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Our ref: 109540
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From Tim Dawe

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Subject: **Sewage flows, Glyndwr University**

Date: **25 October 2021**

Dear Steve,

I am writing with a revised comparison between the sewage flows generated from the former student halls of residence at the university and those generated by the Edwards Homes Ltd residential scheme, amended in light of WCBC's advice on average household sizes.

The former halls of residence comprised two blocks which between them provided 267 bed spaces (ref email from Philip Forster, Wrexham CBC, 19 June 2019). The EHL scheme provides 90 homes comprising 12 two-bed units, 69 three-bed and nine four-bed units. This gives a nominal population of 222 persons based upon average occupancy rates of 1.9, 2.5 and 2.9 persons respectively (ref email from M Philips, WCBC, 21 October 2021).

The correlation between the number of persons per household and per capita water usage is not necessarily a direct one given that some elements of water usage are shared in multi-person households. In 2020 the per-household daily water usages were reported as follows:

- One person: 149 litres
- Two persons: 276
- Three persons: 367

[<https://www.statista.com/statistics/827278/liters-per-day-household-water-usage-united-kingdom-uk/>
Annual water usage in the UK in 2020 , by number of people living at home]

Daily usages for the WCBC occupancy rates for two-, three- and four-bed homes are estimated at 263, 322 and 358 litres based on a pro-rata figure between the website values.

The total water usage of the former halls of residence is estimated at 39,783 litres daily, treating the rooms as separate one-person apartments. For the EHL scheme the average daily water usage is estimated at 28,596 litres, approximately 72% of the former use.

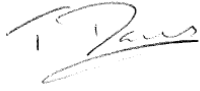
Building Regulations now oblige the water fittings and appliances in the EHL scheme to be chosen so as to restrict daily water usage to 105 litres per head. This gives a nominal daily total for the EHL scheme of 23,310 litres based upon the occupancy levels cited above. This is less than 60% of the estimated former use.

We conclude from this that the EHL scheme will generate a markedly reduced volume of sewage to that which the former halls of residence generated, by up to 40% (approximately).



We trust that this is sufficient for your purposes: please call if you have any queries.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Tim Dawe', with a stylized flourish at the end.

Tim Dawe

Associate



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