www.ams.mod.uk/ams/content/docs/toolkit/index.htm
- **For JSP 434 Defence Construction in the Built Environment, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp434/index.htm
- **For JSP418 Sustainable Development and Environment Manual, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp418/index.htm
- **The Sustainability Appraisal Handbook *For the MoD Estate*, See**: http://defenceintranet.diiweb.r.mil.uk/DefenceIntranet/Library/BrowseDocumentCategories/DefenceEstate/EstateStrategyAndManagement/ModSustainabilityAndEnvironmentalAppraisalToolHandbook.htm
- **For DE Design and Maintenance Guide No.7, See**: http://www.defence-estates.mod.uk/publications/technical_bulletins/1996/tb_96-27.pdf
- **DE Library Available at:** library@de.mod.uk
- **DREAM Administration Manager Available at:** dream@de.mod.uk
- **EST Defence Estates** ESTSustainability@de.mod.uk

Other Guidance

- **Towards more sustainable construction: Green Guide for Managers on the Government Estate**. Available via: http://www.sustainable-development.gov.uk/sdig/improving/partg/suscon/1.htm
- **OGC Joint note on environmental issues in purchasing,** 2003. Available via: http://www.ogc.gov.uk/embedded-object.asp?docid=1001225
- **OGC Procurement Guide 06.** Available via: http://www.ogc.gov.uk

D-PR 5	**Environmental Profile of Materials** **Aim:** Reduce waste; save energy; reduce landfill and mitigate transportation costs **Credit Criteria:** One credit is awarded where three of the following building construction elements have an ?A? rated environmental performance. Two credits are awarded if five of the following building construction elements have an ?A? rated environmental performance. The requirements are:		1 / 2

• Roofs • External Walls • Upper floors • Windows • Insulation • Floor finishes • Internal walls • Hard landscaping	90% 'A' rated 90% 'A' rated 90% 'A' rated 90% 'A' rated 90% 'A' rated, zero ODP, GWP<5 90% 'A' rated 90% 'A' rated 90% 'A' rated

Credit Evidence:
The design team should provide specifications or drawings which detail all types of materials to be used. The assessor should use discretion where construction types vary slightly from those specified in the Green Guide.

Further Guidance:

MOD Guidance

- **JSP 507 MOD Guides to Appraisal and Evaluation.**
  Available via:
  http://defenceintranet.diiweb.r.mil.uk/DefenceIntranet/Library/BrowseDocumentCategories/Finance/FinancialManagement/ValueForMoney/Jsp507ModGuideToAppraisalAndEvaluation.htm
- **For JSP 434 Defence Construction in the Built Environment, See:**
- http://www.defence-estates.mod.uk/publications/jsp/jsp434/index.htm
- **For JSP418 Sustainable Development and Environment Manual, See:**
  http://www.defence-estates.mod.uk/publications/jsp/jsp418/index.htm
- **The Sustainability Appraisal Handbook *For the MoD Estate*, See:**
  http://defenceintranet.diiweb.r.mil.uk/DefenceIntranet/Library/BrowseDocumentCategories/DefenceEstate/EstateStrategyAndManagement/ModSustainabilityAndEnvironmentalAppraisalToolHandbook.htm
- **For DE Design and Maintenance Guide No.7, See**: http://www.defence-estates.mod.uk/publications/technical_bulletins/1996/tb_96-27.pdf
- **DE Library Available at**: library@de.mod.uk
- **DREAM Administration Manager Available at:**
  dream@de.mod.uk
- **EST Defence Estates** ESTSustainability@de.mod.uk

Other Guidance

- **For Constructing Excellence: Best Practice and Guidance Tools, See:**
  http://www.wrap.org.uk/downloads/10_Best_Practice_CE.7c66fdc4.pdf
- **For Materials Rating Performance, See:**
  http://www.npl.co.uk/performance/f4.html
- **TSO The Green Book**, 2003. Available via
  http://greenbook.treasury.gov.uk/
- **NGS** www.GreenSpec.co.uk

D-PR 6

Recycled Aggregate Materials

Aim:
To encourage the recycling of aggregate materials, thereby reducing costs by avoiding the need for landfill and unnecessary handling and transportation.

Credit Criteria:
Credits are awarded on the following basis:

- One credit can be achieved for **structural concrete**: a minimum of **30%** of aggregates by mass must be specified from recycled aggregate sources within a 100 mile radius.
- One credit can be achieved for **other uses of aggregate**: a minimum of **50%** of aggregates must be demolition materials sourced on site or recycled materials from sources within a 100 mile radius.

1 / 2

Potential applications for reclaimed /recycled materials are:

Applications	Reclaimed/Recycled Materials
Road pavement layers	Blast furnace slag - air cooled
	China clay waste
Embankment & fill	Colliery spoil
Unbound sub base	Foundry sand
Cement bound sub base	Recycled crushed glass
Cement bound road base	MSW incinerator ash
P G concrete	Plastic asphalt cement additive Crushed concrete Spent oil shale Spent railway ballast Steel slag

Credit Evidence:
The team should provide calculations showing the total amount of aggregates required and the amount of aggregates sourced from reclaimed and/or recycled materials. The team should also provide evidence of sources of reclaimed and/or recycled aggregates (eg letters from suppliers stating that the required volume of reclaimed and/or recycled aggregates can be provided, and the origin of these aggregates).

