

**From:** Miquel Garcia <Miquel.Garcia@hrsservices.co.uk>  
**Sent:** 08 October 2018 11:54  
**To:** Stephen Pokora  
**Subject:** RE: Leybourne Village Hall - HRS job ref.127119 SBEM/EPC preliminary results  
**Attachments:** Leybourne Village Hall\_AS-DESIGN DRAFT BRUKL v02.pdf; 127119\_Leybourne Village Hall West Malling\_Energy Model Tracker v02.pdf

**Follow Up Flag:** Follow up  
**Flag Status:** Completed

Steve,

Following our recent phone conversation, I have rerun the SBEM simulations with the amendments agreed. The latest results show that the new extension achieves the minimum Part L 'pass', i.e. the BER equals the TER.

Building Emissions Rate (BER)	22.6 kg.CO2 / m2	Did the analysis pass the CO2 emissions rating? <b>YES</b>
Notional building Emissions Rate	22.6 kg.CO2 / m2	
Target Emissions Rate (TER)	22.6 kg.CO2 / m2	

I would like to stress that any change in the following critical assumptions may lead the new extension to fail with Part L later on:

1. **Combi gas boiler via radiators.** Assumed 91% efficiency (which is quite high) to provide both heating and domestic hot water throughout the new extension
2. **Domestic Hot Water.** Assumed none storage vessel or secondary circuit.
3. **Lighting.** Total average lighting efficacy of 85LmW
4. **Mechanical ventilation.**

<i>Extract Fan ref.</i>	<i>SFP (W/l/s)</i>	<i>Rates [ach]</i>
WCs	0.3	10.00
Bar	<del>0.3</del>	<del>10.00</del>
Kitchen	0.4	30.00

Assumed natural ventilation on the rest of the new extension.

5. **Air permeability test** considered not necessary at this stage but in the scenario where the 'as-built' SBEM fails, we could look into the possibility of air testing the new extension only. Our Airtightness Department confirms that it is feasible to limit the new Stage from the existing Main Hall by temporal sealing the stage opening. But I think the air test should be the last option.

**Important note:**

Ideally, we should run a new 'as-design' SBEM simulation in accordance with the information provided by your designated M&E design team. The attached 'as-design' BRUKL report is intended to provide a preliminary guidance only.

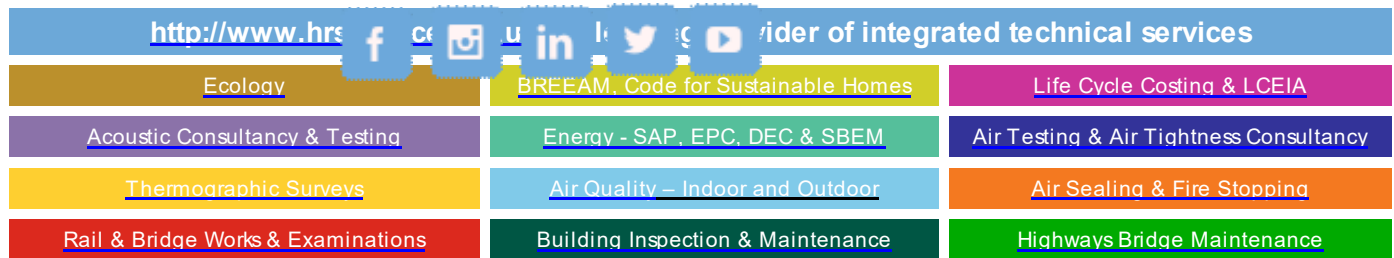
I hope the above comments clarify the situation. Please feel free to contact me if you need further help.

