



Klargester Environmental Limited

College Road
Aston Clinton
Aylesbury
Buckinghamshire HP22 5EW
Tel: 01296 633000 Fax: 01296 633001
website: www.klargester.co.uk

**Agrément
Certificate
No 02/3933**
Second issue*

Designated by Government
to issue
European Technical
Approvals

ENVIREAU RAINWATER MANAGEMENT SYSTEMS

Système de moissonage de l'eau de pluie
Regenwasser Erntesystem

Product



• THIS CERTIFICATE RELATES TO ENVIREAU RAINWATER MANAGEMENT SYSTEMS, CONSISTING OF DISPLAY UNIT⁽¹⁾, SUBMERSIBLE PUMP WITH FILTER, ELECTRICAL CONTROL UNIT, DEPTH SENSOR⁽¹⁾ OR FLOAT SWITCH⁽²⁾, IN-LINE FILTER, DELIVERY HOSE, SENSOR CABLE, MAINS CABLE AND TUNDISH VALVE⁽³⁾.

(1) Direct or Gravity Systems only

(2) Economy System


(3) Direct System.

• The systems are available as either a Direct, Gravity or Economy option, for use in domestic, commercial and public buildings for the supply of non-potable water from rainwater capture for a variety of uses.


continued

Regulations


1 The Building Regulations 2000 (as amended) (England and Wales)

 The Secretary of State has agreed with the British Board of Agrément the aspects of performance to be used by the BBA in assessing the use of rainwater management systems within the Building Regulations. In the opinion of the BBA, Envireau Rainwater Management Systems are not subject to these Regulations.

2 The Building (Scotland) Regulations 2004

 In the opinion of the BBA, Envireau Rainwater Management Systems are not subject to these Regulations.

3 The Building Regulations (Northern Ireland) 2000

 In the opinion of the BBA, Envireau Rainwater Management Systems are not subject to these Regulations.

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4 Construction (Design and Management) Regulations 1994 (as amended)

Construction (Design and Management) Regulations (Northern Ireland) 1995 (as amended)

In the opinion of the BBA there is no information in this Certificate which relates to the obligations of the client, planning supervisor, designer and contractors to address their obligations under these Regulations.

5 Water Supply (Water Fittings) Regulations 1999 England and Wales, Water Byelaws 2000, Scotland and the Water Regulations, Northern Ireland England and Wales

In the opinion of the BBA, Envireau Rainwater Management Systems satisfy the requirements of the Regulations, if used and installed in accordance with this Certificate.

Scotland

In the opinion of the BBA, Envireau Rainwater Management Systems satisfy the requirements of the Water Byelaws, if used and installed in accordance with this Certificate.

Northern Ireland

In the opinion of the BBA, Envireau Rainwater Management Systems satisfy the requirements of the Water Regulations, if used and installed in accordance with this Certificate.

6 The Electrical Equipment (Safety) Regulations 1994 and the Electromagnetic Compatibility Regulations 1994

These Regulations implement the Low Voltage Directive 73/23/EEC (as amended by the CE Marking Directive 93/68/EEC) and the Electromagnetic Compatibility Directive 89/3336/EEC and require manufacturers to carry out assessment of their products against the criteria given in the Directives. Declarations of Conformity have been provided by Klargestor Environmental Limited. The BBA has not assessed the product for compliance with these Directives.

- *The system must be used in conjunction with the following items, which are not covered by this Certificate: a separate first-stage filter, a storage tank and connecting pipework.*
- *This Certificate does not cover the end use of the harvested water.*

Technical Specification

7 Description

7.1 Envireau Rainwater Management Systems are available as three options: the Direct System (see Figure 1), the Gravity System (see Figure 2) and the Economy System (as Figure 2 but with a leaf filter integral to the underground tank).

