

The following sections are under review as these are no longer valid or not applicable and need rewriting to better reflect the Trust and existing resources available to complement this policy:

- 1.d.
- 1.f.
- 1.g.iv.
- 2.a.
- 2.b.
- 2.d.
- 3.b. i, iii, and v.
- 3.c. ii, iii & v.
- 3.d. iv
- 4.b.
- 4.c.
- Appendix 2
- Appendix 3

The remainder of the document is valid and guidelines are still operational. Once the relevant sections are amended, the revised policy will be issued.



Energy and Water Policy

Worcestershire Mental Health Partnership NHS Trust Information Reader Box

Document Type:	Corporate Policy
Document Purpose:	Best Practice Guidance
Unique identifier:	TC0116
Title:	Energy and Water Policy
Target Audience:	All Staff
Description:	The purpose of this document is to formalise the Trust's policy on energy usage, and to endorse the principle that reducing energy intensity of operations is of paramount importance both in terms of reducing operating costs and protecting the global environment.
Superseded Documents:	None
Ratified by:	Quality Committee
Ratification date:	January 2011
Implementation date:	January 2011
Review period:	3 years
Version update date:	
Review date:	January 2014
Owner:	Environment Officer
Responsible group:	Strategic Investment & Planning Committee
Contact Details:	Environment Officer NHS Worcestershire Evesham Community Hospital Evesham Worcestershire WR11 1JT

Contents

1. Introduction	2
2. Duties	3
3. Organisation	3
4. Energy and Consumption Targets	5
5. Monitoring and Targeting	6
6. The Heating Season and Room Temperatures	6
7. Setting of Controls	7
8. Maintenance of Plant	7
9. Use of Electrical Heaters and other Energy Use	7
10. Procurement of Energy Consuming Equipment	8
11. Energy and Utility Costs	9
12. Water	9
13. Staff Awareness	10
14. References	11
Appendix 1: Heating Standards	15
Appendix 2: Control of Unnecessary Lighting	18
Appendix 3: Lighting Installation Standards	19
Appendix 4: Contact Details for Key Staff	21

1. Introduction

- a. The purpose of this document is to formalise the Trust's policy on energy usage, and to endorse the principle that reducing energy intensity of operations is of paramount importance both in terms of reducing operating costs and protecting the global environment. The combined energy and utilities expenditure was of the order of £900,000 from April 2009 to March 2010.
- b. This policy is an ongoing policy for energy use within Worcester Mental Health Partnership Trust and Worcestershire Primary Care Trust, setting standards of materials, plant and building fabric and target levels of lighting and room temperatures. It establishes responsibility of procurer, provider, business centre and service departments recognising the differing age, sophistication, physical and spatial environments.
- c. Increasing environmental legislation and public awareness means that environmental management issues including the regulation of energy and water consumption must become a priority within NHS organisations.
- d. NHS Worcestershire should endeavour to assess environmental performance in energy and water consumption with associated savings in carbon emissions annually through an Environmental Management Group (EMG) to be created by the Sustainable Development Action Strategy.
- e. In this document 'NHS Worcestershire' refers to the Worcestershire Mental Health Partnership.
- f. This policy should be read in conjunction with the PCT Environment & Carbon Management, Transport and Waste Policies as well as the Sustainable Development Action Strategy which summarises the projects and actions required to achieve targets.
- g. Through commitment to the policy the Trusts will aim to:
 - i. Consume energy in its most efficient, economic and environmentally responsible manner possible commensurate with patient care.
 - ii. Coordinate actions on energy management through the Carbon Management Group.

- iii. Identify and seek achievable reductions in energy consumption, through good housekeeping measures, promoting staff awareness and education of the impact of fossil fuel use on the global environment, and efficient building and plant design.
- iv. Purchase energy at the lowest cost and to monitor and target energy usage continually.
- v. Utilise advanced technologies in the operation of its buildings to achieve optimum saving balanced against a comfortable environment.
- vi. Examine life cycle implications in terms of energy and emissions when purchasing new or replacement plant and equipment.
- vii. Comply with mandatory legislation and carbon trading schemes such as the Carbon Reduction Commitment Energy Efficiency Scheme where applicable.

