Response to Compliance Item 3, 4 c, d & e

129A Rockfield Avenue, Perrystown, Dublin 12

Reg. Ref. SD21B/0536

Compliance Item 3: Drainage - Surface Water

(i) Prior to the commencement of development, the applicant/developer shall submit the following for the written agreement of the Planning Authority:

(a) The applicant shall submit a report showing site specific soil percolation test results and design calculations for the proposed soakaway in accordance with BRE Digest 365 – Soakaway Design.

(b) The applicant shall submit a revised drawing showing plan & cross-sectional views, dimensions, and location of proposed soakaway. Any proposed soakaway shall be located fully within the curtilage of the property and shall be:

(i) At least 5m from any building, public sewer, road boundary or structure.

(ii) Generally, not within 3m of the boundary of the adjoining property.

(iii) Not in such a position that the ground below foundations is likely to be adversely affected.

(iv) 10m from any sewage treatment percolation area and from any watercourse / floodplain.

(v) Soakaways must include an overflow connection to the surface water drainage network.

(c) The applicant shall include water butts as part of additional SuDS (Sustainable Drainage Systems) features for the proposed development.

(ii) The Developer shall ensure that there is complete separation of the foul and surface water drainage for the proposed development.

(iii) Any new precast surface water manholes shall have a minimum thickness surround of 150mm Concrete Class B.

(iv) All works for this development shall comply with the requirements of the Greater Dublin Regional Code of Practice for Drainage Works. REASON: In the interests of public health, safety, the proper planning and sustainable development of the area and in order to ensure adequate and appropriate surface water drainage provision.

Response:

(i) (a) Please refer to the Infiltration Rate Testing Report, attached as part of this response, which indicates the site-specific soil testing in accordance with the BRE Digest 365. In summary, the subject site has soil infiltration rate of 8.60×10^{-7} m/s.
(b) Please refer to the Soakaway Plan Location and Cross Section as part of this response pack. The subject site percolation tests did not yield a high infiltration rate, however, South Dublin City Council confirmed per e-mail that they would still like the applicant to provide a soakaway that will cater for the low flow rainfall. Please refer to Appendix A for the correspondence with SDCC Drainage Department. The soakaway will be provided with a high level overflow as indicated on the drawings.
It is proposed that the soakaway be lined with Terram 1000 geotextile and filled with 20-50mm angular stones with a void ration of 40%. The soakaway is designed to cater for

flows up to the 60-minute, 1:10 year storm event with a rainfall value of 21.4mm. A total volume of 0.8m^3 will be provided.

Met Eireann
Return Period Rainfall Depths for sliding Durations
Irish Grid: Easting: 312634, Northing: 230279,

