EcoWarrior Handbook

Ecosmart Campaign

NHS GREATER GLASGOW AND CLYDE

Contents

Introduction

"Sustainable development is development that meets the needs of the present without compromising the needs of future generations to meet their own needs". Bruntland 1987

Welcome to the EcoWarriors handbook. We hope that you will enjoy spreading the 'green' word around your work colleagues and friends helping then to think more sustainably about their work place and working practices.

This handbook is aimed at all staff whether located within one of our main Hospital buildings or one of our remote offices. It will help give you the tools to:
• Minimise waste, whether this be materials, energy or water
• Protect the environment and reduce our carbon footprint
• Save money that could be better used in other areas.

It is important that NHS Greater Glasgow and Clyde is seen to be doing its part for environmental sustainability. As the largest NHS board in Scotland we are large users of resources and purchaser of good and services, we have a significant impact on the environment. This gives us a chance to play a leading role in sustainability within the local community.

The Board has committed to the Carbon Management Plan through the Carbon Trust in 2009. A number of technical and policy projects are already underway to help meet our reduction targets but your role in encouraging behaviour change is also an essential part of becoming "low carbon NHS Greater Glasgow and Clyde". This plan was redeveloped in 2012 allowing us to re-establish our commitment to the plan.

As these measures become part of our daily working lives we hope that colleagues will take some of the ideas home and make their own local environmental contribution.

Using the handbook

This handbook is your comprehensive guide to being a successful EcoWarrior.
It has five main sections and provides you with all the tools you need to start making a real environmental difference.

1. Section One – Climate Change and Sustainability
2. Section Two - The EcoWarrior - helps you understand your role and gives a quick and helpful place to start your 'green' journey.
3. Section Three - Where To Start - helps you understand the areas of quick wins and how you can develop the role
4. Section Four - Key Action Areas - provides more extensive and detailed information from the four topic areas we are looking to influence.
5. Section Five – Legislation

Key action areas

The awareness campaign has identified key areas whereby EcoWarriors can help and influence change in behaviour with the overall aim of reducing our carbon footprint whilst making energy and carbon savings. The EcoSmart team have chosen to target four specific areas which are Energy,

Water, Travel and Waste. There are a number of reasons for targeting these areas. Firstly to keep the campaign in line with other Board targets as each of these topic areas are found in our Carbon Management Plan. These topic areas all have a measureable attribute so we can measure change as it happens. Whether this be litres, meters or kilowatts we can watch the reduction in these profiles from the changing behaviour. Finally each of these topic areas have the most impact on the Board's carbon emissions and combined have a tremendous cost to the Board each year.

1. Climate change and sustainability.

As noted in the above quote by Bruntland 1987, sustainability it our own ability to live within our current means whilst not infringing upon the needs of future generations. The earth system is a single, self regulating system which comprises of physical, chemical, biological and human components. This is a powerful reminder that we are in stark isolation with a finite limit of available resources. To become sustainable and to slow down the process of climate change we must recognise these links and our vulnerability and learn to live to balance them.

The regenerative capacity of the earth is affected directly by three components; society (people), the environment (planet) and the people (profits). It is only when these three are all in balance we will be truly sustainable.

Currently the rate of our consumption of resources exceeds the rate at which they are produced therefore these vital stocks can not be sustained in the long term. Our first step towards better management of our resources is achieving a better understanding of the fundamental limits of our existence.

At this point in time the extent to which man made processes can replicate the natural capital and processes is limited. Therefore we must continue to assess and monitor the impact that this imbalance has on the planet. This is climate change.

Climate change

Climate change is the increase emissions of greenhouse gas (GHG) (particularly CO2 but also methane, nitrosoxide, HFC's and CFC's) due to human activities. GHG's are produced by many industrial functions shown below.

Origins of GHG Emissions

- Waste Disposal and Treatment
- Land use and biomass burning
- Residential, commercial and other sources
- Fossil fuel retrieval, processing and distrubution
- Agricultural bi-products
- Transfportation fuels
- Industry processes
- Power stations
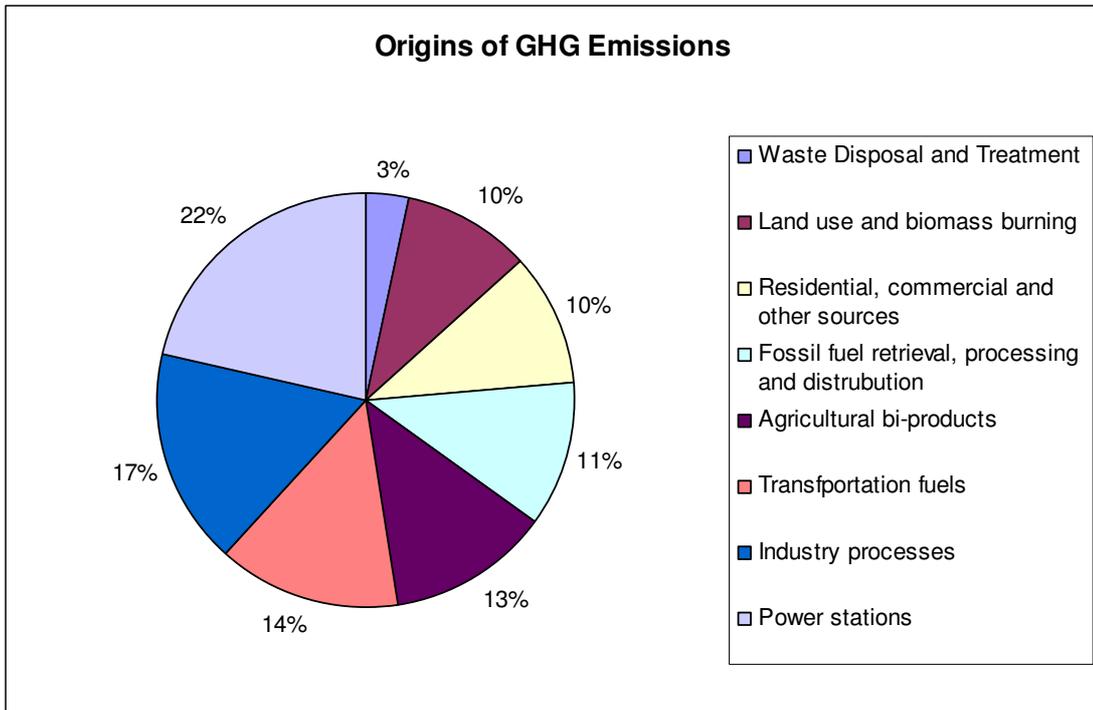
Since the industrial revolution of the 19th Century the increased emissions have pushed the level of CO2 in the atmosphere to almost double pre industrial levels. With these increased levels the atmosphere can now only absorb around 30% of the CO2 we emit.

