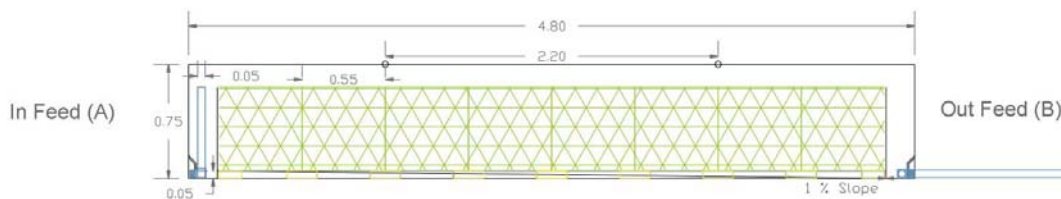


Rentareedbed Introduction

Rentareedbed provides the rental or hire purchase of mobile, modular reedbed systems for domestic, commercial and agricultural waste water treatment. Due to their nature rentareedbeds are highly effective for long and short-term wastewater treatment applications.

Design

In brief the design comprises of rectangular chambers conforming to a 1 to 4 ratio of width to length. Each reedbed has a height controllable inlet and outlet device. The beds have internal floor slope of 1% allowing for a hydraulic gradient through the bed preventing laminar flow. The internal void is filled with an artificial matrix on an interchangeable cartridge system, allowing poorly performing areas to be replaced as well as additional systems to be incorporated such as cartridge filters, aerators and pH correctors.



The matrix is comprised of tight fitting filamentous blocks, very light weight, approximately 40kg per cubic metre (compared to gravel at 2000kg) allowing flow through the system but no short-circuiting of wastewaters. The matrix is planted with reeds, *Phragmites australis* are the most common type used. The reeds are planted at the rate of 16 plants per square metre and soon colonise the whole bed area. All pipework and connections have been designed into recesses in the structure to prevent damage during transport and installation. The matrix acts as medium for plant and microbial colonisation providing a high surface to volume/weight ratio.



Deployment

Each bed weight 627kg empty, with reeds and after 3 years growth this may be 1000kg. The beds have 4 secure lifting points allowing the attachment of strops or chains for easy positioning and deployment.

The system has been designed so that each module can act singularly or in a combined format. Modules can be set out in a variety of formats as well as being stacked on an

internal frame, which allows the light to penetrate the centre of the lower bed allowing them to be deployed in areas of limited space.



Need

Reedbeds have excellent waste and water treatment applications, providing long-term cost effective solutions for major aqueous contamination treatment. They have been used for the treatment of wastes from domestic, agricultural and industry. Examples for their successful use in each sector can be demonstrated clearly. The main problem with reedbeds is that they are static and difficult to move.

Over the last 9 months we have identified the benefits and limitations with traditional systems and developed a mobile and modular system for deployment as part of a treatment process or as a stand-alone system.

There is clear and demonstrable need for the mitigation of diffuse and point sources of pollution. Principally this is as a result of two main factors:

1. Legislation; this places the requirement on both the public and private sector to deliver systems to prevent and control sources of pollution these include,
 - Water Framework Directive – control of diffuse sources of pollution, domestic, agricultural and industrial
 - Agricultural Waste Regulations – control of dirty water, pesticide residues, linked to cross compliance
 - Landfill Directive ban on all liquids to land fill (July 2004)
2. Financial; for the private sector the deployment of in house waste water treatment will have significant impact on the control and possible reduction of operating costs. This will be especially important, as private large-scale wastewater treatment facilities are likely to have to concentrate their efforts on domestic customers. These have no other alternative, as compared to business, which has options for treatment and control.

Currently many business are charged for waste water disposal, either to

- Sewer undertaker which the charge is based on volume, biological oxygen demand and toxicity or
- The environment, if the wastewater is partially clean this can be disposed of to a watercourse, river, estuary or groundwaters. However this will require Environment Agency Discharge consent, costs are again based on a similar equation.

For more details please contact us at:

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Potential Users

Domestic:	<p>Effluent from septic tanks and primary treatment systems</p> <p>Treatment of effluent from grey water harvesting and collection</p> <p>Clean water systems for swimming pools (natural) and ponds</p>
Trade and Industrial:	<p>Trade shows and outside events</p> <p>Temporary facilities such as construction sites</p> <p>Hotels and campsites where additional seasonal capacity is required</p> <p>Industrial effluents as the complete treatment system or part of mechanical and chemical systems prior to discharge, e.g. cheese making, brewing, abattoirs</p> <p>Treatment of yard run off instead of or in addition to interceptors, e.g. lorry parks, composting pads</p> <p>Fisheries protection for water clean up and silt management</p>
Agricultural:	<p>Run off from dirty yard areas</p> <p>Pesticide spray residues</p> <p>Dairy & Parlour washings</p> <p>Extensive livestock systems e.g. corrals</p>
Governmental:	<p>Highways Agency/Environment Agency for road pollution control</p> <p>Environment Agency water treatment control projects</p> <p>Emergency response for longer term treatment of spills</p> <p>Armed Forces for pollution control on exercise or at temporary camps in the UK and overseas</p>
Special Projects:	<p>The use of modules for evaluating reedbed performance on effluents and for accurate sizing and costs</p>

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