Further Guidance:

MOD Guidance

- **For MoD Commercial Managers Toolkit, See:**
  http://www.ams.mod.uk/ams/content/docs/toolkit/index.htm
- **For official Defence Publications, Information and Statistics, See:**
  http://www.mod.uk/DefenceInternet/DefenceFor/Researchers/
- **For JSP 434 Defence Construction in the Built Environment, See:**
  http://www.defence-estates.mod.uk/publications/jsp/jsp434/index.htm
- **For JSP418 Sustainable Development and Environment Manual, See:**
  http://www.defence-estates.mod.uk/publications/jsp/jsp418/index.htm
- **The Sustainability Appraisal Handbook *For the MoD Estate*, See:**
  http://defenceintranet.diiweb.r.mil.uk/DefenceIntranet/Library/BrowseDocumentCategories/DefenceEstate/EstateStrategyAndManagement/ModSustainabilityAndEnvironmentalAppraisalToolHandbook.htm
- **For DE Design and Maintenance Guide No.7, See**: http://www.defence-estates.mod.uk/publications/technical_bulletins/1996/tb_96-27.pdf
- **DE Library Available at**: library@de.mod.uk
- **DREAM Administration Manager Available at**: dream@de.mod.uk
- **EST Defence Estate**s ESTSustainability@de.mod.uk

Other Guidance

- http://www.wrap.org.uk
- http://www.aggregain.org.uk/
- http://www.procurementsolutions.gov.uk
- http://www.ogcbuyingsolutions.gov.uk
- http://ogc.gov.uk
- http://ciwm.co.uk

D-PR 7

Recycled Content of Building Materials

Aim:
To encourage the reuse and recycling of building materials, thereby reducing consumption of primary resources and minimising the quantity of UK waste being sent for disposal in

2 / 2

landfill. Reuse / recycling of materials can also reduce costs by avoidi

Credit Criteria:

Encouraging the reuse and recycling of building materials reduces consumption of primary resources and minimises the quantity of UK waste being sent for disposal in landfill. Reuse / recycling of materials can also reduce costs by avoiding landfill disposal charges and minimising transportation. Options include: reuse of reclaimed products; local recycling of construction and demolition waste; and the selection of manufactured products containing a higher fraction of recovered materials. This objective links to good practice in site waste management.

Use the online tool developed by WRAP (the Waste & Resources Action Programme) to determine the value of recycled content used and the top ten opportunities to increase this outcome. The tool is freely available at www.wrap.org.uk/construction/RCtoolkit.

The minimum outcome is 10% recycled content as a proportion of the total value of materials used on the project. The Quick Wins are the largest contributors to the potential increase in recycled content for the project, going from baseline/standard practice to cost-neutral good practice. They involve simple substitution of one product/material by an equivalent mainstream alternative (e.g. a competing brand with higher recycled content).

Credits are awarded for implementing either three (one credit) or five (two credits) of the top ten Quick Win opportunities PROVIDING the projected recycled content of the project is at least 10%.

Note that reuse of a product or material (such as demolition waste used as fill) is attributed 100% recycled content by value, and should be preferentially investigated as a potential Quick Win.

Credit Evidence:

The team should provide the standard report from the WRAP tool quantifying the projected overall level of recycled content by value and identifying the top ten Quick Win opportunities for the project. Details of the Quick Wins selected for implementation should be specified within this report. Evidence of the actual use of higher recycled content products for the selected Quick Wins may be sought during the construction phase (e.g. through review of product data sheets, delivery notes or invoices).

Further Guidance:

MOD Guidance

- **For MoD Commercial Managers Toolkit, See:**
  http://www.ams.mod.uk/ams/content/docs/toolkit/index.htm
- **For JSP418 Sustainable Development and Environment Manual, See:**
  http://www.defence-estates.mod.uk/publications/jsp/jsp418/index.htm
- **The Sustainability Appraisal Handbook *For the MoD Estate*, See:**
  http://defenceintranet.diiweb.r.mil.uk/DefenceIntranet/Library/BrowseDocumentCategories/DefenceEstate/EstateStrategyAndManagement/ModSustainabilityAndEnvironmentalAppraisalToolHandbook.htm
- **For DE Design and Maintenance Guide No.7, See**: http://www.defence-estates.mod.uk/publications/technical_bulletins/1996/tb_96-27.pdf
- **For JSP 434 Defence Construction in the Built Environment, See:**
  http://www.defence-estates.mod.uk/publications/jsp/jsp434/index.htm
- **DE Library Available at:** library@de.mod.uk
- **DREAM Administration Manager Available at:** dream@de.mod.uk
- **EST Defence Estates** ESTSustainability@de.mod.uk

Other Guidance

- **Tool and user guidance for evaluating recycled content in construction projects, available at** www.wrap.org.uk/construction/RCtoolkit
- **Case studies, guidance on Quick Win options, product and supplier information, technical specifications, procurement advice and other guidance on the efficient use of materials, available at** www.wrap.org.uk/construction **and** www.aggregain.org.uk
- http://www.procurementsolutions.gov.uk
- http://www.ogcbuyingsolutions.gov.uk
- http://ogc.gov.uk
- http://ciwm.co.uk

D-PR 8

PVC Minimisation

Aim:

To avoid the use of PVC materials.

Credit Criteria:

A review of material specifications for the following products should be undertaken to identify alternatives to PVC:

- Window frames
- Floor and wall finishes
- Kitchen surface finishes

Credit Evidence:

The design team should provide specifications and/or drawings which demonstrate that alternative materials to PVC have been selected and specified.