The problems caused by these emissions are not immediate by way of a time lag in the climate system. We are all aware of the greenhouse effect, however this is only one of two natural processes which underpin climate change. The carbon cycle is the movement of carbon between the four sinks of the earth; atmosphere, land, ocean and sediments. Their regulation is the building blocks of life.

Carbon Footprint

A carbon footprint is a measurement of the impact human activities have on the environment purely in terms of the amount of GHG produced. The footprint can be calculated in two ways; the primary footprint is a measure of direct emissions of CO2 from the burning of fossil fuels including domestic energy consumption and transport. The secondary footprint is a measure of the indirect CO2 emissions from the whole life cycle of products we use – those associated with their manufacture and eventual breakdown. Due to the understandable complexity in calculating a secondary footprint, the NHS uses a primary calculation when determining its footprint.

Climate change has obvious impacts, many of which we have already seen. The increased flooding around the country is a prime example. More direct effects in the Greater Glasgow and Clyde area can be; increased temperatures leading to increased dependence on air conditioning and therefore decreased levels of comfort. Higher levels of humidity can lead to premature failure of building materials and increased mould through condensation and increased risk of rising damp.

These problems show that the environment is precariously balances and although wide spread issues are appearing in other world regions they have a very real impact in the Greater Glasgow and Clyde area.

2. The EcoWarrior

EcoWarriors role

Sustainability is a part of the vision for NHS GGC, and as such all members of staff should aim to make a contribution to ensuring the NHS delivers in this area. NHS GGC has implemented the Greencode policy throughout the estate which is the first step to making NHS GGC more sustainable and 'green'. This policy targets areas for action which include energy, waste and travel in a bid to tackle wider sustainability issues.

The main focus for this EcoSmart campaign, is an area where small positive actions can deliver significant financial and carbon savings for the NHS. Every member of staff has a duty to be aware of how and where energy/carbon is being used and where there is scope for reducing it through their own actions or with the support of management. Management, at all levels, has the responsibility of creating a culture of energy efficient behaviour as well as ensuring there are adequate resources available to meet the NHS carbon reduction and budget saving targets.

EcoWarriors network

It is intended to recruit a network of EcoWarriors within each property. It is hoped that people who are aware of climate change issues and are motivated to take some action 'to do their bit' will volunteer to carry out this role. The role is non onerous and should only take up 3-4 hours per month.

Knowledge & Experience

A keen interest in environmental matters such as energy issues, sustainability and recycling is helpful but not essential. They should possess a care for the development of the organisation and a willingness to help save the environment and money. The EcoWarrior will act as a resource and role model in their designated area of work and will liaise with the EcoSmart campaign manager.

Remit:
• Come together as a community of EcoWarriors to encourage, motivate and share success stories from within their buildings
• Work with colleagues to encourage good practice in carbon management, e.g. switching lights, computers and printers off when not needed
• Identify areas of waste and make suggestions on ways of reducing it
• Ensure environmental matters are included in team meetings
• Assist with putting up posters, stickers and other promotional material
• Have the ability to offer advice on sustainability issues or to be used as a middle man pointing others to the correct source of information.

3. Access to information

Information is a key tool in making the campaign work for everyone no matter what level. This section will help you locate some useful resources, giving you ideas for development of the campaign. These resources will arm you with the knowledge and the tools you require to help others by answering questions or simply pointing them in the correct direction.

Knowledge is power, but don't be afraid to ask one of the EcoSmart team if you need a bit more help!!

Staffnet

Over the coming months we will be expanding the Staffnet sustainability site and creating a specific area for the EcoSmart awareness campaign. Periodically we will post documents full of helpful hints and tips, awareness raising materials, competitions and suggestions of how to keep the momentum up throughout the campaign.

Internet

As all office based workers have access to the internet we have provided an appendix of useful websites. These are on a variety of topics across the energy and carbon spectrum but provide helpful advice to aid in the campaign dissemination.

Utility supplier

Speaking to your power supplier for your own home can give you lots of ideas which you can bring into the work place. Most suppliers can proved a variety of helpful information about how to use your power more wisely and where savings can be made. They can also provide you with smart monitors which you can hook up to your home and see exactly when and where you are using energy. This information can help you understand where you use energy within your working life allowing you to save energy at work where you can.

4. Where to start

This section provides ideas to kick start your EcoWarriors role. These examples are only suggestions and by no means a definitive list. That said, a positive start could include a notice board in your area of work and an item on your team meeting agenda. Feel free to personalise your strategy and be as creative as you can be with your ideas:

Personal Pledge

Team members who are not very environmentally aware can be encouraged to contribute by 'pledging' an activity they do not already undertake. For example they could be encouraged to turn off their computer at night or their monitor off during meetings, perhaps starting to recycle paper. This is a good opportunity to introduce the idea of environmental awareness into your work place and can help to build a culture of change. Would a light hearted display encourage people to keep the change up or perhaps a treat as a reward after a few weeks or months as a 'well done' bonus?

Building a bag tree

Glasgow Royal Infirmary and Victoria Hospital are two examples of buildings which have good access to shopping facilities. While this is very handy, it poses a number of environmental problems with regards to plastic shopping bags which are used and then binned almost straight away. A good idea is to create a bag tree where by people can reuse carrier bags if they are made available for the whole team to use. Perhaps locate this at the exit so people are reminded on their way to the shops?

The 'Buddy Up' System

A buddy system is a good way to introduce those who are not so environmentally aware to commit to environmental activities in their area of work. Ask people to choose a team member to work with and use the buddy system to trial different aspects of the campaign to see which ones have the best results.