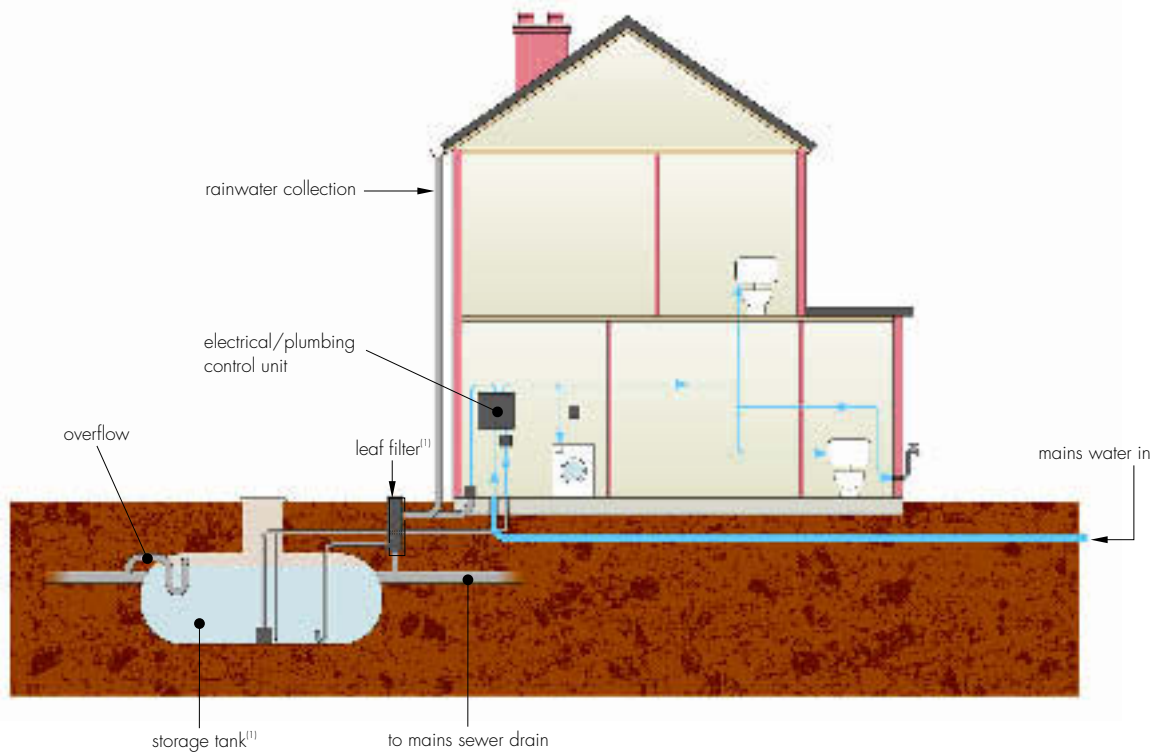
7.2 The certificated components of the system (see Figures 3 to 5) must be used with a suitable first-stage filter of 0.28 mm nominal mesh size, a storage tank and connecting pipework. Advice on the selection of these items and the required specifications will be provided by the Certificate holder's technical department.

7.3 The storage tank receives surface rainwater which is pumped via a filter system either direct to the various appliances at pressure in the Direct System or to a header tank in the Gravity and Economy Systems. In the Direct System, the water

outlet can be set to a maximum of 3.5 bar (typical mains pressure). All systems are remotely controlled from the electrical control unit which has integrated plumbing and electrical controls at a single point.