Further Guidance:

MOD Guidance

- **For JSP 434 Defence Construction in the Built Environment, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp434/index.htm
- **For JSP418 Sustainable Development and Environment Manual, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp418/index.htm
- **The Sustainability Appraisal Handbook *For the MoD Estate*, See:** http://defenceintranet.diiweb.r.mil.uk/DefenceIntranet/Library/BrowseDocumentCategories/DefenceEstate/EstateStrategyAndManagement/ModSustainabilityAndEnvironmentalAppraisalToolHandbook.htm
- **DE Library Available at**: library@de.mod.uk
- **DREAM Administration Manager Available at**: dream@de.mod.uk
- **EST Defence Estates** ESTSustainability@de.mod.uk

Other Guidance

- **DETR Entec UK Ltd (2001) Life Cycle Assessment of polyvinyl chloride and alternatives; summary report.** Available via: http://www.defra.gov.uk/environment/consult/pvc/02.htm
- **NGS** http://www.greenspec.co.uk
- **For PVC product information, See** http://www.carillionplc.com/sustain-2001/pdf/pvc%20guidance.pdf
- **For alternatives to PVC products and other information, SEE:** http://www.johngilbert.co.uk/resources/pvc.html%20

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D-PR 9

Timber

Aim:

To ensure that where possible, timber products manufactured

1 / 1

from sustainable sources are incorporated into the design.

Credit Criteria:

The credit is achieved when timber procurement is in line with DEFCON 691 'Timber and Wood-Containing Products Supplied Under the Contract' and CPET's 'UK Government Timber Procurement Policy'.

To gain the credit, the assessor should be satisfied that the design specification for sustainable timber products is in accordance with these guidelines.

Credit Evidence:

To confirm this, the assessor shall be provided with (1) the design specification, (2) relevant and specific invoices and delivery notes that give their unique Chain of Custody (CoC) number or equivalent, and (3) any other evidence required by DEFCON 691 and CPET. This should satisfy that any timber/wood products supplied were legally logged and traded.

Further Guidance:

MOD Guidance

- **For DEFCON691 See:** http://www.ams.mod.uk/content/docs/toolkit/content/defcons/defcon.htm
- **For MoD Commercial Managers Toolkit, See: http://www.ams.mod.uk/ams/content/docs/toolkit/index.htm**
- **For official Defence Publications, Information and Statistics, See:** http://www.mod.uk/DefenceInternet/DefenceFor/Researchers/
- **For JSP 434 Defence Construction in the Built Environment, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp434/index.htm
- **For JSP418 Sustainable Development and Environment Manual, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp418/index.htm
- **The Sustainability Appraisal Handbook *For the MoD Estate*, See:** http://defenceintranet.diiweb.r.mil.uk/DefenceIntranet/Library/BrowseDocumentCategories/DefenceEstate/EstateStrategyAndManagement/ModSustainabilityAndEnvironmentalAppraisalToolHandbook.htm
- **DE Library Available at:** library@de.mod.uk
- **DREAM Administration Manager Available at**: dream@de.mod.uk
- **EST Defence Estates** ESTSustainability@de.mod.uk

Other Guidance

- **Forest Stewardship Council (FSC)** http://www.fsc.org/
- **Greenpeace "How to Specify Good Wood" http://www.greenpeace.org.uk/forests/gwg.cfm**
- **The Central point of Expertise on Timber (CPET) www.proforest.net/cpet**
- 'Procuring Legal and Sustainable Timber' Guide (CIOB)
- Canadian Standards Association (CSA)
- Pan European Forest Certification (PEFC)
- Sustainable Forestry Initiative
- Malaysian Timber Certification Council (MTCC)
- Indonesian Ecolabelling Institute (LEI)
- Brazilian Forest Certification System (CERFLOR)
- Finish Forest Certification System (FFCS)
- www.sustainable-development.gov.uk/sdig/improving/contextf.htm
- http://www.sustainable-devlopment.gov.uk/sdig/reports/index.htm
- http://www.infolink.com.au/view-company.asp?companyid=20602

- http://www.defra.gov.uk/news/2004/040615a.htm
- http://www.foe.co.uk/campaigns/biodiversity/resource/goodwoodguide/wood/timber/typesatog.html
- http://www.unep-wcmc.org/species/tree-study/contents.html
- http://www.trada.co.uk
- http://www.bre.co.uk/
- http://www.rbgkew.org.uk/aboutus/intouch.html

D-PR 10

Building Manual

Aim:
To ensure that the building users understand the building and its systems, and how to operate the building efficiently to minimise resource consumption and other environmental impacts.

Credit Criteria:
The design team should prepare a manual which describes building systems and how to operate the building most efficiently. The manual should cover the following as a minimum:

- Non-technical description of the building, including heating and cooling strategy, BMS, energy efficiency measures, water systems, waste facilities, emergency systems, ventilation, lighting.
- Contact details for suppliers of installed equipment.
- Maintenance requirements.
- Plans showing locations of meters and equipment.
- Sample tables for monitoring and reporting gas, electricity and water usage.

Credit Evidence:
The design team should provide a copy of the manual.