Take a Test Drive

Undertaking a quick, honest and anonymous team survey will help you identify problem areas and give you a better understanding of the team awareness and the issues which affect them on a daily basis. The ideas and issues can be discussed at a team meeting which can help strengthen arguments for change. Ideas for questions are:
• Can everyone readily access a recycling bin and are there enough?
• Is natural light blocked by furniture?
• Are individuals unnecessarily using desk lamps?
• How many kettles/toasters/fridges are there and are these all necessary?

Team meeting agenda

A five minute slot at every team meeting gives you the perfect opportunity to update your colleagues on progress, highlight areas for action, and ask for feedback on what they feel is most important.

5. Key action areas

Energy

Energy Efficiency

1. Switch off your lights at night! Share the responsibility and encourage your colleagues to turn off the lights if they are the last person to leave the office.

2. Switch off your computer at lunchtime or if you're away from your desk for any length of time (and turn your monitor off if away for more than 10 minutes)

3. Keep doors and windows closed when the heating is on to prevent valuable heat escaping.

4. Try not to use personal electric heaters. They are very inefficient and only heat a small space for a short period of time.

5. Remember to unplug mobile phone chargers when not using them.

Did you know…..

• NHS Greater Glasgow and Clyde spent nearly £14.5 million on its electricity bill in 2010/11
• The electricity consumption of Gartnavel General Hospital during 2010/2011 was 21,028,596 kWh
• NHS Greater Glasgow and Clyde emitted over 133,000 tonnes of CO_2 during 2012/2013 through its consumption of gas and electricity.

A large proportion of the Board's electricity and gas is produced by burning fossil fuels. These fuels are finite resources and will become more expensive as they grow scarcer. Ultimately we will exhaust our supplies and this is why we need to become much more efficient in their use and consider other means of energy production (e.g. renewable energy (some examples of renewable energy can be found in appendix 6)). In addition, fossil fuels are polluting so the more efficiently we use them, the less air pollution is created. So, whether considering resource scarcity, cost or pollution, the more efficient we are in our energy use, the greater the environmental and financial benefits will be.

This alone is a sufficient reason for taking action but the overwhelmingly important reason for limiting energy demand is that there is a clear link between man-made CO_2 emissions and our changing climate. The 4th UN intergovernmental Panel on Climate Change report states the debate is over, global warming is 'unequivocal' and 'very likely' to be caused by greenhouse gas emissions from human activities.

So where to we start. There are a number of key areas within the heading of energy efficiency which can be targeted for reductions

NHS Greater Glasgow and Clyde best practice

Heating and cooling

Health care facilities are busy places with people and furniture in constant movement. Always ensure that when items are moved that they do not block heating or cooling emitters. By keeping these areas clear this will allow the heated air to move freely around the area

Be careful that areas are not over heated. Understanding that patients need to be kept warm is a standard however this should not be miss understood to mean that the higher the temperature the

better for the patient. Hot and stuffy waiting areas can promote microbial growth which is not good for the patients or the staff.

The Carbon Trust recommends that buildings should have a dead band for their heating and cooling arrangements. This means that buildings should not be heated above 19°C by mechanical heating systems or cooled below 24°C by artificial air conditioning.
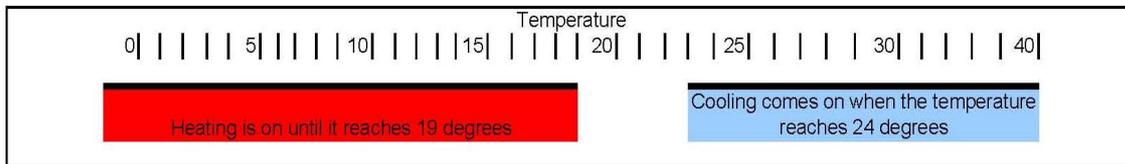
Specifically the Carbon Trust has made recommendations for specific areas in the Health care profession:

LOCATION	TEMPERATURE BAND
Circulation Spaces	19-24
Consulting and treatment rooms	22-24
Nursing Stations	19-22

Key areas to look out for during your daily routine which can lead to heat loss are:
1. Areas where the doors have been left/wedged open. Not only does this create draughts but it can lead to uncomfortable conditions in pocket areas.
2. Are there areas you see on a regular basis which are no longer used? If so check as you are walking past if they are still heated as normal this heating could potentially be either turned off altogether or reduced to a frost protection factor.

IT equipment

A large proportion of the NHS Greater Glasgow and Clyde electricity costs come from the office equipment we use as a daily necessity. Our PC's and their associated monitors consume the highest proportion of electricity out of all the office equipment.

Even though this equipment provides a key function during the working day, overnight and at weekends a large proportion of this equipment is not required and so can be switched off.

Proportion of total energy used by office equipment in a small office


■	PC's
■	Monitors
□	Printers
□	Photocopiers
■	Fax Machines
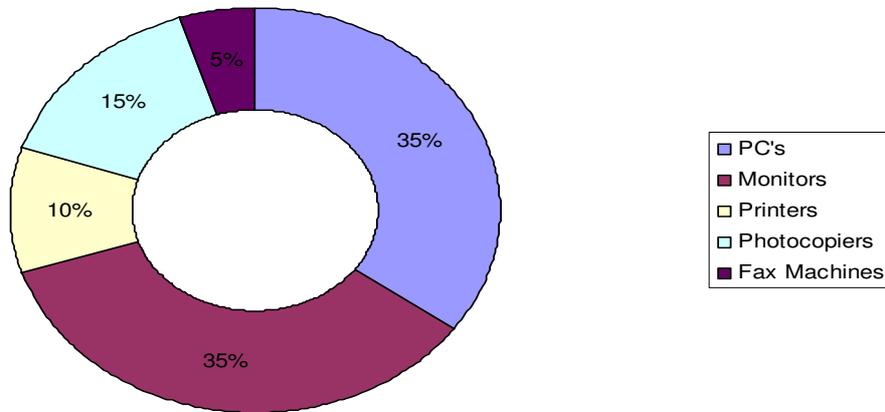
Lighting

Blinds are found in front of nearly every window across the Board portfolio. Blinds have a number of functions and so can be used as an important tool in helping reduce energy consumption in Board buildings. During the winter 26% of heat loss from a building fabric is through the windows so using the blinds in the most appropriate way can reduce this amount considerably. Shutting blinds during dark and overcast winter days can act as a form of secondary glazing reducing the cold and draughts getting into the room. On bright and sunny winter days blinds angled correctly can increase the warmth in the space by utilising solar gain but angling draughts away. Similarly during the summer time blinds can be used to the advantage of the building occupiers to keep the heat under control. If spaces are faced with soaring temperatures during the summer months, keeping blinds closed will reduce solar glare, keeping the area cooler throughout the day. Although the following picture depicts an office environment the idea can replicated into any area throughout the estate.

