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CI/SfB (68.54) X (T6)	

# Greyflow®

The sustainable fire sprinkler system.  
Low maintenance, maximum reliability.



The Homesafe range of Greyflow® environmental safety systems provide plentiful clean, reclaimed water, either rainwater harvested or recycled and filtered to the highest level required.

Additionally, they protect from risk of fire. For both needs, occupants are assured of supply.



An excellent building design option for making best use of resources and the least harmful environmental impact.

## SUSTAINABILITY

Care for the environment is a key responsibility for specifiers. With regard to promoting sustainable development, the Greyflow® system is an excellent solution.

Where Homesafe is involved at a project's early stages, we can make use of other water engineering elements within the development, such as attenuation tanks.

The Greyflow® system is environmentally friendly on three levels:

- It harvests rainwater for domestic use, garden irrigation and fire sprinkler protection. Property designed in this way impacts less on scarce water resources. Approximately 45% of our water consumption need NOT be of drinking water quality.
- It protects the mains water supply from backflow of the stagnant water which rests in many other types of sprinkler system.
- Thirdly, and this point applies to ALL fire sprinkler systems: the system is inherently eco-friendly. In the event of fire, not only is less water used (typically 10-20 times less water than the Fire Service would need to apply), but also, by acting early on, the sprinkler system minimises the polluting effects of the fire, whether from smoke or fire service runoff.



Reclaimed water systems can play a part in water conservation by reducing the amount of mains supply water used in the home and commercial buildings.

Typically, Greyflow® environmental safety systems are specified where:

- fire protection is required or preferred
- mains water supply cannot be assured
- the ongoing cost of water usage is a consideration
- environmental and sustainability issues are key motivators

## APPLICATIONS

The Greyflow® range of systems is designed and installed under licence and are suitable for use in:

- Nursing & Care Homes
- Schools
- Houses
- Apartment & Residential Blocks
- Hotels



An underground tank need not encroach on useable space

## WATER STANDARDS

Greyflow® systems are designed and installed in compliance with the **Water Supply (Water Fittings) Regulations 1999** and Building Regulations 2000 for England and Wales or their equivalents for Scotland and Northern Ireland. The systems comply with **BS EN 1717**. Compliant to **BS 8515** Code of Practice for the Installation of Rainwater Harvesting Systems.

## FIRE SPRINKLER STANDARDS

Greyflow® systems will meet requirements of:

**BS 9251: 2005** for both residential and domestic occupancies; or, **NFPA 13R / NFPA 13D** for domestic or residential occupancies respectively; or **BS EN 12845** for commercial applications.

## GUIDANCE ON FIRE WATER REQUIREMENTS

**Domestic Applications** 120 litres per minute at approximately 2.5 bar. To supply 2 heads operating simultaneously for 10 minutes.

**Residential Applications** 240 litres per minute at approximately 3.5 bar. To supply 4 heads operating simultaneously for 30 minutes. (Specific requirements will be hydraulically calculated on confirmation of order and water supply. Minimum operating pressure at the head to be 0.48 bar.)

**Commercial Applications** Risk specific calculation dependent on the hazard category. However, as a guide, a school will require a minimum water storage of 20 cubic water metres over and above the precalculated requirements of the grey water system.

## DESIGN

Each system is designed individually. The flows and pressures required to operate the sprinkler heads are hydraulically calculated to the Hazen-Williams formula in accordance with the relevant sprinkler standard. The sizing of the rainwater and grey water collection and storage tanks requires assessment of the actual volume of water available, and the likely demand for its use within the building. The fire sprinkler requirements are taken into account within this calculation.

**As each project is unique, this published specification can only be a typical guide to the Greyflow® System we may design for your project.**



## WATER SUPPLY

For top-up and infill purposes, the new water supply into the tank should be 32mm, controlled by the ECU.

## GREYFLOW® ECU MANAGEMENT UNIT

A compact fire sprinkler and rainwater harvesting electrical control unit for the supply of fire sprinklers and toilets via a submersible pump from a rainwater storage tank.

The control unit can vary in size depending upon the application. The pumps may be within the tank or the control unit, and feature a suction and pressure connection with a floating extraction at the suction side, plus a pressure pipe including hose clips and nipples.

The pump specification will be advised at point of design.

The unit also features: a mains water back-up arrangement including connection to the tank; pressure sensor; expansion vessel; ball valve for testing purposes; and an alarm switch.

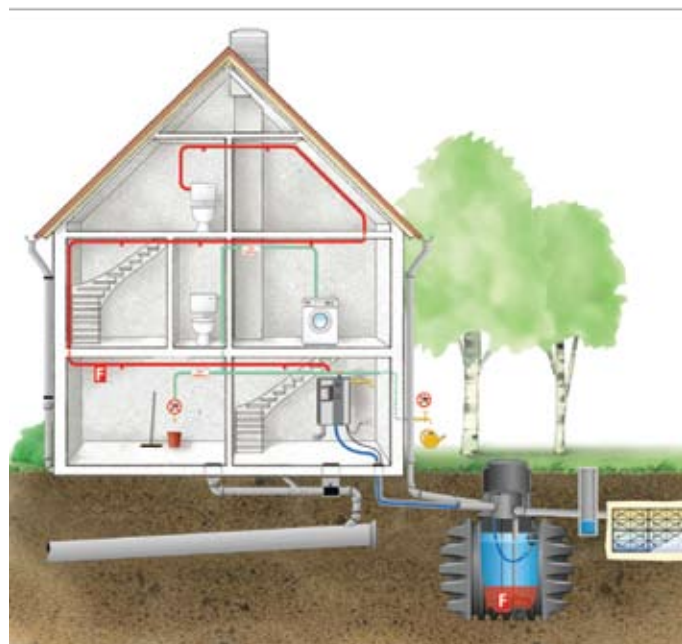
## INSTALLATION

Installation is undertaken by approved, licensed contractors to documented procedures and guidelines.