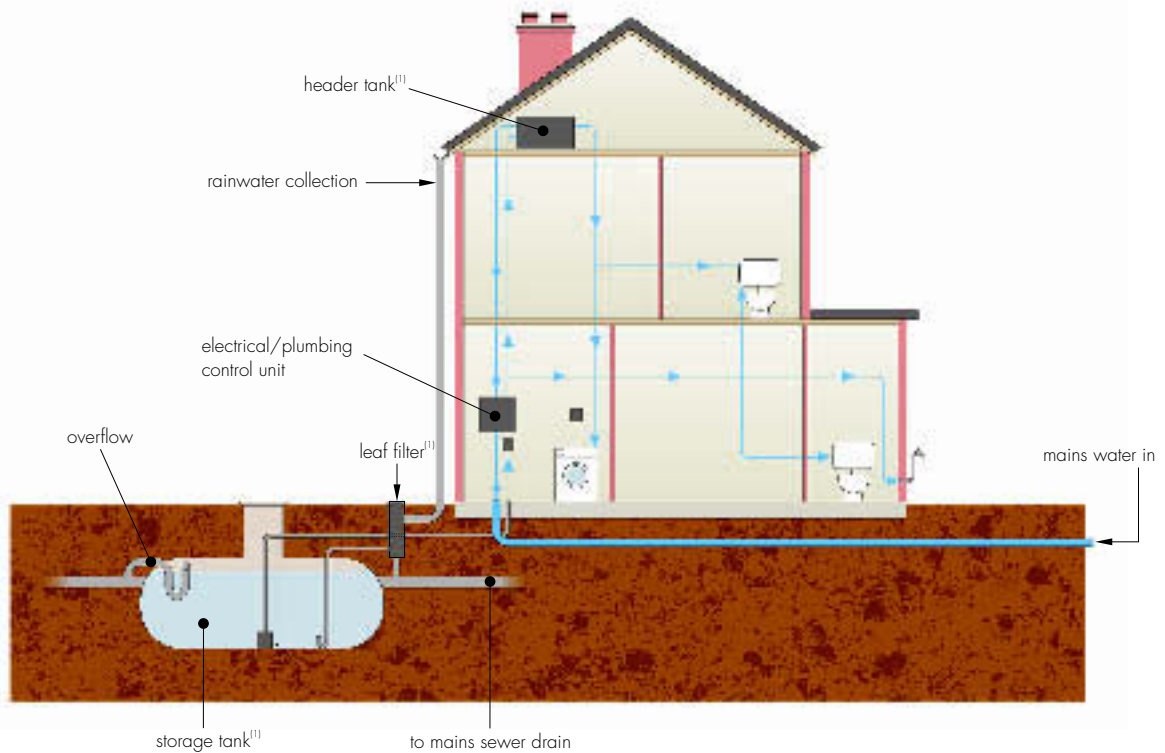
7.4 In the Direct System the storage tank, or in the Gravity System the header tank, will automatically fill with mains water if the level drops below a predetermined value (VR4) shown in Figure 6. The quantity of mains water introduced when the low-level sensor is activated is adjustable (VR7). If the storage tank becomes too full (VR3), a water overflow system comes into operation and water is removed into the surface water drainage system. The differential limits about which the pumped overflow level setting operates can be varied (VR6). The fail-safe level beneath which the pump will not operate safely (VR5) is factory pre-set to 225 mm, with a fixed differential ensuring that the pump will be disabled when the water level falls to 190 mm and enabled when the water level rises to 320 mm. It is not advisable to adjust this setting as this could result in damage to the pump.

Figure 1 Direct System



(1) item not covered by BBA Certificate

Figure 2 Gravity System



(1) item not covered by BBA Certificate

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Figure 3 Plumbing layout for Direct System — typical installation