BENEFITS OF BLINDS

AIDS LIGHT PENETRATION TO ROOM CENTRES

DECREASE GLARE FROM BRIGHT SUNLIGHT

HELPS UTILISE NATURAL DAYLIGHT

HELPS KEEP AREAS COOLER

DIFFUSE OVERHEAD LIGHT

DIRECT SUNLIGHT
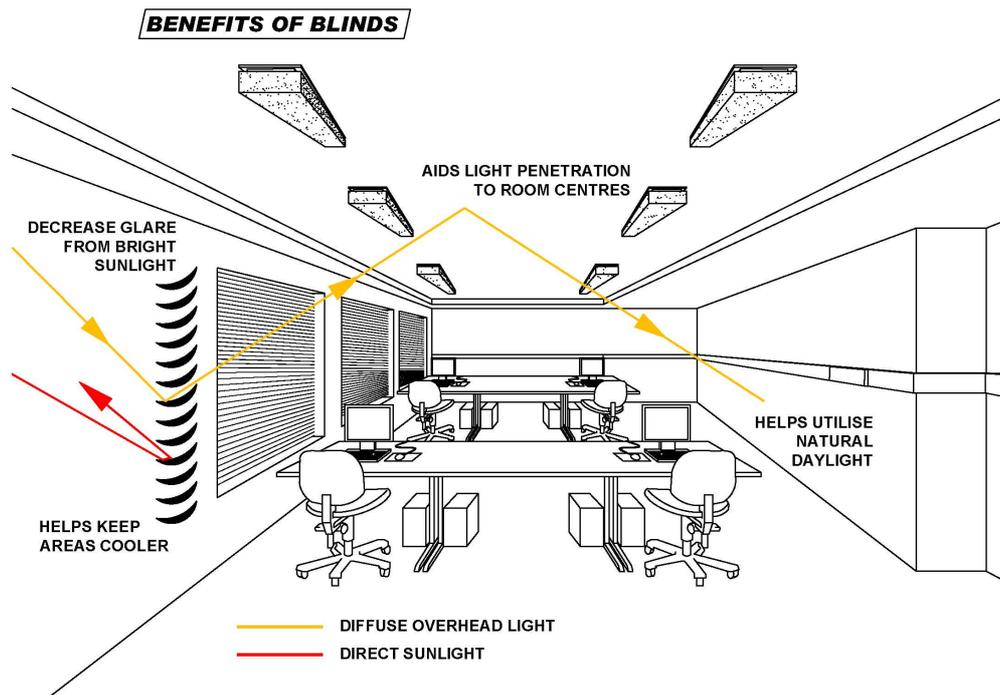
6. Water

Water Conservation

1. Report dripping taps or leaks promptly to your Estates manager or Maintenance team

2. Encourage your colleagues to only fill the kettle with the amount of water needed.

3. Don't use water from a water cooler to fill your kettle: it takes longer to boil and as a result uses more energy.

4. Use a bowl or plug the sink rather than using a running tap to wash up.

5. Turn the tap off while soaping your hands to avoid wasting water.

Did you know ……….

• NHS Greater Glasgow and Clyde spent £4 million on metered and unmetered water during financial year 2012/13
• The water consumption the Boards portfolio during financial year 2012/13 was 1.36 million cubic meters of water.
• 95% of all the metered water into a Doctors surgery or standard building leaves that building as waste water and is therefore charged twice.

The amount of water that we use is determined not only by our water system (e.g., water pressure variations) and the technologies that we use (e.g., high volume showerheads), but also by our interaction with technologies (e.g., shower duration and frequency) and our habits (like turning the tap off whilst brushing teeth). Water supply and demand is a complicated system, and we're only beginning to understand the role of people in it. On average each person in the UK uses approximately 150 litres of water per day and as a result a number of locations across the UK now suffer from drought. These droughts impact on the viability of a number of services and it is anticipated that as weather patterns change and global warming takes hold this research will continue to face increasing pressure as demands grow.

This chart shows how the average person uses water in the home. At work the consumption pattern has some similarities whereby toilets and washing are by far the largest consumer.

How waster is used in the home

- Toilet flusing — 30%
- personal washing - baths and taps — 21%
- Personal washing - showers — 12%
- Clothes washing — 13%
- Washing up — 8%
- Outdoor — 7%
- Other — 5%
- Drinking — 4%
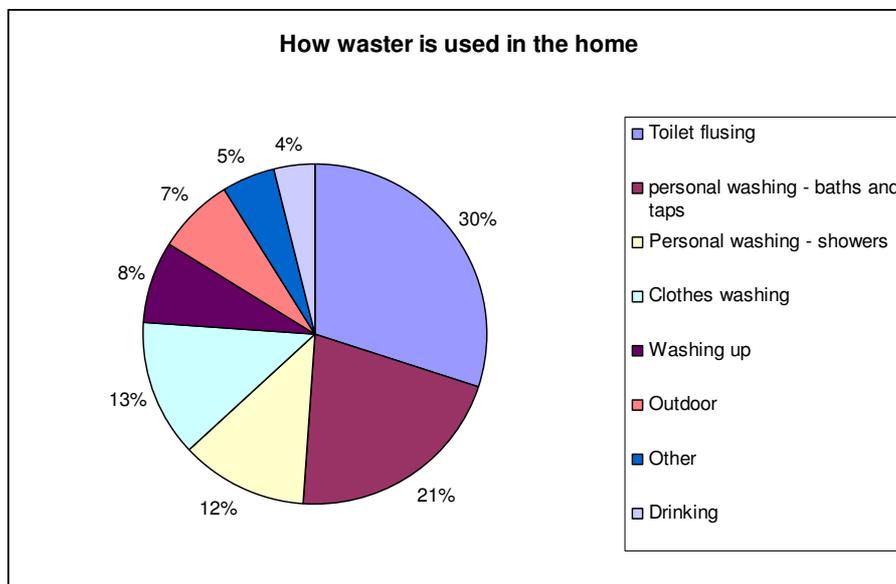
NHS Greater Glasgow and Clyde Best Practice

To reduce the impact of increasing water shortages across the UK along with the financial burden on NHS GGC we will continue to develop our water reduction mind set. We have been and will continue to implement the following strategies:

Leakage detection and repair

NHS Greater Glasgow and Clyde has a rolling programme of detecting leaks and their repairs throughout the Board portfolio of buildings. By undertaking simple meter reading checks or locating pooling water we can establish if there is a leak, where it is and how it can be fixed. A simple leaking tap can waste up to 5500 litres per year so the sooner these are spotted and fixed the more money can be saved.