2. Duties

- a. The EMG should set ongoing targets requiring the continual reduction of Trust energy and water consumption using the latest practices and technologies.
- b. In addition, the EMG will ensure the Trusts comply with all relevant legislation at both National and Regional scales.
- c. All staff members are responsible for following the recommended procedures outlined in the Energy & Water, Sustainable Transport and Domestic Waste Policies in addition to the Sustainable Development Action Strategy.
- d. The Environmental Manager is responsible for coordinating environmental performance actions through a network of 'green champions' as chosen through volunteering or chosen by a supervisor.
- e. The policy and all the amendments shall be circulated on behalf of the Chief Executive to all Clinical and Non Clinical Directors, Service Managers, all Heads of Department, who will be responsible for ensuring that all staff members are aware of its contents.

3. Organisation

- a. This policy covers all aspects of the Trusts energy and water consumption as part of the overall environmental performance agenda and is the overall

responsibility of the Chief Executive but implemented by the Head of Facilities through intermediaries.

- b. It is the aim of the Estates Department to improve and maintain at the highest level possible the energy efficiency of its building and engineering services
 - i. The Trust Estate Services Team and Environmental Manager will be responsible for:
 - ii. The monitoring of energy consumption.
 - iii. Managing the energy conservation program.
 - iv. Input into the Trust's strategic planning process by providing timely advice on revenue implications during property acquisition/disposal.
 - v. Ensuring that when purchasing energy the optimum tariffs are selected in terms of economy and sustainability.
 - vi. Evaluating the savings and capital payback periods of specific projects, where possible, for inclusion in annual energy reports.
 - vii. Advising Senior Managers on efficient utilisation of fuels.
 - viii. Liaising with NHS Supply Chain, OGC Buying Solutions and other supplies departments during fuel price negotiations.
 - ix. Undertaking regular surveys of buildings, plant, equipment and services, and proposing items for future investment as new technologies emerge.
- c. The Estates Services Team Maintenance Department will be responsible for:
 - i. Operating plant and equipment in an energy efficient manner.
 - ii. Obtaining and collating accurate utilities meter readings on a monthly basis for onward electronic transmission to the Estates Services Team Environment Manager. Readings shall be made available to the Estates/Environment Officer by no later than the 7th of the following month.
 - iii. Managing some of the projects on the energy conservation programme.
 - iv. Liaising with the Estates/Environment Officer and Site/Departmental Managers.
 - v. Undertaking regular surveys of buildings, plant, equipment and

services, and proposing items for future investment. (in conjunction with the Estates Services Team Energy Manager).

- d. Each Departmental Manager should:
 - i. Ensure that their staff members are aware of the importance of energy and of the existence of an energy policy.
 - ii. Ensure that new equipment is energy efficient
 - iii. Liaise with the Environmental Manager and the Facilities Team for advice on policy and equipment (see Appendix V for site list and contact details)
 - iv. Promote 'good housekeeping' skills amongst staff members through the Green Champions network. Managers will be responsible for appointing staff members within their departments to fulfil this role should no volunteers come forward.

4. Energy Consumption Targets

- a. It is the intention to reduce energy and utilities consumption in line with the mandatory and voluntary targets set out below:
- b. Department of Health's Targets:
 - i. Achieve a target of 35-55 GJ/100m³ for the healthcare estate, for all new capital developments, major redevelopment or refurbishment.
 - ii. All existing facilities should achieve a target of 55-65 GJ/100m³
 - iii. All capital schemes both new build and refurbishment shall achieve energy performances at least 15% better than that required by Part L of the Building Regulations (or any legislation that supersedes or replaces Part L).
- c. 10:10 voluntary target to reduce our carbon footprint by 10% by March 2010 compared to the baseline year April 2009 – March 2010. This includes 2 aspects of energy usage:
 - i. Reduce the consumption of grid electricity by 10%
 - ii. Reduce the usage of on-site fossil fuels by 10%
- d. Achieve carbon savings in the order of 80% lower than the 1990 baseline by 2050 in line with the Climate Change Act 2008, and reiterated in the NHS

Carbon Reduction Strategy. Initially this requires a 10% reduction in All Scopes carbon footprint by January 2015.