Further Guidance:

MOD Guidance

- **For JSP 434 Defence Construction in the Built Environment, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp434/index.htm
- **For JSP418 Sustainable Development and Environment Manual, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp418/index.htm
- **The Sustainability Appraisal Handbook *For the MoD Estate*, See:** http://defenceintranet.diiweb.r.mil.uk/DefenceIntranet/Library/BrowseDocumentCategories/DefenceEstate/EstateStrategyAndManagement/ModSustainabilityAndEnvironmentalAppraisalToolHandbook.htm
- **For DE Design and Maintenance Guide No.7, See**: http://www.defence-estates.mod.uk/publications/technical_bulletins/1996/tb_96-27.pdf

- **DE Library Available at**: library@de.mod.uk
- **DREAM Administration Manager Available at**: dream@de.mod.uk
- **EST Defence Estates** ESTSustainability@de.mod.uk

Other Guidance

- **For building manuals and related information, See:** http://www.bsria.co.uk/press/?press=305
- **Also, see the Carbon Trust site address which includes 'Manual's' at:** http://search.carbontrust.co.uk/kbroker/carbontrust/carbontrust/search.ladv?ty0=0&op0=1&tx0=manuals&ut1=1&otx1=&op1=1&ty1=0&tx1=all&fl1=CT.ACL%3A&ha=835&ha=836&ha=837&ha=838&ha=839&ha=840&ha=1068&firstname=Don%20&lastname=Hambleton&noofpublications=0
- **For CDM Regulations, See:** http://www.hse.gov.uk/pubns/conindex.htm
- **CIBSE Building Log Book Toolkit (CD-ROM)**, 2003 (incorporating standard templates or customisable templates). Available via: http://www.cibse.org
- **ODPM Approved Document Part L2: Conservation of Fuel and Power**. Available via: http://www.odpm.gov.uk/index.asp?id=1130803
- **The Carbon Trust Good Practice Guide: Building Log**

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Books - a user's guide (GPG348) Available via: www.thecarbontrust.org.uk

D-PR 11

Building Adaptability

Aim:

To maximise utilisation of space, reduce the need for additional buildings/facilities and provide for the changing needs of people in the future.

Credit Criteria:

To gain the credit, the assessor should obtain evidence (such as drawings, building users guide) that shows how the main functions areas have been designed to be adaptable and how they have been 'future proofed' to minimise future obsolescence.

Possible measures include:

- Flexible interior space (eg non-structural partitions, moveable acoustic partitions) for meeting rooms, banqueting suites.
- Provision for projectors and screens for conferences, presentations, movie cinemas.
- Blackout capacity for presentations, cinemas.
- Performance lighting for presentations, theatre, balls/discos.
- Sound system (microphones, speakers etc) for presentations, cinemas, theatre, balls/discos.
- Indoor sports facilities (hoops, nets, boards, line markings).

Credit Evidence:

To gain the credit, the assessor should obtain evidence (such as drawings, building users guide) that shows how areas (eg meeting rooms, cafes) have been designed to be adaptable and how they have been “future proofed” to minimise future obsolescence.

Further Guidance:

Further Guidance and information in support of this credit can be found in:

MOD Guidance

• MOD Sustainability and Environmental Appraisal Tools (SEAT) Handbook. Available via: http://defenceintranet.diiweb.r.mil.uk/DefenceIntranet/Library/BrowseDocumentCategories/DefenceEstate/EstateStrategyAndManagement/ModSustainabilityAndEnvironmentalAppraisalToolHandbook.htm. Also available on DE Intranet: http://deintranet.de.r.mil.uk:147/publications/de/de-index.htm
• JSP 418 MOD Sustainable Development and Environment Manual. Available via: http://www.defence-estates.mod.uk/publications/jsp/index.htm
• JSP 434 MOD Defence Construction in the Built Environment
• DE Library Available at: library@de.mod.uk
• DREAM Administration Manager Available at: dream@de.mod.uk
• EST Defence Estates ESTSustainability@de.mod.uk

Other Guidance

• BS 5234-1: 1992 Partitions (including matching linings) – Part 1: Code of practice for design and installation
• BS 8233:1999 Sound insulation and noise reduction for buildings – Code of practice
• Fred Lawson, Congress, Convention and Exhibition Facilities: Planning, Design and Management, Architectural Press, 2001
• Fred Lawson, Restaurants, Clubs and Bars: Planning and Design Investment for Food Service Facilities, Architectural Press, 1995

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D-PR 12

Supply Chain

Aim:

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	To ensure that the supply chain is aware of the environmental requirements of the project and will commit to managing the environmental consequences of their activities. **Credit Criteria:** All Government Departments and all contractors operating on behalf of Government Departments are required to manage the impacts of their supply chain activities and make green purchases whenever possible. Suppliers should be assessed on their capabilities to address the consequences throughout the supply chain of all design, non-renewable material use, manufacture and production methods, packaging, logistics, service delivery, operation, maintenance, reuse, recycling and disposal options. Two credits can be awarded if the project team can demonstrate their ability to influence the environmental performance of the supply chain. One credit for the first tier of the supply chain, the second credit for further down the supply chain. **Credit Evidence:** The project team should provide copies of their procurement and supply chain strategy / management programme and supplier evaluation questionnaires. **Further Guidance:** **MOD Guidance** • **For MoD Commercial Managers Toolkit, See:** http://www.ams.mod.uk/ams/content/docs/toolkit/index.htm • **For JSP 434 Defence Construction in the Built Environment, See:** **http://www.defence-estates.mod.uk/publications/jsp/jsp434/index.htm** • **For JSP418 Sustainable Development and Environment Manual, See:** **http://www.defence-estates.mod.uk/publications/jsp/jsp418/index.htm** • **The Sustainability Appraisal Handbook *For the MoD Estate*, See:** **http://defenceintranet.diiweb.r.mil.uk/DefenceIntranet/Library/BrowseDocumentCategories/DefenceEstate/EstateStrategyAndManagement/ModSustainabilityAndEnvironmentalAppraisalToolHandbook.htm** • **BMS 2.7.6 Sustainable Procurement** • **DE Library Available at:** library@de.mod.uk • **DREAM Administration Manager Available at**: dream@de.mod.uk • **EST Defence Estates** ESTSustainability@de.mod.uk **Other Guidance** • **For Procurement OGC, See**: http://www.ogc.gov.uk/ • **OGC Achieving Excellence in Construction Procurement: Supply Chain and Sustainable Development (AE 11)** • **For Institute of Logistics, See:** http://www.ciltuk.org.uk/pages/home		
D-PR 13	**Tendering and Evaluation of Contracts** **Aim:** To ensure that MOD policy for addressing SD in contracts is delivered. All projects/IPTs involved in procurement on or affecting the Defence Estate must consider Sustainable Procurement as a fundamental part of their project. **Credit Criteria:** To gain a credit, sample questions (provided by the Sustainability Advisory Team (SAT)), must be incorporated into the Sustainable Development section of the PQQ and ITT/N Requirements of Response and contribute to the scoring procedure. The SAT will provide SME input in the evaluation of responses in conjunction with the IPT. Refinement of the bidder's SD commitment will then take place through Preferred Bidder Negotiations and Contract Placement. **Credit Evidence:**		1 / 1

The project team should provide copies of documents demonstrating the inclusion of the questions and the weighting allocated to the SD section.

Further Guidance:

MOD Guidance

- **For MoD Commercial Managers Toolkit, See:** http://www.ams.mod.uk/ams/content/docs/toolkit/index.htm
- **For JSP 434 Defence Construction in the Built Environment, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp434/index.htm
- **For JSP418 Sustainable Development and Environment Manual, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp418/index.htm
- **The Sustainability Appraisal Handbook *For the MoD Estate*, See:** http://defenceintranet.diiweb.r.mil.uk/DefenceIntranet/Library/BrowseDocumentCategories/DefenceEstate/EstateStrategyAndManagement/ModSustainabilityAndEnvironmentalAppraisalToolHandbook.htm
- **For DE Design and Maintenance Guide No.7, See:** http://www.defence-estates.mod.uk/publications/technical_bulletins/1996/tb_96-27.pdf
- **BMS 2.7.6 Sustainable Procurement**
- **Sustainable Development Guidance Note for Bidders (available from the SAT team)**
- **DE Library Available at**: library@de.mod.uk
- **DREAM Administration Manager Available at**: dream@de.mod.uk
- **EST Defence Estates** ESTSustainability@de.mod.uk

Other Guidance

- **For Procurement OGC, See**: http://www.ogc.gov.uk/

Travel - Design

CREDIT STATUS			
		Total Possible Credits:	**2**
		Credits acheived:	**2**
		Credits not acheived:	**0**
Credit Number	Question and Criteria	Assessor Notes	Credit Status
D-TR 1	**Cyclist Facilities** **Aim:** To encourage people to cycle to the Kitchen/Dining Facility and reduce dependence on individual motorised transport means. **Credit Criteria:** Secure cycle storage and shower/changing facilities should be included in the building design and construction specifications and drawings. Cycle storage should be provided for greater than 20% of living-in personnel AND 20% of staff (eg catering) AND 20% of the maximum dining/function capacity. Cycle storage facilities should be sheltered and secure. Shower/changing facilities should be provided. **Credit Evidence:** The team should provide drawings which show the locations, numbers and specifications of cycle facilities – storage, showers and changing rooms. **Further Guidance:** **MOD Guidance** • **MOD Sustainability and Environmental Appraisal Tools (SEAT) Handbook.** Available via: http://defenceintranet.diiweb.r.mil.uk/DefenceIntranet/Library/BrowseDocumentCategories/DefenceEstate/EstateStrategyAndManagement/ModSustainabilityAndEnvironmentalAppraisalToolHandbook.htm. Also available on DE Intranet: http://deintranet.de.r.mil.uk:147/publications/de/de-index.htm • **JSP 418 MOD Sustainable Development and Environment Manual**. Available via: http://www.defence-estates.mod.uk/publications/jsp/index.htm • **JSP 434 MOD Defence Construction in the Built Environment** • DE Library Available at: library@de.mod.uk • DREAM Administration Manager Available at: dream@de.mod.uk • EST Defence Estates ESTSustainability@de.mod.uk **Other Guidance** • **Sustainable Transport** http://www.sustrans.org.uk • **Department for Transport** http://www.dft.gov.uk • **Cycle Campaign Network** http://www.cyclenetwork.org.uk • London Cycling Campaign www.lcc.org.uk • http://www.can.org.nz/articles/cycle_friendly_employer_resource.htm		1 / 1
D-TR 2	**Site Accessibility for Pedestrians and Cyclists** **Aim:** To encourage people to walk and cycle from the Kitchens and Dining Facilities to other onsite and/or local facilities (eg offices, shops) and reduce dependence on individual motorised transport means. **Credit Criteria:** Safe pedestrian and cycle routes should be provided from the building to other onsite and/or local facilities, and they should not cross main vehicular access routes without safe crossing points.		1 / 1

Credit Evidence:
Drawings should be provided which show the location of the building and other onsite and/or local facilities (eg offices, shops), safe pedestrian and cycle routes, and (where applicable) safe crossing points.