Water reduction through Urinal Controls

Urinal controls are a key way to reduce the consumption of water. These controls are fitted to the supply pipe on the male urinal cisterns. The urinal controller can be programmed to provide optimum flushing profiles. The flush rate can be set to a maximum rate between four flushes per hour and once per hour during periods of occupation. This flush cycle is activated via an occupancy sensor. In addition to this normal flush rate the system allows a hygiene flush once over 12 hours. A urinal controller is an intelligent solution and has been proven to significantly reduce the water consumption and cost whilst maintaining levels of hygiene at all times.

Push and sensor taps

In a number of our new buildings and building refurbishments we have been installing clever taps which turn off after a short burst of water. These taps are either push button taps or have either levers or sensors. These taps allow an adequate amount of water for each hand washing cycle to ensure that no water is wasted. These taps reduce the water which could potentially be wasted by people simply leaving the tap running after they have used it. Each push tap can save approximately £30 per year so by installing these throughout the estate we are saving money and not reducing the service.

7. Waste

Waste Reduction

1. Rather than printing, use shared drives or share point to post documents and let intended recipients know by email.

2. Ensure that only clinical waste is put in clinical waste bags.

3. Does everyone need a copy of the agenda minutes? Be clear who is providing the copies at your meetings and ask delegates to share if possible. Would a copy on a screen suffice?

4. All paper from any activity is able to be put in the domestic waste stream. This includes any surgical wrapping which has not been contaminated.

5. Update your distributions lists regularly to avoid over-producing information.

Did you know…..

- All NHS Greater Glasgow and Clyde domestic waste is segregated off site for recycling by our waste removal company.
- NHS Greater Glasgow and Clyde currently disposes of approximately 7500 tonnes of domestic waste each year.
- It is 4 times more expensive to dispose of clinical waste as it is to dispose of domestic waste.

Waste represents a loss of materials – it is better to reduce our use of materials and re-use or recycle materials rather than disposing of them as waste where they can cause pollution. Many types of waste emit methane (a very powerful greenhouse gas – over 20 times stronger than CO_2), and CO_2 as they decompose in landfill sites. To reduce these emissions it is necessary to reduce the amount of waste going to landfill – this can be done by reducing the amount of materials used in the first place, re-using materials where possible and recycling material instead of discarding it as rubbish.

Staff can play their part by following the waste hierarchy:

- Prevention   Ideal situation
- Minimisation
- Reuse
- Recycle
- Energy Recovery
- Disposal   Last resort
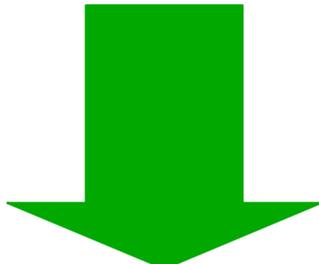
Types of waste

Throughout the NHS there are two commonly recognised types of waste; our everyday domestic waste and clinical waste. Domestic waste arises from the everyday delivery of healthcare in both clinical and non clinical areas. This type of waste includes a variety of dry mix recyclables, organic and food waste and mixed residual municipal waste. This type of waste has a minimal risk of infectiousness or dangers as a hazardous substance. Clinical waste includes waste which comes from our work providing clinical health care. This waste is defined by its hazardous nature.

Each of these types of waste is dealt with in different ways on site and its disposal requirements. The domestic waste collected across the board constitutes approximately 60% of all out waste over the year. The majority of the domestic waste is everyday items such as paper, plastics and tins. This waste is collected and compacted onsite to decrease its size these decreasing the number of lorry journeys and increasing the efficiency of the transportation process. Once this waste has been collected by our waste removal company it is taken to a specialist plant where al the waste is mechanically separated and split according to type and recyclable content. Approximately 80% of this waste collected is recycled. The percentage is 10% higher than the current Government set requirements. The remaining waste can be split into two categories. The food and organic components of the waste is extracted and sent to Anaerobic Digestion plants on the outskirts of Glasgow. The AD process generates fuel in either gas or electricity form and is therefore not wasted. The remaining waste is not deemed suitable for either of the two previous processes and therefore is generally sold to heavy industry as 'refuse delivered fuel'. Through this current contract we pay no landfill tax for any of our domestic waste.

Clinical waste is dealt with in a very different way due to its nature. There are two common streams of clinical waste. The first of these are commonly known as 'orange bagged' clinical waste. This waste is removed by the contractor and taken to a heat treatment plant. The items of waste are then cooked at over 130 degrees to ensure that the material is non hazardous. This material is not sorted during any part of this process so all materials in this clinical waste stream are treated in the same way as hazardous to health. Once cooked this material is sent directly to landfill. This type of clinical waste contributes around 5000 tonnes of material to landfill each year. The final stream of waste is that which is of a hazardous nature and have to be incinerated. There are four different types; anatomical waste, pharmaceutical waste, cytotoxic waste and radioactive waste. This waste only constitutes around 1-2% of the total waste produced by the board.

Prevention

The most important question we can ask ourselves when it comes to waste is 'do I really need to use this?' The whole waste hierarchy is built on the idea of prevention of waste in the first instance. Simple changes in behaviour can make large scale differences. For example using 2 paper towels to dry hands instead of 3 or 4 can ultimately half the consumption of this single item. By making the conscious choice not to use something is a very strong message to others of commitment to waste prevention. Prevention of the creation of waste is a two fold saving, firstly by making that conscious decision to not use an item you are saving carbon/energy and money as the product does not have the purchased or produced. The second saving is through waste removal. There are very real costs which are associated with the removal of waste. Currently the board spends close to £2.5 million on the removal of waste from NHS GGC sites. By preventing waste hit these waste streams we are creating an automatic saving.