5. Monitoring and Targeting

- a. The Estate Services Team will monitor performance and recommend targets for future energy consumption. Energy and utilities consumption data will be monitored on a monthly basis. Consumption data compared to target will be distributed quarterly to the user to enable close monitoring of consumption and also to alert managers of any variances requiring corrective measures.
- b. To enable monitoring and targeting of staff training and facility refurbishment automatic metering (AMRs) shall be installed to replace manually read meters. For all major energy-using departments sub metering will be considered in order to encourage staff to achieve greater energy efficiency. Meters should be located in places where readings may be taken with ease and their visibility can act as a reminder to the user to be prudent in the use of energy. Sub-meters shall be read by the Estates Department on a monthly basis as a minimum.
- c. In sites of 1000 m² or greater floor area, Display Energy Certificates (DECs) are a legal compliance. These should be undertaken by an approved Energy Assessor on an annual basis and should be earmarked as monitors for continual improvement.

6. The Heating Season and Room Temperatures

- a. For Non-Clinical areas the normal heating season shall be deemed to be 15th October to 15th April. This is in line with current good practice guidance. Operation of heating equipment and services outside of this period shall be restricted.
- b. The decision as to when heating is to be switched on or off for each site will finally rest with the Site Manager, or Facilities designated lead, following consultation with the Estates Manager. When this occurs outside the normal heating season, (15th October – 15th April) it should be reported to the Environment Officer, on the monthly meter reading return form. Temperatures for clinical areas shall be maintained at the levels set out in Appendix 1.

- c. On average a drop in room temperature of 1°C saves 8 % of the annual heating consumption. It is essential therefore to keep room temperatures as low as reasonably practical. The Department of Health publish recommended air temperatures for various uses and these shall be the Trusts long-term targets (Appendix 1).

7. Setting of Controls

- a. Individual room thermostats or thermostatic radiator valves, where these are designed for adjustment by the occupant, may be adjusted but not so as to exceed the recommended environmental air temperature. Temperature controls for the most part are controlled automatically by intelligent heating system controllers. Heating levels will not be raised where windows have been open.

8. Maintenance of Plant

- a. Faults that result in an increase or waste of energy will be rectified as soon as practicable by the Department of Estates.
- b. Energy using plant and equipment will be serviced as recommended by the manufacturer to ensure that maximum operating efficiencies are maintained.
- c. Environmentally acceptable and energy efficient alternatives will be considered when all plant modifications or upgrades are undertaken.
- d. Contractors working within the Trust Estate will be required to comply with the principles of this policy.

9. Use of Electrical Heaters and other Energy Use

- a. Electrical heaters shall not be used within the Trust premises, except as follows:
 - i. Where permanently installed as part of the designed heating system.
 - ii. In areas where the Estates Department has agreed that electric heaters are necessary to maintain the recommended environmental air temperature. In such instances the Estates Dept will provide suitable heaters.
 - iii. It shall be the Trust's policy wherever practical, to modify such areas

through additional insulation and eliminate the need for temporary electric heaters.

- iv. The Trust's Policy for electrical safety of apparatus and consideration of system loading shall not be affected by this policy.
- b. Photocopiers, computer equipment, catering equipment and other machinery and equipment, including medical diagnostic equipment should not be switched on unnecessarily, and should be switched off at the end of the working day.
- c. Every member of staff shall ensure that lighting is not used unnecessarily. In particular, lights shall be switched off when not required, and on leaving the room/department. New and upgraded lighting shall conform to the standards set down in Appendix 2 and 3.