Regards,

Miquel

Miquel Garcia – Energy Consultant  
HRS Services Ltd

Direct: 0114 228 3300



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**From:** Miquel Garcia  
**Sent:** 02 October 2018 17:51  
**To:** 'Stephen Pokora'  
**Subject:** RE: Leybourne Village Hall - HRS job ref.127119 SBEM/EPC preliminary results

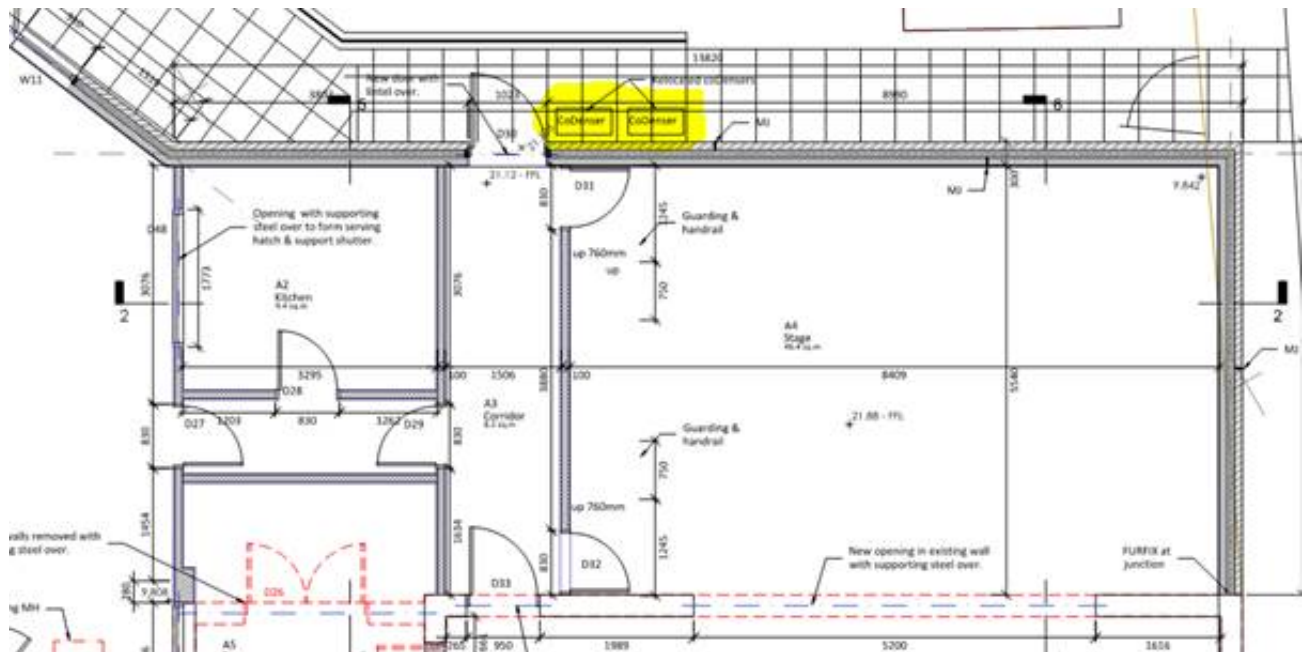
Hi Steve,

I have run several simulations with different scenarios. At the moment, the new extension fails to achieve the minimum Part L compliance 'pass' by a short margin. The BER (actual building CO2 emissions rate) is slightly higher than the TER (target CO2 emissions rate). Please find attached the provisional BRUKL report and a pdf with a summary of all the building specifications used.

Part L2 (2010) - England/Wales - Analysis		Results
Building Emissions Rate (BER)	23.0	kg.CO2 / m2
Notional building Emissions Rate	22.6	kg.CO2 / m2
Target Emissions Rate (TER)	22.6	kg.CO2 / m2
		Did the analysis pass the CO2 emissions rating?
		NO

The initial results prove that:

1. **External walls.** It will be difficult to achieve the minimum Part L compliance 'pass' using Rockwool 100mm (0.29 W/m2k), so the Kingspan K106 100mm is recommended (U-value 0.17 W/m2k).
2. **Air permeability.** I have inputted default 15 m3/m2.h @50 Pa. From above results, I believe an air test will not be necessary.
3. **Combi gas boiler.** To reduce at maximum the CO2 emissions associated to the heating demand, I had to use a gas boiler with 91% efficiency
4. **Lighting efficacy.** 60Lm/W shows to be insufficient so I have used 80LmW instead (note: current LED lamps usually achieve that efficacy)
5. **Air conditioning.** Assumed none. However, does the floor plan show 2No. external condenser units relocated in the back of the building?