Minimisation

Key for minimisation of waste is ensuring you are only using the required amount of an item and when it is disposed of it is done so in the correct place. Staff can reduce the amount of material used in the first place (and, hence, the amount of waste that this material could become later on).

• Paper - instead of printing documents use electronic documents - these can be put on the intranet or e-mailed. When something needs to be printed make sure the layout (margins, spacing, etc.) makes full use of the space available. Before printing spell check the document and then print it back to back. Also think about who needs hard copy documents - can agendas and meetings be

shared? Keep distribution lists up to date and post documents for meeting on specific sites on the intranet - this should minimise unnecessary printing of documents. All this will reduce the amount of paper used.

• Cups - how often have you used a disposable cup once then thrown it in the bin? This is a very inefficient use of materials and generates waste. Instead re-use a non-disposable cup or mug.

• How often have you ordered something that has come with a great deal of packaging? Have you thought about contacting the supplier to ask that the amount of packaging is reduced?

The benefits to staff, the Board and the wider community are clear – reduced material use, reduced costs, and reduced pollution. There will be many other opportunities across the Board to reduce the amount of materials used and, therefore, the amount of waste generated.

Re-use

Staff can make a big reduction in waste generation by re-using items.

• Instead of throwing out boxes (such as those that printer paper comes in) re-use them for storage, parcels, etc.

• Instead of throwing out an envelope put a label over the address and write a new address.

• Instead of throwing out unwanted furniture, etc. e-mail colleagues to see if they have a use for it.

• Keep packaging from a delivery - it can be used as packaging again.

• Paper that has been used but is still blank on one side can be made into scrap paper pads.

Again there will be many other opportunities to re-use goods and materials. The more re-use there is the less new materials need to be created and purchased and the less waste will be produced.

Recycle

Despite reducing what we use and re-using materials some waste may still be generated – where possible as much of this should be recycled. Currently across the board all the recycling is done by the waste removal company off site in a specialist plant location in Blochairn so there is no need to take recyclables home to dispose of. At home however there are still opportunities to recycle. If you don't already have a recycling bin from your local council get in touch with the Waste services department and they will be able to provide you with one. Recycling at home is easy to do, by starting with the obvious items such as cardboard, newspapers, plastic drinks bottles and milk cartons and tin cans you are well on your way to becoming more sustainable at home. Within your homes and families they can help take a lead in the community in terms of reducing the amount of waste produced, increasing the amount of waste recycled and reducing the amount of waste that goes to landfill.

Energy Recovery

NHS GGC plays a part in energy recovery through our waste removal contractor. All our food and organic waste is sent to an anaerobic digestion plant on the outskirts of the city. This material is used to produce either gas or the gas burned to produce electricity. In the future this process will become more prominent in our daily lives as we start to recycle food waste both at home and in the future at work.

Disposal

Disposal should always be a last resort when it comes to waste. If an item has to be disposed of to landfill then we should always check that it can not be reused or recycled first. By sending items to land fill we are adding to the creating of pollutant gasses which will harm the environment.

Currently at GGC only our orange bagged clinical waste goes to landfill due to its specialist nature. We can do more to ensure that only the very specialist waste required to be disposed of in orange bags is actually sent to landfill. By ensuring that any other waste which can be disposed of in another way is disposed of correctly will reduced the amount which we currently send to landfill.

8. Travel

Green Travel

1. Encourage 'conference calls' or WebEx to avoid unnecessary travel to meetings.

2. Explore car sharing with other commuters to offices.

3. Why not use the shuttle bus service if travelling between hospitals.

4. Pin local public transport timetables and cycling maps to your team notice board.

5. There are opportunities to work from home or an office nearer your home, even one day a fortnight would make a big difference.

Did you know….

• NHS Greater Glasgow and Clyde employees circa 45,000 staff.
• The price of petrol has risen 37.5 % and diesel by 41.4% from January 2007 to January 2012 (and has risen further since January 2012).
• NHS GGC current has around 350 commercial vehicles in use at any one time.

There is a significant environmental impact associated with staff travel through both commuting and business travel. Petrol and diesel cars emit significant amounts of carbon dioxide and therefore contribute to the greenhouse effect. They also emit other pollutants including particulates, sulphur and nitrogen oxides which have a negative impact on local air quality within the Greater Glasgow and Clyde area.

Staff can reduce their environmental impact associated with their travel to and from work. The following can help:
• Instead of driving to work is walking or cycling an option?
• Use public transport to get to work.
• Car share - the Board has a car share scheme - see https://westscotnhs.liftshare.com

All these options can reduce the environmental impact of staff commuting and save staff money. Some staff may also have the possibility of working from home on one or more days per week which would eliminate all pollution associated with their commuting on those days. A number of Hospitals and Health Centres have specific areas where you can lock your bike away safely so using this method of travel is a viable and safe option, not only will you get fitter by using a bike to commute you will be saving carbon by not using a mode of transport which burns fossil fuels.

Commercial Fleet

As the services we provide as an NHS become more centralised there is an ever increasing requirement for a commercial fleet to be held by the Board. Currently our commercial fleet is made up of around 350 vehicles varying from large vans to agricultural vehicles and vary is size, age, fuel type and cost. They produce on average 1700 tonnes of CO2 each year. A number of these vehicles have a very specific function and have specific equipment installed to ensure the services they provide are fast and efficient. These vehicles are currently utilised by around 40 different departments but the majority are used by the Transport sections across a number of sites.

The majority of the current commercial fleet are fuelled by Diesel which provide cheap running costs and are more fuel efficient. Unfortunately the CO_2 emissions from Diesel are in fact higher than that from petrol vehicles. Careful consideration should be taken when deciding if a vehicle is required for your department to ensure that you contribute the minimal amount of CO_2 to the overall NHS GGC carbon footprint.

In terms of travel in connection with Board work, there are many ways staff can reduce their environmental impact.