10. Procurement of Energy Consuming Equipment

- a. Before purchasing any energy consuming machinery/equipment (except single items of electrical equipment rated below 1500 Watts) **the purchaser** shall:
 - i. Ensure that all purchases shall comply with the Trusts philosophy Sustainable Development as detailed in the Sustainable Development Action Plan.
 - ii. Raise the requisition in the normal way forwarding the requisition to NHS Supplies for costing/delivery purposes.
 - iii. The requisition should then forwarded to Estates to confirm energy costs/consequences. The purchaser shall declare whether the proposed purchase shall be required to be supplied from the hospitals emergency generator during power failures and obtain confirmation from the equipment manufacturer that the equipment is capable of operating on the electrical supply provided by the hospitals emergency generator. Where there is doubt, or if the manufacturer does not warrant that the equipment will operate on the electrical supply provided by the hospitals emergency generator, then the purchaser shall inform in writing, before the purchase, both the Trust's Environment Manager and Chief Executive.
 - iv. The Trust Environment Officer will advise the purchaser of the

available capacity of both the site electrical supply and generator capacity. Deficiencies should be addressed before the purchase of any equipment

- v. When requisition is then returned to Supplies incorporating above information, the Supplies Department will then raise the order.
- vi. The 1500 Watt limit does **not** apply to clause c) above.
- vii. The Estates Services Team Maintenance Division shall test **all** electrical equipment for electrical safety, before the equipment is used. **10.1.8** Tested items shall be logged on the asset register.

11. Energy and Utility Costs

- a. All forms of energy and water will be procured, where possible, from renewable and sustainable sources, purchased at the most advantageous prices available. This will be achieved by participation in the NHS Supplies Energy Purchasing Contract and other purchasing contracts and by direct negotiation with Energy Suppliers. Consideration of the security of supply will be paramount in all negotiations. An annual cost report based on the ERIC return will be produced detailing the Trusts energy costs & consumption.
- b. Reductions now will prepare the Trust for involvement in government carbon trading schemes, such as the Carbon Reduction Commitment Energy Efficiency Scheme. This scheme will impose a large financial burden on the Trust and will rank the Trust publicly with all other private and public bodies in the UK that are required to trade.

12. Water

- a. The Trust is committed to developing and maintaining a comprehensive water saving programme. This will increase efficiency, cut costs and enable us to make a positive contribution towards enhancing the environment. Every member of staff shall ensure water is not wasted. Leaks shall be reported immediately to the Estates Services Team Helpdesk.
- b. All plumbing systems, water fittings and water-using appliances shall comply with The Water Fittings Regulations (national requirements for the design, installation and maintenance of plumbing systems, water fittings and water-

using appliances).

- c. Automatic meters shall replace or be added to non automatic meters in order to achieve greater water efficiency and quickly identify areas of excess consumption. The meters should supply data to a web based monitoring software system and be monitored by the Trust Environment Officer.
- d. Where water or water-using equipment is used with fluids or materials that could contaminate it, there must be adequate protection to stop backflow of potentially contaminated water into other parts of the system, especially drinking water. The regulations define Fluid Risk Categories by the type of contaminants that are present and specify the appropriate type of prevention device, which must be fitted to guard against backflow.
- e. Low and dual-flush toilets should be considered if replacing existing units. The maximum cistern volume of new toilets is 6 litres, compared with 9 litres for older models. Existing cisterns of 9 litres or greater capacity shall be fitted with cistern dams or blocks to reduce their capacity.
- f. Supply restrictor valves shall be fitted in supply pipes to baths, sinks, wash hand basins etc. to keep the water flow constant, regardless of fluctuations in water pressure.
- g. Tap controls will be used on all new and refurbishment projects. Tap controls will be infrared, battery or mains (via isolating step down transformer) operated, or simple push-top types. Spray taps will **not** be used.
- h. Urinal controls will be used on all new and refurbishment projects, and retrofitted to existing urinals, where possible, ensuring that the cistern only flushes during department operating hours, or after use, rather than continuously. Consideration should be given to the use of Waterless urinals, which use either a syphonic trap, or an outlet in the urinal containing a pad impregnated with a deodorising agent.
- i. The Environment Officer will investigate the feasibility of collecting rainwater harvesting and grey water use for use within the estate in conjunction with the Estates Department, Infection Control Team and Finance.

13. Staff Awareness

- a. In-house publications and other publications will feature energy and water

matters at regular intervals. Further publicity materials will be made available on a regular basis. In addition, specialist promotions such as 'Energy Awareness Days' will be held periodically. An introductory document of these materials shall be included in the staff induction information pack.