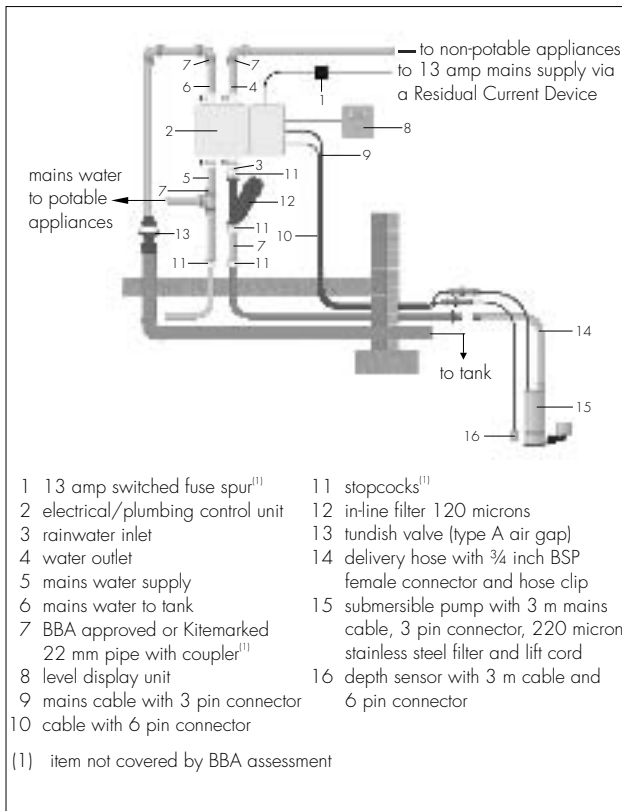


Figure 4 Plumbing layout for Gravity System — typical installation

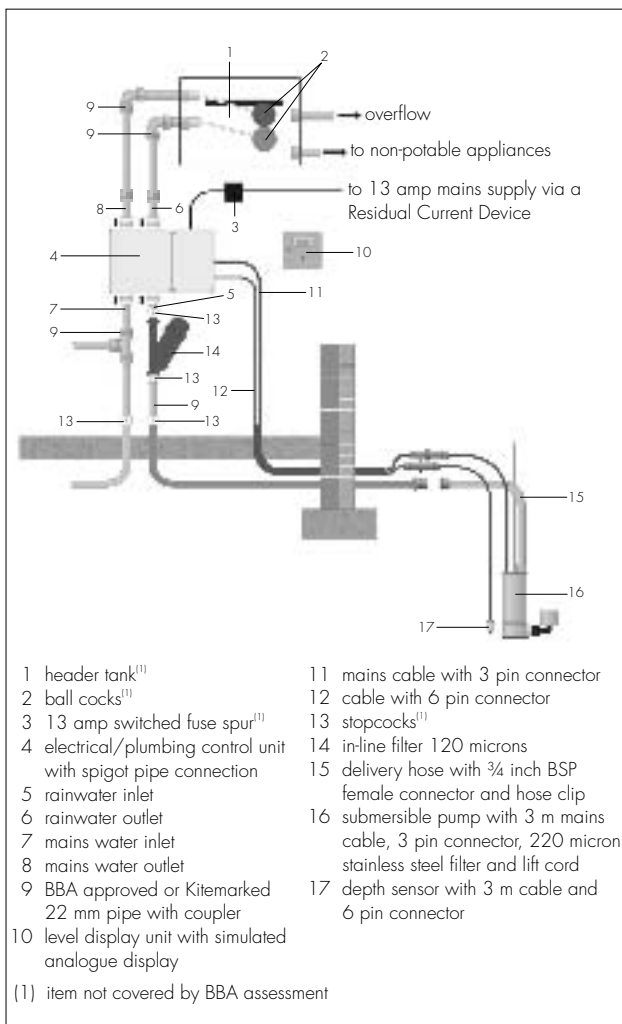


Figure 5 Plumbing layout for Economy System — typical installation

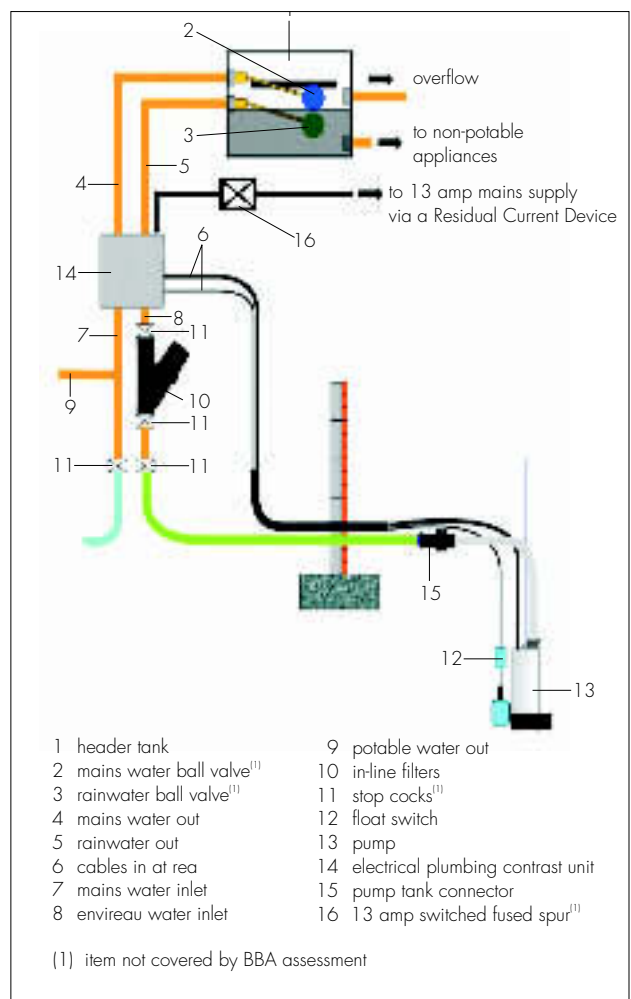
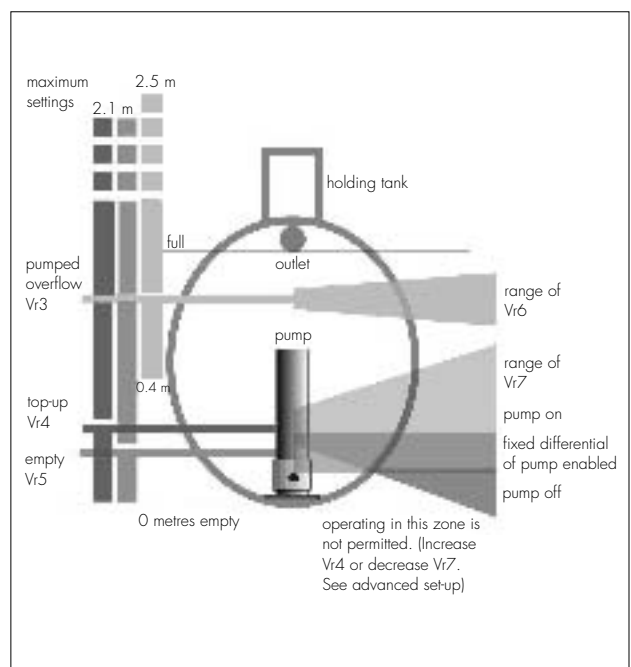


Figure 6 Electrical and plumbing control unit settings



7.5 In the Economy System all pressure switch and automatic switchover settings are factory pre-set and not adjustable. If the rainwater storage tank is empty, the float switch will be activated and the header tank will automatically fill with mains water.

7.6 In the Direct and Gravity Systems there is a display unit with a simulated analogue level display and a system status indicator giving visual indication of extended pump running or system failure.

7.7 The mains inlet and outlet and non-potable water inlet and outlet are designed to connect to BS EN 1401-1 : 1998 22 mm pipe and fittings for the Direct and Gravity Systems and 15 mm for the Economy System. These should be BBA approved or Kitemarked. Backflow and air gap devices must be installed. For the Gravity and Economy Systems, an appropriate header tank is required but this item has not been assessed by the BBA.

8 Delivery and site handling

8.1 The systems are supplied to site in a cardboard box labelled with product code, works order number, assembly date and BBA symbol incorporating the number of the Certificate.

8.2 The boxed systems must be handled with care to avoid damage to the component parts.

Design Data

9 General

9.1 Envireau Rainwater Management Systems are suitable for the storage and re-use of rainwater. The BBA has not assessed the suitability of the water for any end use. This is site dependent and should be discussed with the manufacturer prior to installation.