Further Guidance:

MOD Guidance

- **For JSP 434 Defence Construction in the Built Environment, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp434/index.htm
- **For JSP418 Sustainable Development and Environment Manual, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp418/index.htm
- **The Sustainability Appraisal Handbook *For the MoD Estate*, See:** http://defenceintranet.diiweb.r.mil.uk/DefenceIntranet/Library/BrowseDocumentCategories/DefenceEstate/EstateStrategyAndManagement/ModSustainabilityAndEnvironmentalAppraisalToolHandbook.htm
- **For DE Design and Maintenance Guide No.7, See**: http://www.defence-estates.mod.uk/publications/technical_bulletins/1996/tb_96-27.pdf
- **DE Library Available at**: library@de.mod.uk
- **DREAM Administration Manager Available at**: dream@de.mod.uk
- **EST Defence Estat**es ESTSustainability@de.mod.uk

Other Guidance

- **For the DoT walking and cycling action plan, See:** http://www.dft.gov.uk/stellent/groups/dft_susttravel/documents/page/dft_susttravel_029
- **Sustainable Transport** http://www.sustrans.org.uk
- **Department for Transport** http://www.dft.gov.uk
- **Cycle Campaign Network** http://www.cyclenetwork.org.uk

Water - Design

CREDIT STATUS			
	Total Possible Credits:		**8**
	Credits acheived:		**8**
	Credits not acheived:		**0**
Credit Number	Question and Criteria	Assessor Notes	Credit Status
D-WR 1	**Water Conservation Equipment** **Aim:** To reduce water consumption in showers and basins. **Credit Criteria:** Where taps are specified for all hand wash basins, they should be hand detecting spray taps or push button spray taps with timed shut-off. Shower heads (< 9 L/min) should be specified. **Credit Evidence:** The assessor should ensure that the design and construction specifications and drawings specify the appropriate sanitary ware/fittings. **Further Guidance:** **MOD Guidance** • **For AQUATRINE information, See**: http://www.partnershipsuk.org.uk/Casestudies/mod-aquatrine-case-study.asp • **Also, AQUATRINE enquiries at**: aquatrine.pmo@de.mod.uk • **For JSP 434 Defence Construction in the Built Environment, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp434/index.htm • **For JSP418 Sustainable Development and Environment Manual, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp418/index.htm • **The Sustainability Appraisal Handbook *For the MoD Estate*, See**: http://defenceintranet.diiweb.r.mil.uk/DefenceIntranet/Library/BrowseDocumentCategories/DefenceEstate/EstateStrategyAndManagement/ModSustainabilityAndEnvironmentalAppraisalToolHandbook.htm • **DE Library Available at**: library@de.mod.uk • **DREAM Administration Manager Available at:** dream@de.mod.uk • EST Defence Estates ESTSustainability@de.mod.uk **Other Guidance** • **For Water Conservation Advice, see Envirowise at:** http://www.envirowise.gov.uk/		1 / 1
D-WR 2	**WCs** **Aim:** To reduce water consumption in toilets. **Credit Criteria:** The assessor should confirm that all WC's are 6/4 litre dual flush and that they are specified in the design and construction specifications and drawings. **Credit Evidence:** The assessor should confirm that all WC's are 6/4 litre dual flush and that they are specified in the design and construction specifications and drawings. **Further Guidance:** **MOD Guidance**		1 / 1

	• **MOD Sustainability and Environmental Appraisal Tools (SEAT) Handbook.** Available via: http://defenceintranet.diiweb.r.mil.uk/DefenceIntranet/Library/BrowseDocumentCategories/DefenceEstate/EstateStrategyAndManagement/ModSustainabilityAndEnvironmentalAppraisalToolHandbook.htm. Also available on DE Intranet: http://deintranet.de.r.mil.uk:147/publications/de/de-index.htm • **For DE Design and Maintenance Guide No.7, See:** http://www.defence-estates.mod.uk/publications/technical_bulletins/1996/tb_96-27.pdf • **For JSP 434 Defence Construction in the Built Environment, See**: http://www.defence-estates.mod.uk/publications/jsp/jsp434/index.htm • **For JSP418 Sustainable Development and Environment Manual, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp418/index.htm • **For those with access to MoD Intranet, See:** http://deintranet.de.r.mil.uk:147/publications/de/estates/policy_instructions/2004/pi_04-29_attachment.pdf • **DE Library Available at:** library@de.mod.uk • **DREAM Administration Manager Available at:** dream@de.mod.uk • **EST Defence Estates** ESTSustainability@de.mod.uk **Other Guidance** • **EA**http://www.environment-agency.gov.uk/subjects/waterres/286587/?version=1&lang=_e • **HMSO The Water Supply (Water Fittings) Regulations**, 1999. Available via: http://www.hmso.gov.uk/si/si1999/19991148.htm • **Water UK**http://www.water.org.uk/ • **The Bathroom Manufacturers Association**. http://www.bathroom-association.org/watersaving/		
D-WR 3	**Urinals Control** **Aim:** To reduce water losses in urinals. **Credit Criteria:** All urinals should be fitted with proximity detection devices. **Credit Evidence:** The assessor should ensure that the design and construction specifications and drawings determine that all urinals are fitted with proximity detection devices. **Further Guidance:** **MOD Guidance** • **MOD Sustainability and Environmental Appraisal Tools (SEAT) Handbook.** Available via: http://defenceintranet.diiweb.r.mil.uk/DefenceIntranet/Library/BrowseDocumentCategories/DefenceEstate/EstateStrategyAndManagement/ModSustainabilityAndEnvironmentalAppraisalToolHandbook.htm. Also available on DE Intranet: http://deintranet.de.r.mil.uk:147/publications/de/de-index.htm • **For those with access to MoD Intranet, See:** http://deintranet.de.r.mil.uk:147/publications/de/estates/policy_instructions/2004/pi_04-29_attachment.pdf • **For JSP 434 Defence Construction in the Built Environment, See**: http://www.defence-estates.mod.uk/publications/jsp/jsp434/index.htm		1 / 1