14. References

Tyrrell, W., 2010. *Worcestershire Mental Health Partnership Trust – Internal Carbon Reduction Audit Report*. Available from Facilities Dept.

Saving Carbon, Improving Health. NHS Sustainable Development Unit, 2009.

[online] Available at:

[http://www.sdu.nhs.uk/documents/publications/UPDATE_NHS_Carbon_Reduction_Strategy_\(web\).pdf](http://www.sdu.nhs.uk/documents/publications/UPDATE_NHS_Carbon_Reduction_Strategy_(web).pdf) (Accessed 2009/10)

Worcestershire Climate Change Pledge 2010/11, Worcestershire County Council,

2010. [online] Available at: www.worcestershire.gov.uk/climatechangepledge

(Accessed 2010)

Sustainable Development Commission, 2009, *NHS Good Corporate Citizen*.

[online] Available at: <http://www.corporatecitizen.nhs.uk/> (Accessed 2010)

Climate Change Act 2008, [online] Available at:

<http://www.legislation.gov.uk/ukpga/2008/27/contents> (Accessed 2010)

Environment Act 1995, [online] Available at:

<http://www.legislation.gov.uk/ukpga/1995/25/contents> (Accessed 2010)

Environmental Protection Act 1990, [online] Available at:

<http://www.legislation.gov.uk/ukpga/1990/43/contents> (Accessed 2010)

Clean Air Act 1993, [online] Available at:

<http://www.legislation.gov.uk/ukpga/1993/11/contents> (Accessed 2010)

Noise and Statutory Nuisance Act 1993, [online] Available at:

<http://www.legislation.gov.uk/ukpga/1993/40/contents> (Accessed 2010)

Radioactive Substances Act 1993, [online] Available at:

<http://www.legislation.gov.uk/ukpga/1993/12/contents> (Accessed 2010)

Water Industry Act 1991, [online] Available at:

<http://www.legislation.gov.uk/ukpga/1991/56/contents> (Accessed 2010)

Water Resources Act 1991, [online] Available at:

<http://www.legislation.gov.uk/ukpga/1991/57/contents> (Accessed 2010)

Contaminated Land (England) Regulations 2000, [online] Available at:

<http://www.legislation.gov.uk/uksi/2000/227/contents/made> (Accessed 2010)

The Controlled Waste Regulations 1992, [online] Available at:

<http://www.legislation.gov.uk/uksi/1992/588/contents/made> (Accessed 2010)

The Environmental Protection (Controls on Ozone-Depleting Substances) Regulations 2002, [online] Available at:

<http://www.legislation.gov.uk/uksi/2002/528/contents/made> (Accessed 2010)

The Environmental Protection (Duty of Care) Regulations 1991, [online] Available at:

<http://www.legislation.gov.uk/uksi/1991/2839/contents/made> (Accessed 2010)

The Environmental Protection (Disposal of Polychlorinated Biphenyls and other Dangerous Substances) (England and Wales) Regulations 2000, [online] Available at:

<http://www.legislation.gov.uk/uksi/2000/1043/contents/made> (Accessed 2010)

The Groundwater Regulations 1998, [online] Available at:

<http://www.legislation.gov.uk/uksi/1998/2746/contents/made> (Accessed 2010)

The Landfill (England and Wales) Regulations 2002, [online] Available at:

<http://www.legislation.gov.uk/uksi/2002/1559/contents/made> (Accessed 2010)

The Hazardous Waste (England and Wales) Regulations 2005, [online] Available at:

<http://www.legislation.gov.uk/uksi/2005/894/contents/made> (Accessed 2010)

The Sulphur Content of Liquid Fuels (England and Wales) Regulations 2007, [online] Available at: <http://www.legislation.gov.uk/uksi/2007/79/contents/made> (Accessed 2010)

Waste Management Licensing Regulations 2005, [online] Available at:

<http://www.legislation.gov.uk/uksi/2005/1728/contents/made> (Accessed 2010)