9.2 As a connection is made to the mains water supply, the correct level of backflow prevention must be adhered to. The Water Supply (Water Fittings) Regulations 1999 give details of these requirements. Use of WRc listed products is recommended for backflow prevention and water header tanks. Guidance on installing and marking recycled water can be obtained from the Water Regulation Advisory Scheme (WRAS) under documents 9-02-04 and 9-02-05.

9.3 The Direct and Gravity Systems are suitable for use with any storage tank containing water up to 3000 mm depth which is the limit of the range of the depth sensor.

9.4 The standard 40/08 stainless steel submersible pump for the Direct and Gravity Systems can supply a flow capacity rate of up to 4.8 m³ per hour to a head of 13 m, or at a flow capacity rate of up to 1.2 m³ per hour to a head of 44 m and is suitable for a standard domestic house. The stainless steel submersible pump for the Economy System is suitable for buildings up to two storeys (maximum 6.6 m) and can supply a flow capacity rate of up to 0.9 m³/hour to a head of 10 m. If required, a number of standard pumps can be fixed in relay to provide increased supply and increased head. In non-standard cases the Certificate holder will

employ independent consultants to assist in the specification and selection of the pump(s).

10 Resistance to chemicals

The components of the systems covered by this Certificate have been assessed by the BBA as being suitable for use in contact with chemicals likely to be found in rainwater.

11 Watertightness

In the opinion of the BBA the connections between the submersible pump and mains cable, submersible pump and delivery hose and depth sensor and sensor cable of the systems have been assessed by the BBA as having adequate watertightness.

12 Cleaning and maintenance

12.1 Details of cleaning and maintenance (see Table 1) are given in the latest version of the Klargester Environmental Limited *Installation guidelines for Envireau Rainwater Management Systems* and *End user manual*. The responsibility for the costs of cleaning and maintenance are the customers.

12.2 The pump should be removed for maintenance using the lifting cord attached.

Table 1 Cleaning and maintenance

Pump filter	Annual
In-line filter	Every three months
RCD	As per instructions on RCD

13 Durability

13.1 Component parts of the systems have been assessed by the BBA as being made from materials which are conventional for their application or covered by standards, and all the components are replaceable. Moving parts such as the pump will need to be replaced periodically.

13.2 The systems come with a two-year parts guarantee from the Certificate holder.

Installation

14 General

14.1 The systems should be installed in accordance with the Certificate holder's *Installation guidelines for Envireau Rainwater Management Systems*.

14.2 Installation of drainage pipework, underground water pipework installation, underground electric cables and general internal plumbing arrangements, including a header tank for the Gravity System, have not been assessed by the BBA as part of this Certificate.

14.3 In the Direct System, the mains water outlet must be fitted with a Type A tundish valve.

14.4 The selected storage tank should be installed in accordance with the manufacturer's instructions.

Electrical safety

14.5 For electrical safety, the systems must be installed by a qualified electrician.

14.6 In England and Wales, all installations must meet the requirements of The Building Regulations 2000 (as amended) (England and Wales), Part P — *Electrical Safety*. Notification should be made to the Local Authority Building Control in advance of installation. As an alternative to this procedure, electrical connections can be carried out by a person registered with a government-approved competent persons schemes for electrical work, such as the Electrical Self-Assessment Scheme (ELECTSA), using materials suitable for the purpose.

14.7 In Scotland, to meet the requirements of Mandatory Standard 4.5, with reference to clause 4.5.1⁽¹⁾⁽²⁾ of The Building (Scotland) Regulations 2004, all installations should be designed, constructed and tested such that they are in accordance with the requirements of BS 7671 : 2001.

(1) Technical Handbook — (Domestic).

(2) Technical Handbook — (Non Domestic).

14.8 Each control unit should be mounted next to and connected to a 13 amp switched fuse spur. The spur should then be connected with its own designated supply from the consumer unit via a RCD. The maximum current drawn by the system is approximately 5 amps but it may surge during start-up to approximately 10 amps.