The first question to ask is "do I really need to travel?" It may be possible to have a telephone conservation instead of a face-to-face meeting. Conference calling or WebEx is a much more sustainable way to have a meeting which a number of people. The application form for these can be downloaded from the address below and should be submitted to the telecommunications department.
http://www.staffnet.ggc.scot.nhs.uk/Acute/Facilities/Telecommunications/Pages/ConferenceCalls.aspx

If staff need to travel there are ways to reduce the environmental impact of the travel (and save the Board money):
• It may be possible to attend a meeting or visit a site as part of a commuting trip to/from the office.
• It may be possible to combine trips - instead of travelling from an office to a meeting site and then back and then again later in the day (or week), travel to another meeting/site can both be combined into the one trip. This will save overall mileage and time and reducing the amount of pollution.
• There is currently a shuttle bus service which runs from 07.35 at certain hospital and finishes around 1700. The timetable for these services can be found here http://www.staffnet.ggc.scot.nhs.uk/Info%20Centre/Timetables/Shuttle%20Bus%20Service/Pages/default.aspx
• Public transport may be a cost-effective and time-efficient method of travel with the ability to work when travelling and no parking charges being added benefits.
• If the most appropriate method of transport is a car then try to ensure as few cars as possible are used e.g. if two or more people are attending a meeting or visiting a site try to share the one car.
• If you are looking to order a vehicle for your department then it is worth remembering that certain petrol cars have low emissions and electric cars have no emissions at point of use (and low emissions in terms of CO^2 when electricity used by the car is considered).

Agile Working

The idea of Agile working us being introduced across NHS GGC. Over the coming months you will see a roll out of initiatives which will make out working lives more flexible allowing us to provide a more modern service. These initiatives go a long way in helping reduce out Carbon footprint. Examples such as working from Home and hot desking/touchdown stations will reduce the number of miles travelled by employees. These areas are being made more accommodating ensuring that changing to a more agile working style is as easy as possible. For example there are 17 wireless network locations where you can pick up the GGC network from your laptop. More information on all the aspects of Agile Working can be found here:
http://www.staffnet.ggc.scot.nhs.uk/Corporate%20Services/Agile/Pages/CorporateServices_Agile Working_EN_240212.aspx

EcoWarriors can do plenty to encourage green travel - encouraging staff to car share, asking staff to think carefully about their transport use and providing them with information on local bus and rail services can all assist in reducing the emissions associated with staff commuting and business travel.

NHS Greater Glasgow and Clyde have a number of different ways to help you make the most carbon friendly choice for your commute. As an NHS employee you are eligible for the following:

- Cycle to Work Scheme - Purchase a bike and/or equipment through the cycle to work salary sacrifice scheme and save between 20% & 45%.
- Scotrail Annual Ticket/Calmac annual ticket – These ticket schemes offer staff the opportunity to purchase an Annual Ticket and repay through their salary.
- Annual SPT Zonecards - The Annual Zonecard Scheme offers staff the opportunity to purchase an Annual Zonecard and repay through their salary. Strathclyde Passenger Transport (SPT) has also agreed to waive the administration charge saving yet more money.

More information on each of these and many other incentives can be found here http://www.staffnet.ggc.scot.nhs.uk/Corporate%20Services/SupportServices/Transport/Pages/TransportStaffBenefits.aspx

9. Legislation

All NHS boards are governed by a number of different legislative requirements when it comes to sustainability and energy. These pieces of legislation come from different places and although carry varying amounts of importance they are all monitored, tracked and reported on.

The first of these is the Climate Change (Scotland) Act 2009 (CCSA). Born from the Kyoto Protocol the CCSA provides Scotland with targets in CO_2 reduction. The overall target was broken into two stages ensuring that the actions of CO_2 reduction were achieved in stages. These targets are 42% reduction by 2020 with an overall reduction in CO_2 emissions of 80% by 2050.

There are a set of national performance measures known as HEAT targets, and these are designed to focus NHS Scotland on working with its partners to deliver services that will support the Scottish Government's longer term outcomes. HEAT stands for Health Improvement; Efficiency and Governance; Access to Services; and Treatment appropriate to individuals. The specific target under the Efficiency and Governance banner is for NHS Scotland is to reduce CO_2 emissions for oil, gas, butane and propane usage annually by 3% to 2014/15; and NHS Scotland to continue to reduce energy consumption annually by 1% to 2014/15. These 5 year targets were derived to ensure that all NHS Scotland assisted in meeting the Climate Change (Scotland) Act 2009 targets mentioned above.

In April 2006, the Scottish Executive Health Department issued HDL 2006(21) detailing a new Environmental Policy for NHSScotland, Under this policy all NHSScotland Bodies are expected to utilise Corporate Greencode as their Environmental Management System (EMS) to comply with environmental statutes and mandates. Under this EMS there are 5 policy statements pertaining to different areas of environmental management which have been recognised as important to ensuring sustainability. In 2010 GGC decided that the pilot for the corporate green code would be the Glasgow Royal Infirmary. The lessons learnt whilst trialling this site have been recognised and adopted to ensure a smooth process for the roll out to the rest of the estates.

In 2009 NHS GGC in conjunction with the Carbon Trust developed the Carbon Management plan. This Carbon Management plan detailed the saving which GGC aim to achieve between 2009 and 2016. The plan states that our anticipated CO_2 saving will be 26% across the entire board estate. This plan looks a number of areas in which savings can be made from transport to energy and better estate management.

10. Appendices

At the end of this handbook you will find a number of pages with helpful ideas, checklists and contact details in case you are ever stuck or need a few ideas to get your team motivated:

1. **End of night checklist**

If you work in an environment which closes for the evening, before you leave, have a walk through your office. Check to see if things have been left on and note these down. Can lights be turned off? Has the printer been turned off? Have people left computer screens on? If any of these apply you can act there and then. Turning off a screen will not harm any ongoing work on someone's PC but will save energy overnight. If at any point you are unsure just take a note of the situation and either have a quiet word with the people it concerns the next morning or make it a general discussion section at the next team meeting.

2. **Implementation log**

This log will help you keep track of your changes and implemented ideas. You can make notes about actions you have taken, whether these have been successful or not and things which you would change for the next time. Have you spotted reception lights which are on but do not require to be? Have people noticed the change? Is this making any savings? The log can be discussed at team meetings and is a helpful way to motivate people by showing them progress.

3. **Energy Walk Round checklist**

This survey sheet can be used on a less frequent basis and will provide you a more detailed look at the workings of the building or area you are EcoWarrior for. This survey can highlight areas which are faulty and require to be reported or areas which are heated and yet lie vacant. Doing this survey on a monthly or quarterly basis will allow you to compare what has previously happened or what has taken place since your last survey.