Sustainable Development & Carbon Management Strategy, East Midlands Ambulance Service NHS Trust, 2009. Available from Will Tyrrell (will.tyrrell@cwaudit.org.uk)

NHS Nottinghamshire County Carbon Management Plan, NHS Nottinghamshire County, 2010. [online] Available at:

<http://www.emphasisnetwork.org.uk/networks/sd/documents/NHSNottsCountyCarbonManagementPlanFINAL.pdf> (Accessed 2010)

Policy and Procedure information Sheet: the Management of Energy, County Durham and Darlington Foundation NHS Trust, 2007. [online] Available at: <http://www.cddft.nhs.uk/NR/rdonlyres/30CF402F-BD00-4E86-BF6E-A1EA7F91C550/0/DraftEnergyPolicyfinal.pdf> (Accessed 2010)

Appendix 1: Heating Standards

Department of Health Departmental Air Temperature Recommendations

<i>Departmental areas</i>	°C	<i>Departmental areas</i>	°C
Accident & Emergency		Pharmacy	
Cleansing	21-23	Autoclave area/wash-up	16-18
Examination	21-23	Cool store	13-15
Appliance fitting	18-20	Dispensing area	18-20
Plaster	18-20	Flammable store	11-13
Radiodiagnostic	21-23	Goods receiving store	11-18
Resuscitation	21-23	Preparation/aseptic room	18-20
X-Ray viewing	18-20		
		Rehabilitation	
Dental		Exercise area	20-21-22
Dental surgery	18-20	Gym	19-21
Orthodontic model and record store	14-16	Hydrotherapy pool	24-26
		Hydrotherapy treatment utility	21-23
Wards (inc Geriatric & day hospitals)		Pool changing/showers	24-26
Day rooms and wards	21-23	Preparation bay	21-23
		Wax and splint	20-21-22
Intensive therapy unit			
Multi bed area	21-23	Staff accommodation	

Single bed area	16-27	Bath room	18-20
		Bed rooms	18-20
Kitchens		Bed sitting rooms	18-20
Cooking area	16-18	Box room and cleaners	11-13
Day store/Diet Store	11-13	Cloak room	14-16
Main store	14-16	Common room	18-20
Servery	16-18	Living rooms and sitting rooms	18-20
Veg prep/pan wash	16-18	Sick bay	18-20
		Utility 14-16	14-16
Psychiatry			
Ante room	18-21	Pathology	
Bed rooms	18-21	Examination	19-20-21
Behaviour therapy	18-21	Patient preparation areas	19-20-21
Consulting and interview	18-21	Sterilising rooms	16-18
Day rooms and dining	18-21	Venipuncture	20-22
ECT treatment	18-21	Stores cleaners	16-18
Entrance	16-18		
Industrial work	16-18	Maternity	
Therapy	18-20	Abnormal delivery	21-23
		Barrier nursing unit	18-23
Operating		Cot/incubator wards	23-24-25

Endoscopy and plaster rooms	20-21-22	Flying squad store	16-18
Operating suites	18-24	Normal delivery/first stage	21-23
Other ancillary rooms	18-20	SCBU nurseries and treatment room	21-30
X-Ray		Mortuary	
Equipment store	14-16	Band saw	16-18
Diagnostic/Lavage	20-21-22	Bier room	11-13
Viewing and sorting	18-20	Body store	11-13
		Medical observation	18-20
Offices/Works departments		Post mortem room	16-18
Garages	7-9	Undertakers room	16-18
Lavatories	15-17	Viewing room	16-18
Workshops	16-18		
Offices	16-18		

Appendix 2: Control of Unnecessary Lighting

The Trust Energy & Water Policy requires that each Department shall make practical arrangements to ensure that lighting is not used unnecessarily. There are two main reasons for the unnecessary use of lighting.

Mid Day - on dusky mornings lights are needed in many areas. As the amount of daylight increases through the day, staff members forget to switch the lights off again.

Mid day wastefulness is extremely difficult to overcome. However, an occasional reminder to staff will help, or even better, appoint a willing volunteer as Green Champion and ask him/her to do a daily or weekly tour of the department to remind people.

