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CONSTRUCTION ECOLOGY FORUM – RECORD OF DEBATE

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| <p>Topic</p> | <p>“ This forum believes that all new buildings should be constructed with a facility for grey water recycling ”</p> | |
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| <p>Date</p> | <p>13 November 2002</p> | |
| <p>Attendees</p> | <p>Chris Shirley Smith- Metropolitan Water Simon Yanner – Green Architecture Susie Baker – ECD Architects Peter Stokes – ECD Architects Julian Williams – ECD Architects Matthew Stanford – Cook and Butler Jim Dunn – Adams Kara Taylor Clare Lowe – Adams Kara Taylor Hina Solanki – Adams Kara Taylor Andrew Morris – Adams Kara Taylor Richard Nightingale – Cullum & Nightingale</p> | <p>Ashley Bateson - Fulcrum Gwen Mark - Fulcrum Eben Simmons - Fulcrum Nita Dixit – Fulcrum Mike Morrison - Fulcrum Richard Shennan – Fulcrum Susie Woollett - Fulcrum Kristian Dickinson - Fulcrum Peter Mark - Fulcrum Hyvan Wong - Fulcrum Allan Homewood – Fulcrum Chani Leahong - Fulcrum Brian Mark – Fulcrum Josie Winch – Fulcrum Andy Ford – Fulcrum Xaran Rodriguez Fueyo - Fulcrum James Hepburn – Fulcrum</p> |

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| The vote | <p>Before the debate, an initial show of hands indicated that majority of people (14 to 9) disagreed with the proposal. After the debate was complete and all the arguments were put forward the final vote swayed to the other side. The majority (14 to 11) finally agreed with the proposal. There were some reservations around the definitions of 'facility to recycle'. There was general agreement that 'facility' should, at the least, incorporate a dual drain system with the grey water drain discharging to the main foul sewer until such time as the full grey water kit becomes operational. This was on the basis that 'above ground' works could be incorporated at a later date but this would not always be possible with 'below ground' works.</p> |
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| <p>The case for Grey water Recycling (Gwen Mark, Allan Homewood & Chris Shirley Smith)</p> <p>Grey water is that which is produced by showers, baths and hand washing and is filtered (either with membranes or naturally with gravel and reeds) and disinfected (either with chemicals or UV) to produce green water that can be used for toilet flushing, car washing or irrigation.</p> <ul style="list-style-type: none"> • It is a myth that, because rainfall is high in Britain, there are plentiful water resources. Britain is developing a climate of greater extremes. • Water consumption has increased by 70% per person in the last 30 years and is predicted to rise by 1.25% per annum over the next 30 years at present rates. • Migration of populations into cities (mainly in the warmer, drier parts of the country) means that water is required at a distance to where it arises. • All storage facilities, aquifers, lakes, rivers and reservoirs have a political and environmental price tag that will inevitably mean escalating future costs. OFFWAT are proposing an increase in average water bills from an UK average of £1.50 /m³ to £2.34/ m³. • 'Payback' times should not be calculated purely on current economic evaluation. The environmental costs should be included in calculations. • Grey/ green water recycling saves 1/3rd of water consumed. • It can work along with low water-use appliances since baths and showers using low water will still equate to toilet requirements. There is also still a use for irrigation. • It fits in best with high density, full occupancy developments. –Indeed this is the likely direction of future developments. • We should be thinking long term about community water management. Within this context, grey water recycling is essential • Having this facility means that, in the long term, main sewers can become smaller rather than larger. It will reduce overall costs of infrastructure | |
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The case against Grey Water Recycling (Hyvan Wong, Chani Leahong, Brian Mark)

- It is not an appropriate solution for small isolated buildings, particularly schools and offices since not enough grey water is generated.
- There are major maintenance issues. Individual residents can not be expected to perform the necessary filter changes and systems checks. This leads to high running costs.
- If the grey water is not used it will become septic and foul smelling.
- There is no obvious way of telling that the toilet is flushed with 'green water' or mains water. It is therefore difficult to know when the system fails
- Chemical disinfecting of greywater with bromine (Chlorine replacement) increases the chemical load that has to be dealt with at the centralised sewage treatment works.
- More 'kit' is required. Above and below ground pipework and a separate header tank. All with an additional installation cost –around £1600 per dwelling.
- Unacceptably long payback period; quotes of between 90 and 10 years per person.
- Less water in the drains which may lead to a requirement for a steeper gradient. This will lead to increased excavation costs.
- Greater water savings can be achieved for less capital outlay by installing water saving appliances (reduce) and collecting and using rainwater (re-use). With limited finance, greywater recycling is the least viable option for tackling depleting water supplies.
- With low water-use toilets, less water is required for flushing and so there may be an excess of green water for this purpose.

Interesting points of discussion from the audience:

- Buildings should not be considered in isolation. A school, for instance, needing large quantities of water for flushing can be linked to residential areas that produce large amounts of grey water.
- Buildings built on their own, may in time, become part of a community and so the argument of 'all' rather than 'some' new buildings having a 'facility for grey water recycling' should hold.
- Infrastructure often becomes redundant over time. Any equipment put in place now, with the intention of working at a future date, may be made redundant with technological advancements. It may just become a waste of resource

Any more views /ideas?

The debating forum remains open