4. **Points of contact**

If you are ever struggling for ideas or are getting negative feedback from other staff members or are even lacking motivation yourself give one of the team a call. Talking with other EcoWarriors can help develop ideas or utilising already tried and tested ideas in your working environment. Failing that speak to one of the campaign team they are always happy to help and suggest ideas.

5. **Websites for further information**

This area will help you see the wealth of information which is available for you too look through and gain some additional knowledge. There is plenty out there so don't be afraid to check it out. Anything you need clarifying don't hesitate to contact one of the team.

6. **Renewable energy systems**

Here are some examples of renewable energy systems along with there advantages and disadvantages.

1. End of night checklist

NAME _____

DATE _____

TIME _____

LOCATION_____

ITEM UNDER ISSUE	ISSUE	ADJUSTMENTS MADE IMMEDIATELY	INTERNAL LOCATION

2. Implementations Log

MEASURE IMPLEMENTED	DATE	SUCCESS/ADJUSTMENT	LESSONS LEARNT

3**. Energy walk around checklist**.　　　　DATE_____

COMPLETED BY_____

TOPIC	CHECKED	FURTHER ACTION	COMMENTS
HEATING			
Are there staff complaints about the temperature?			
Are portable heaters being used unnecessarily?			
Are heaters and air conditioning units being used in the same areas?			
Do all areas have the same heating requirements?			
Are their obstructions in front of areas?			
Are windows/door open when heating/air conditioning is on?			
Are their any draughts from windows or doors?			
Lighting			
Are lights switched off whet here is enough sunlight?			
Are lights switched off when the room is empty?			
Are any old fashioned light bulbs still in use?			
Are switches arranged and			

labelled conveniently?			
Office areas			
Are computers left on over night?			
Are monitors switched off when not in use?			
Are photocopiers positioned in air conditioned areas?			
Are printers and photocopiers left on over night?			
Water			
Are there any dripping taps or leaking taps?			
Do you notice any large pools of water outside the building?			
Do the urinals run constantly or do they have a control?			
Waste			
Does only clinical waste go in clinical waste bags?			
Are there items which are able to be reused?			

4. Points of Contact

Gillian Brown
Energy Manager

Tel: 0141 314 6994
Email: Gillian.brown2@ggc.scot.nhs.uk

Address: Estates Department
      Royal Alexandra Hospital
      Corsebar Road
      Paisley
      PA2 9PN

5. Websites for further information

http://www.carbontrust.com/
An independent consultant who specialises in public sector energy awareness and management. Previously run by the Scottish Government you will find a host of publications and guidance documents to use as background reading or reference.

http://www.resourceefficientscotland.com/
We help organisations across Scotland save money by using resources more efficiently. We provide free, specialist advice and on-site support to help decision makers in business, public and third-sector organisations cut their energy, water and raw material costs.

http://www.zerowastescotland.org.uk/
Zero Waste Scotland delivers a range of support programmes, campaigns and other interventions to help people and organisations on the journey to Zero Waste.

http://www.energysavingtrust.org.uk/scotland/Organisations
The Energy Savings Trust is an organisation who specialise in domestic energy management. This site can provide helpful hints and tips to reduce your energy bills at home.

http://www.scotland.gov.uk/Topics/Environment
The Scottish Government website which provides high level information on what the Government is doing with regards to Sustainability.

https://www.gov.uk/government/organisations/department-of-energy-climate-change
The UK Government Department of Energy and Climate Change website. This website provides information on the UK Governments approach to the Sustainability agenda.

http://www.sepa.org.uk/
Scottish Environmental Protection Agency. SEPA control all environmental management issues throughout Scotland. A Government body who can provide information on natural issues and legislation.

http://www.wrap.org.uk/
WRAP works to help people recycle more and waste less, both at home and at work, and offers economic as well as environmental benefits

http://www.keepscotlandbeautiful.org/sustainability-climate-change/sustainable-scotland-network
The Sustainable Scotland Network (SSN) supports public sector action on sustainable development, focusing on climate change and sustainable procurement. Building on over a decade's work with local government, SSN now gives its support to the whole Scottish public sector

www.carbontrust.co.uk

www.ciria.org

www.communities.gov.uk

www.defra.gov.uk

www.earthobservatory.nasa.gov

www.ecospecifier.org

www.energysavingtrust.org.uk

www.envirowise.gov.uk

www.forumforthefuture.org.uk

www.greenpeace.org.uk

www.hockertonhousingproject.org.uk

www.iea.org

www.npr.org

www.oecd.org

www.oneplanetliving.org

www.secbe.org.uk

www.sustainablehouse.com.au

www.visionlearning.com

www.weatherquestions.com

www.wwf.org.uk

http://www.seai.ie/Power_of_One/

http://www.sustainabilitydictionary.com/

6. Renewable Energy Systems

Energy/Source	Technology	Advantages	Disadvantages
Biomass/Bio-diesel	Heating	• Based on existing proven technologies • Provides both heating and hot water • Second generation uses waste biomass for fuel, not primary agricultural land.	• Security of fuel supply • Cost of fuel • Delivery of fuel • First generation bio fuels now largely discredited • Agricultural land used for fuel
	Combined Heat and Power	• Greater efficiency	• Not currently reliable in small schemes • Needs appropriate heat load to be efficient
Solar	Hot Water Panels	• Proven Technologies • Straightforward to retrofit • Cost effective • Low maintenance • No emissions	• Size of roof space required, particularly in flats • Intermittent daytime supply
	Photovoltaic's (PV)	• Generates electricity • Building integrates • No emissions • No running costs • Requirement for materials	• Cost • Embodied energy • Intermittent daytime supply
Wind	Wind Turbine	• Cost effective • Proven technology • Can generate significant amount of electricity • Visible statement of pride • No emissions	• Achieving planning permission • Noise • Virtual intrusion • Vibration • Intermittent supply
	Building integrated wind turbine	• Cost • Requires minimal space	• Stress on building • Decrease efficiency of turbine in built up area
Ground Source Heat	Heating (Potentially	• Works in town	• Poor coefficient of

Pump	hot water)	• Cost • Good with under floor heating	performance (CoP) if not designed well • Poor CoP if also providing hot water • Requires a pump to operate, often powered by non-renewable energy.