Automatic lighting systems may also be used where possible and appropriate upon consultation with staff.

Night - although, in general, staff members are conscientious about turning off their office lights at the end of the day, several areas are commonly forgotten (for example, filing rooms, toilets, corridors). This also applies to office machines such as small computers and copiers.

To eliminate night time wastefulness, each room that is likely to be forgotten should be made the responsibility of an individual (probably the most senior person of the section who uses the room most, the person who is situated nearest to it or a Green Champion). That person should check each night that all lights and machines are off before going home. (Occasionally, the room will be needed again after the lights have been turned off, but the user should turn them off as he/she leaves). Automatic lighting systems may also be used where appropriate upon consultation with staff.

Contract cleaning companies have the biggest responsibility for night time lighting in areas, which they clean at night. Their staff should be regularly reminded of the need to avoid wastage and to check all lights are off when they leave an area recognising the operational security needs for females.

Appendix 3: Lighting installation Standards & Re-Lamping Guide

1. Tungsten Lamps

- a. These use approximately five times the power of fluorescent lamps for the same light output and hence should only be installed for special applications such as spotlights.

2. Fluorescent Luminaires

- a. Conventional or miniature fluorescent luminaires should be used wherever lighting installations are being altered or newly installed except for areas described in 1.1 above, or where high intensity discharge lamps are suitable. All luminaires should have high frequency control gear wherever possible. Elsewhere switch start or electronic start gear compatible with krypton filled tubes shall be used. The use of 6 ft and 8 ft luminaires should be avoided (as the tubes are obsolete). Quick start and semi-resonant start control gear shall **not** be fitted.
- b. Existing luminaires: where switchstart luminaires are already installed, T8 lamps should be used as replacements - this will immediately give about 10% electrical savings over T12 tubes. Where cool white, white or warm white were previously fitted, an increase of about 10% in luminance will result, but where kolorite was previously fitted, an increase of 45 % in luminance will occur. Where possible, the number of tubes should be reduced to just achieve the latest recommended illuminance as detailed below.

3. Illumination Levels

- a. All new installations shall be designed to achieve the design luminance as detailed below ± 20 % after 2000 lamp running hours. In the past, designers have specified excessive lighting to ensure that the luminance is above the recommended level. In future, their brief will specify the acceptable minimum and maximum levels, and the levels should be checked on handover/commissioning.

3.2 Design illumination Specifications

Lamp Type	Compatible Control Circuits	Colour (P) = Polyphosphor (N) = Normal	Efficacy in lumen/watt inc. control	Areas of Use
-----------	-----------------------------	--	-------------------------------------	--------------

		Phosphor	gear	
Special high frequency	High frequency only	Colour 83 (P) (3000 K)	95	Residence and social areas
Krypton, silmline energy saving T8	All except quickstart and semi-resonant start Do not use in hot or cold rooms, outdoors or for dimming	Colour 84 (P) (4000 K)	95	All except as above
		Colour 83 (P) (3000 K)	73	Residence and social areas
		Colour 84 (P) (4000 K)	73	All except as above
		White (N) (3500 K)	64	Do not use (often supplied with new luminaires)
Argon conventional tubes T12	All, (may not fit in some modern luminaires designed for T8 tubes)	Colour 84 (P) (4000 K) Philips T12-TL84	63	Hot or cold rooms, outdoors, for dimming and some applications with quickstart or SRS circuits
		Daylight, Natural, White, Warm White, etc	59	For existing applications where T8 lamps cannot be used.
		Kolorite Tricolour 37	38	Clinical areas where T8 tubes cannot be used

Appendix 4: Contact Details for Key Staff

NHS Worcestershire Head of Facilities,

Facilities Dept,

Evesham Community Hospital,

Waterside,

Evesham,

WR11 1JT

NHS Worcestershire Estates Manager,

Facilities Dept,

Evesham Community Hospital,

Waterside,

Evesham,

WR11 1JT

NHS Worcestershire Environment Officer,

Facilities Dept,

Evesham Community Hospital,

Waterside,

Evesham,

WR11 1JT