Technical Investigations

The following is a summary of the technical investigations carried out on Envireau Rainwater Management Systems.

15 Tests

Tests were carried out on the systems to determine:

- endurance of the control equipment
- hydrostatic pressure resistance.

16 Investigations

16.1 The manufacturing process was examined, including the method adopted for quality control and details obtained on the quality and composition of the material used.

16.2 An assessment of the systems was made in relation to:

- durability
- pump performance and capacity
- water hygiene
- installation
- cleaning and maintenance
- resistance to chemicals
- watertightness.

16.3 A site visit was made to assess the practicability and ease of installation and connection.

Bibliography

BS 7671 : 2001 *Requirements for electrical installations*

BS EN 1401-1 : 1998 *Plastics piping systems for non-pressure underground drainage and sewerage — Unplasticized poly(vinylchloride) (PVC-U) — Specifications for pipes, fittings and the system*

Conditions of Certification

17 Conditions

17.1 This Certificate:

- (a) relates only to the product that is named, described, installed, used and maintained as set out in this Certificate;
- (b) is granted only to the company, firm or person identified on the front cover — no other company, firm or person may hold or claim any entitlement to this Certificate;
- (c) is valid only within the UK;
- (d) has to be read, considered and used as a whole document — it may be misleading and will be incomplete to be selective;
- (e) is copyright of the BBA;
- (f) is subject to English law.

17.2 References in this Certificate to any Act of Parliament, Regulation made thereunder, Directive or Regulation of the European Union, Statutory Instrument, Code of Practice, British Standard, manufacturers' instructions or similar publication, are references to such publication in the form in which it was current at the date of this Certificate.

17.3 This Certificate will remain valid for an unlimited period provided that the product and the

manufacture and/or fabrication including all related and relevant processes thereof:

- (a) are maintained at or above the levels which have been assessed and found to be satisfactory by the BBA;
- (b) continue to be checked as and when deemed appropriate by the BBA under arrangements that it will determine; and
- (c) are reviewed by the BBA as and when it considers appropriate.

17.4 In granting this Certificate, the BBA is not responsible for:

- (a) the presence or absence of any patent, intellectual property or similar rights subsisting in the product or any other product;
- (b) the right of the Certificate holder to market, supply, install or maintain the product; and
- (c) the actual works in which the product is installed, used and maintained, including the nature, design, methods and workmanship of such works.

17.5 Any recommendations relating to the use or installation of this product which are contained or referred to in this Certificate are the minimum standards required to be met when the product is used. They do not purport in any way to restate the requirements of the Health & Safety at Work etc Act 1974, or of any other statutory, common law or other duty which may exist at the date of this Certificate or in the future; nor is conformity with such recommendations to be taken as satisfying the requirements of the 1974 Act or of any present or future statutory, common law or other duty of care. In granting this Certificate, the BBA does not accept responsibility to any person or body for any loss or damage, including personal injury, arising as a direct or indirect result of the installation and use of this product.



In the opinion of the British Board of Agrément, Envireau Rainwater Management Systems are fit for their intended use provided they are installed, used and maintained as set out in this Certificate. Certificate No 02/3933 is accordingly awarded to Klargester Environmental Limited.

On behalf of the British Board of Agrément

Date of Second issue: 9th December 2005

A handwritten signature in black ink, appearing to read 'G. A. Cooper'.

Chief Executive

*Original Certificate issued on 1st May 2003. This amended version includes the addition of a new Economy System and updated references to electrical safety.

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British Board of Agrément

P O Box No 195, Bucknalls Lane
Garston, Watford, Herts WD25 9BA
Fax: 01923 665301

©2005

e-mail: mail@bba.star.co.uk
website: www.bbacerfs.co.uk



For technical or additional information,
contact the Certificate holder (see
front page).
For information about the Agrément
Certificate, including validity and
scope, tel: Hotline 01923 665400,
or check the BBA website.