6. **Mechanical Ventilation.** As per my previous e-mail but I have omitted the local extract fan in the Bar room.

7. **Renewables.** I don't think it will necessary to install any PV panel to comply with Part L.

Tomorrow we can discuss how we can proceed from here.

Regards,

Miquel

Miquel Garcia – Energy Consultant  
HRS Services Ltd

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**From:** Stephen Pokora [mailto:[stephen.pokora@fulkers.co.uk](mailto:stephen.pokora@fulkers.co.uk)]

**Sent:** 02 October 2018 11:57

**To:** Miquel Garcia

**Subject:** RE: Leybourne Village Hall, Little Market Row, West Malling, ME19 5QL - HRS job ref.127119 SBEM/EPC

Miquel

The assumptions look acceptable so let's see what outputs you get and we can discuss from there.

Many thanks

Steve

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**From:** Miquel Garcia [mailto:Miquel.Garcia@hrsservices.co.uk]  
**Sent:** 02 October 2018 11:55  
**To:** Stephen Pokora  
**Subject:** RE: Leybourne Village Hall, Little Market Row, West Malling, ME19 5QL - HRS job ref.127119 SBEM/EPC






Steve,

I am happy to proceed with the assumptions. I'll let you know how this evolves.

Regards,  
Miquel  
Miquel Garcia – Energy Consultant  
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**From:** Stephen Pokora [mailto:stephen.pokora@fulkers.co.uk]  
**Sent:** 02 October 2018 11:51  
**To:** Miquel Garcia  
**Subject:** RE: Leybourne Village Hall, Little Market Row, West Malling, ME19 5QL - HRS job ref.127119 SBEM/EPC

Hi Miquel

Thanks for getting back to me.

Unfortunately, on this project, we have no M & E input. There will be some bits I will be able to help with but other than that we may have to incorporate / assume certain inputs.

Is that ok?

Steve

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**From:** Miquel Garcia [mailto:Miquel.Garcia@hrsservices.co.uk]  
**Sent:** 02 October 2018 11:46  
**To:** Stephen Pokora  
**Subject:** RE: Leybourne Village Hall, Little Market Row, West Malling, ME19 5QL - HRS job ref.127119 SBEM/EPC

Stephen,

Now, I am looking into your project. You will receive updates soon.

Please bear in mind that in similar jobs we usually wait to receive at least a brief description of the expected systems (i.e. heating and ventilation strategy, domestic hot water heaters, etc) prior making any start. As this is not the case, I am due to assume all the M&E systems so the initial results may not be relevant to the actual building.

Please comment/amend if necessary the following basic assumptions for the new extension:

1. Heating:

- Combi gas boiler with radiators in: Main Hall, Small Hall, Kitchen, Bar, WCs.
- Unheated rooms: Corridors, Stores.

2. Cooling:

- no air conditioning

3. mechanical ventilation:

- Natural ventilation in all rooms except,
- Extract fans in WCs and Bar
- Cooker hood in the kitchen

Note: your mechanical designer should advice you whether a mechanical ventilation system (with heat recovery?) is required in the halls.

4. Domestic Hot Water:

- Kitchen and Bar: from above combi gas boiler. No storage vessel or 2nd circulation circuit
- WCs: instantaneous electric point of use, approx. 15L

5. Lighting efficiency:

- assume minimum Part L efficacy: 60 Lm/W at this stage (to be increased if necessary to more efficient lamps, e.g. LEDs 80/90 Lm/W)

6. Lighting controls:

- Manual switching controls throughout the new extension except,
- PIR sensors in WCs (auto On/Off)

7. renewables:

- to assume none at this stage

My assumptions will base on minimum standards as per the Non-Domestic Building Services Compliance Guide, current 2013 edition.

Regards,

Miquel






Miquel Garcia – Energy Consultant

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