## COMMISSIONING

Each system is commissioned by a Homesafe engineer. This is a relatively simple process following installation, providing all the services are active. Subsequently, certificates of completion are issued.



## SPRINKLER HEADS

Typically will be tamper resistant, concealed pendent sprinkler heads or side wall equivalent listed to UL 1626. Cover plates, where used, to be flat white, bright white, chrome or customised in accordance with BS EN 12259-1. The final specification of the heads is dependent on environmental factors and the Authorities Having Jurisdiction.



## PIPE WORK

The system design will incorporate fire and water compliant components:

BlazeMaster® CPVC tube conforming to ASTM F442 and BS 7291-4, UL and Loss Prevention Board listed and WRAS compliant with a 50 year warranty. Pex (A-type, cross-linked polyethylene tubing), UL listed and WRAS compliant with a 25 year warranty.

Greyflow pipe work will be clearly identified to avoid cross connection with the potable water supply.



## FITTINGS

All jointing of the pipe work will be by an approved method conforming to the relevant Standard.

## STORAGE TANK SPECIFICATIONS

Combined rainwater and fire sprinkler tank for storing water for toilet supply and reserve water storage for fire sprinklers. Storage tank includes self-cleaning pre-filtration, calmed inlet and overflow, 600mm access, and connections for the Greyflow® ECU management unit. Tanks are available in different sizes and material.

## WARRANTY

Each system carries a continual warranty, with the exception of moving parts (pumps) which carry a 12 month manufacturer's warranty. The system warranty is subject to the acceptance of the relevant Greyflow® maintenance plan and full service history.

## MAINTENANCE

All reclaimed water systems require adequate and continuing maintenance as part of a formal regime to ensure correct system operation and acceptable water quality. All fire protection measures should also be routinely inspected.

Greyflow® systems are to be serviced at least annually by Homesafe approved engineers, and inspected at regular intervals. A major service is required every 5th year.

Additionally, Greyflow® users have access to a 24 hour advice line.

*Homesafe reserves the right to alter system component specification to suit project requirements and technological advancement.*



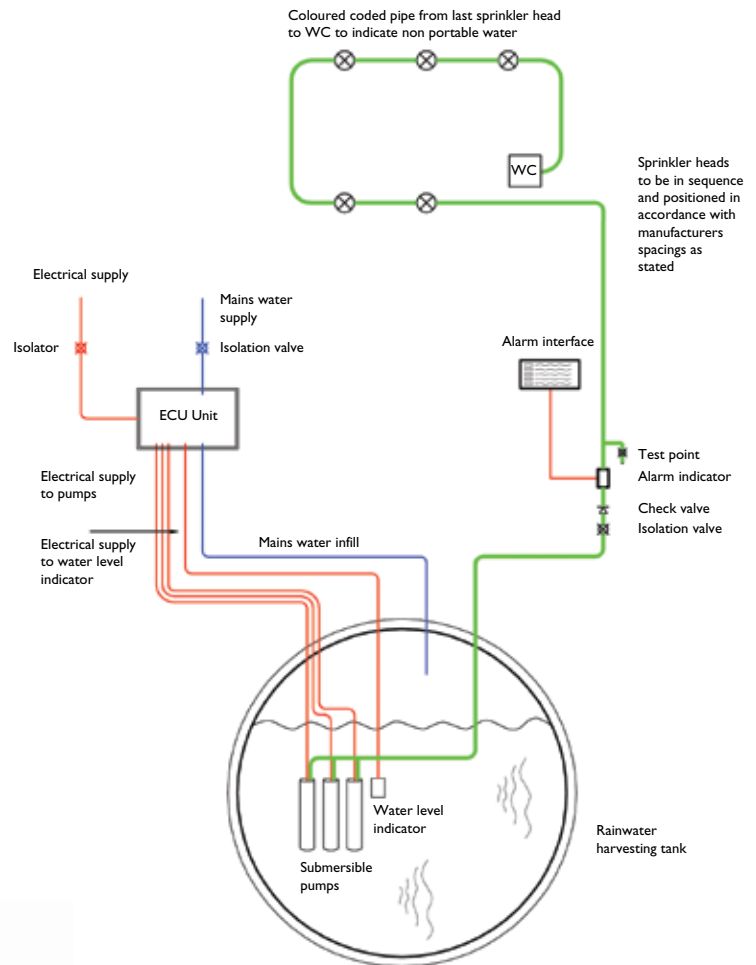
### IN-BUILT SAFETY FEATURES

The Greyflow® systems satisfy two areas of operational concern for fire sprinkler systems in general:

**Reliance on the pump.** It is crucial that fire pumps are routinely checked and run. The Greyflow® fire pump is continuously self-checking since it is running daily. If it fails to run, an alarm will sound.

**Dependence on a water supply.** The most significant reason why systems fail to protect occupants, is due to the supply valve being mistakenly shut off. With a Greyflow® system, which is supplying other plumbing fixtures in the building, occupants are assured of water supply to the sprinkler heads.

### GREYFLOW® SYSTEM SCHEMATIC\*



Greyflow Schematic (N.T.S.)

- Green line type denotes sprinkler & WC supply pipework
- Blue line type denotes back up supply pipework
- Red line supply denotes electrical cable

\* Representative layout, each system is individually designed.



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