	• **For JSP418 Sustainable Development and Environment Manual, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp418/index.htm • **For those with access to MoD Intranet, See:** http://deintranet.de.r.mil.uk:147/publications/de/estates/policy_instructions/2004/pi_04-29_attachment.pdf • DE Library Available at: library@de.mod.uk • DREAM Administration Manager Available at: dream@de.mod.uk • EST Defence Estates ESTSustainability@de.mod.uk **Other Guidance** • **EA**http://www.environment-agency.gov.uk/subjects/waterres/286587/?version=1&lang=_e • **HMSO The Water Supply (Water Fittings) Regulations**, 1999. Available via: http://www.hmso.gov.uk/si/si1999/19991148.htm • **Water UK**http://www.water.org.uk/ • **The Bathroom Manufacturers Association**. http://www.bathroom-association.org/watersaving/		
D-WR 4 ✻	**Water meter** **Aim:** **To both reduce water consumption and allow all water consumption to be managed and monitored.** **Credit Criteria:** **The building design and construction specifications and drawings should stipulate the fitting of meters for the main incoming supply and all major process water uses including independent supply to Kitchens and Dining Facilities. The meters should be capable of being monitored via a BMS.** **Credit Evidence:** **The design team should provide drawings which show the locations and types of all water meters, including the capability of being monitored via a BMS.** **Further Guidance:** **MOD Guidance** • **For official Defence Publications, Information and Statistics, See:** **http://www.mod.uk/DefenceInternet/DefenceFor/Researchers/** • **For JSP 434 Defence Construction in the Built Environment, See:** **http://www.defence-estates.mod.uk/publications/jsp/jsp434/index.htm** • **For JSP418 Sustainable Development and Environment Manual, See:** **http://www.defence-estates.mod.uk/publications/jsp/jsp418/index.htm** • **DE Library Available at: library@de.mod.uk** • **DREAM Administration Manager Available at: dream@de.mod.uk** • **EST Defence Estates ESTSustainability@de.mod.uk** **Other Guidance** • **For Water usage advice (Environwise), See:** **http://www.envirowise.gov.uk/page.aspx?o=163392**		**1 / 1**

	• **For Friends of the Earth, Water advice, See:** http://www.green-office.org.uk/audit.php?goingto=factsheet5 • **For Water Metering Advice (DEFRA), See:** http://www.defra.gov.uk/environment/water/industry/water_metering/right.htm • **For Government Info on Water Metering Policy, See:** http://business.guardian.co.uk/story/0,,1952612,00.html		
D-WR 5	**Rain Water Management** **Aim:** The aim is twofold: • To reduce water consumption • To limit flow of storm water into mains drainage system **Credit Criteria:** The building design should include provision for a rainwater recycling system or a green roof to attenuate storm water. Three credits will be awarded through provision of the following: • Where facilities for the collection of rain water run-off from the building roof are provided to supply WC cisterns. One method of compliance will be to show that the storage tank will have capacity to supply two weeks of WC water demand. **OR** • Where a green roof capable of 25% rain water retention is specified for greater than 80% of the roof area. **Credit Evidence:** Drawings, specifications and calculations should be provided to show the type of rainwater attenuation system to be installed and its retention capacity. **Further Guidance:** **MOD Guidance** • **For JSP 434 Defence Construction in the Built Environment, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp434/index.htm • **For JSP418 Sustainable Development and Environment Manual, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp418/index.htm • **DE Library Available at:** library@de.mod.uk • **DREAM Administration Manager Available at**: dream@de.mod.uk • **EST Defence Estates** ESTSustainability@de.mod.uk **Other Guidance** • **For Green Roofs (RIBA) publications, See:** http://www.ribabookshops.com/site/viewtitle.asp?pid=5429 • **UK Rain water harvesting association** http://www.ukrha.org/ • **EA**http://www.environment-agency.gov.uk/subjects/waterres/286587/?	Retention figures to be calculated for green roof	3 / 3

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- http://www.ciwem.co m/ about/

D-WR 6

Drainage and Flooding

Aim:
To minimise risks of water pollution and flooding.

Credit Criteria:

To gain a credit the assessor should establish that the following issues have been considered in the development of the design:

- Natural drainage management. Any water bodies / courses affected by the development should be managed to maintain their effectiveness, including natural flood plain areas and groundwater movement.
- Control of site water run-off. Storage facilities to contain run-off and allow managed release must be provided.
- Area of impermeable surfaces must be minimised. Alternatives include using green roofs / permeable hard standing / grass-crete car parks etc.
- The potential for pollution of natural water courses and groundwater must be minimised, for example using filters / separation / settling.
- Controlled use of non potable water, for example using rain water run off for watering of landscaped areas or vehicle washing.
- Features to reduce flood impact for developments in known flood plains, for example high level electric sockets.

Credit Evidence:
The design team should demonstrate via specifications, drawings or other appropriate methods, evidence of flood risk assessment and the features that have been included to mitigate this.

Further Guidance:

MOD Guidance

- **For JSP 434 Defence Construction in the Built Environment, See**:
  http://www.defence-estates.mod.uk/publications/jsp/jsp434/index.htm
- **For JSP418 Sustainable Development and Environment Manual, See:**
  http://www.defence-estates.mod.uk/publications/jsp/jsp418/index.htm
- **For official Defence Publications, Information and Statistics, See:**
  http://www.mod.uk/DefenceInternet/DefenceFor/Researchers/
- **DE Library Available at**: library@de.mod.uk
- **DREAM Administration Manager Available at**: dream@de.mod.uk
- **EST Defence Estates** ESTSustainability@de.mod.uk
- **DE Technical Bulletin 01/13 Town & Country Planning E Guidance. Sustainable Development**
- http://deintranet.de.r.mil.uk:147/publications/de/de-index.htm

Other Guidance

- **For Flood and Coastal Erosion Flood Management DEFRA Advice), See:**

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http://www.defra.gov.uk/environ/fcd/hltarget/default.htm

For Environment Agency Regional Flood Management Information, See: http://www.environment-agency.gov.uk/aboutus/1105530/310151/319450/1284175/?version=1&lang=_e

- http://www.environment-agency.gov.uk

Waste - Design

CREDIT STATUS			
	Total Possible Credits:		**3**
	Credits acheived:		**3**
	Credits not acheived:		**0**
Credit Number	Question and Criteria	Assessor Notes	Credit Status
D-WS 1	**Storage and Collection of Food & Recyclable Wastes** **Aim:** To reduce items sent to landfill and reduce the requirement for the use of virgin materials through recycling. **Credit Criteria:** The building design should allow for the on site secure disposal, segregation, storage and collection of recyclable and compostable wastes. • Collection bins should be placed in prominent positions throughout the building for personnel to dispose of paper, plastic, metal, glass and general waste. • Secure, labelled storage space for paper, plastic, metal, glass, compostable and general waste should be allocated in close proximity to the buildings food preparation and dining areas in an internal or external service area, with easy access for collection. • Sufficient space allocation (1m 2 per 1000m 2 of floor area, minimum 5m 2, maximum 10m 2). • Compostable food wastes should be stored separately in the external service area in a well ventilated, covered and secure storage container before being collected and transported to nearby composting facilities either on site or in the local community. The food waste storage should be secure from vermin or local wildlife. **Credit Evidence:** The assessor should be provided with (1) furniture layout drawings which show the locations, numbers and types of collection bins throughout the building, and (2) general arrangement drawings which show the location and size of the recycling storage area. **Further Guidance:** **MOD Guidance** • **For JSP 434 Defence Construction in the Built Environment, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp434/index.htm • **For JSP418 Sustainable Development and Environment Manual, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp418/index.htm • **For official Defence Publications, Information and Statistics, See**: http://www.mod.uk/DefenceInternet/DefenceFor/Researchers/ • **DE Library Available at**: library@de.mod.uk • **DREAM Administration Manager Available at**: dream@de.mod.uk • **EST Defence Estates** ESTSustainability@de.mod.uk **Other Guidance**		1 / 1

	• **For Storage and Collection of Recyclable Wastes Etc (WRAP), See:** http://www.wrap.org.uk/		
D-WS 2	**Design for Waste Management** **Aim:** To maximise resource efficiency and minimise disposal of material to landfill. **Credit Criteria:** Buildings can be designed to optimise resource efficiency, by minimising waste generation during construction, using reclaimed materials, and making materials available for reuse at the end of the useful life of the building. Two credits can be awarded for designing in features which meet these aims. Examples include: • Modular off site construction. This reduces on-site waste generation during construction, and prevents other problems such as over-ordering. • Use reclaimed materials in the construction of the building. This could include reuse of materials, components or equipment from other sources such as dismantled buildings. • Design for deconstruction. This enables the building to be dismantled at the end of its useful life, and the materials, components and equipment can be salvaged for reuse elsewhere. **Credit Evidence:** The design team should demonstrate via specifications, drawings or other appropriate evidence, the features which have been designed into the building to minimise waste generation during construction and decommissioning. **Further Guidance:** **MOD Guidance** • **For JSP 434 Defence Construction in the Built Environment, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp434/index.htm • **For JSP418 Sustainable Development and Environment Manual, See:** http://www.defence-estates.mod.uk/publications/jsp/jsp418/index.htm • **DE Library Available at:** library@de.mod.uk • **DREAM Administration Manager Available at**: dream@de.mod.uk • **EST Defence Estates** ESTSustainability@de.mod.uk **Other Guidance** • **For online building regs, See:** http://www.planningportal.gov.uk/england/professionals/en/1115314110382.html • **OGC's Achieving Excellence in Construction - Procurement Guide 11: Sustainability, 2005, available at** http://www.ogc.gov.uk/SDToolkit/reference/ogc_library/achievingexcellence/ae11.pdf		2 / 2