	Interval		Years											
DURATION	6months,	1year,	2,	3,	4,	5,	10,	20,	30,	50,	75,	100,	150,	200,	250,	500,
5 mins	2.5,	3.6,	4.3,	5.2,	5.9,	6.4,	8.1,	10.1,	11.5,	13.4,	15.1,	16.5,	18.6,	20.3,	21.6,	N/A ,
10 mins	3.5,	5.1,	5.9,	7.3,	8.2,	8.9,	11.3,	14.1,	16.0,	18.7,	21.1,	23.0,	25.9,	28.2,	30.2,	N/A ,
15 mins	4.1,	6.0,	7.0,	8.6,	9.7,	10.5,	13.3,	16.6,	18.8,	22.0,	24.8,	27.0,	30.5,	33.2,	35.5,	N/A ,
30 mins	5.4,	7.8,	9.1,	11.0,	12.4,	13.4,	16.9,	20.9,	23.6,	27.4,	30.8,	33.4,	37.5,	40.8,	43.4,	N/A ,
1 hours	7.1,	10.1,	11.8,	14.2,	15.9,	17.2,	21.4,	26.3,	29.5,	34.1,	38.2,	41.3,	46.2,	50.0,	53.2,	N/A ,
2 hours	9.4,	13.2,	15.2,	18.3,	20.4,	22.0,	27.2,	33.1,	37.0,	42.5,	47.3,	51.1,	56.9,	61.4,	65.1,	N/A ,
3 hours	11.1,	15.4,	17.7,	21.2,	23.5,	25.3,	31.2,	37.8,	42.2,	48.3,	53.7,	57.9,	64.3,	69.2,	73.3,	N/A ,
4 hours	12.4,	17.2,	19.8,	23.6,	26.1,	28.1,	34.5,	41.6,	46.3,	52.9,	58.7,	63.2,	70.1,	75.4,	79.8,	N/A ,
6 hours	14.6,	20.1,	23.0,	27.3,	30.2,	32.4,	39.6,	47.6,	52.8,	60.1,	66.6,	71.5,	79.1,	85.0,	89.8,	N/A ,
9 hours	17.2,	23.5,	26.8,	31.7,	34.9,	37.4,	45.5,	54.4,	60.3,	68.4,	75.5,	81.0,	89.4,	95.8,	101.1,	N/A ,
12 hours	19.4,	26.2,	29.8,	35.2,	38.7,	41.4,	50.2,	59.9,	66.2,	74.9,	82.6,	88.4,	97.4,	104.3,	110.0,	N/A ,
18 hours	22.8,	30.7,	34.8,	40.8,	44.8,	47.8,	57.6,	68.5,	75.5,	85.1,	93.6,	100.1,	110.0,	117.6,	123.8,	N/A ,
24 hours	25.6,	34.2,	38.7,	45.3,	49.6,	52.9,	63.6,	75.3,	82.8,	93.3,	102.4,	109.3,	119.9,	128.0,	134.7,	157.6,
2 days	31.7,	41.5,	46.6,	53.9,	58.6,	62.3,	73.9,	86.4,	94.4,	105.4,	114.9,	122.2,	133.1,	141.4,	148.3,	171.5,
3 days	36.6,	47.4,	52.9,	60.8,	66.0,	69.9,	82.2,	95.5,	103.9,	115.5,	125.4,	132.9,	144.3,	152.9,	159.9,	183.8,
4 days	41.0,	52.6,	58.4,	66.8,	72.3,	76.5,	89.5,	103.4,	112.2,	124.2,	134.6,	142.4,	154.1,	163.0,	170.3,	194.8,
6 days	48.5,	61.6,	68.1,	77.3,	83.3,	87.9,	102.1,	117.1,	126.6,	139.5,	150.5,	158.8,	171.2,	180.6,	188.2,	214.0,
8 days	55.2,	69.4,	76.5,	86.5,	93.0,	97.9,	113.0,	129.1,	139.2,	152.8,	164.4,	173.1,	186.2,	196.0,	203.9,	230.8,
10 days	61.4,	76.6,	84.2,	94.9,	101.8,	106.9,	123.0,	139.9,	150.5,	164.8,	176.9,	186.0,	199.6,	209.8,	218.1,	245.9,
12 days	67.1,	83.3,	91.3,	102.6,	109.9,	115.3,	132.2,	149.9,	161.0,	175.8,	188.4,	197.9,	212.0,	222.6,	231.1,	259.8,
16 days	77.7,	95.7,	104.5,	116.8,	124.8,	130.7,	149.0,	168.1,	180.0,	195.9,	209.4,	219.5,	234.5,	245.8,	254.8,	285.1,
20 days	87.5,	107.0,	116.5,	129.9,	138.4,	144.7,	164.3,	184.7,	197.3,	214.2,	228.5,	239.1,	254.9,	266.7,	276.2,	308.0,
25 days	98.9,	120.2,	130.5,	145.0,	154.1,	161.0,	182.0,	203.8,	217.3,	235.2,	250.3,	261.6,	278.3,	290.7,	300.8,	334.1,

NOTES:
N/A Data not available
These values are derived from a Depth Duration Frequency (DDF) Model
For details refer to:
'Fitzgerald D. L. (2007), Estimates of Point Rainfall Frequencies, Technical Note No. 61, Met Eireann, Dublin',
Available for download at www.met.ie/climate/dataproducts/Estimation-of-Point-Rainfall-Frequencies_TN61.pdf

Figure 1: Site Specific Rainfall Depths

It is proposed to provide a soakaway with the following characteristics:

- *Length = 2.0m*
- *Width = 0.75m*
- *Height = 1.35m*

The soakaway design calculations can be seen in Figure 2.
The 60minute design calculation is as follows:

- *Inflow = Contributing area x Climate Change x Rainfall*

  = 31.3 x 1.2 x 0.0214 = 0.8m^3

- *Outflow = As_{50} x f x Duration*

  = 3.7125 x 8.6x10^{-7} x 3600 = 0.011m^3

- *As_{50} = 2 x (length x height/2) + 2 x (width x height/2)*
  = 2 x (2 x 1.35/2) + 2 x (0.75 x 1.35/2)
  = 3.7125m^2

Soakaway Design

	Column1	Column2	Column3		Soakaway	Column	Column2	Column3	Column4	Column5
	Impermeable Area	31.3	m2	m2	l	w	h	No.	Void Ratio	**Climate change**
	Contributing Area	31.3	m2		2	0.75	1.35	1	0.4	**1.2**

MINS	Rainfall (m)	Inflow (m3)	as50	f (m/s)	Duration	Outflow	S required	S provided	Pass/Fail
15	**0.0133**	0.5	3.7125	8.60E-07	900	0.003	0.5	0.8	Pass
30	**0.0169**	0.6	3.7125	8.60E-07	1800	0.006	0.6	0.8	Pass
60	**0.0214**	0.8	3.7125	8.60E-07	3600	0.011	0.8	0.8	Pass

Figure 2: Soakaway Design Calculations

(c) It is proposed that each rainwater downpipe will have a rainwater butt with an overflow to the surface water drainage system.

(ii) The subject site will have separate foul and surface water infrastructure and will outfall through the existing connections as shown on the site plan.

(iii) Where precast surface water manholes are utilized, they shall have a wall thickness of minimum 150mm. However, it is noted that the private drainage will consist of Wavin Inspection Chambers.

(iv) All works are designed in accordance with the GDSDS code of practice.

Compliance Item 4(c): Drainage – Irish Water

(i) All works shall comply with the Irish Water Standard Details for Water Infrastructure, (mandatory for all Irish Water Connection Agreement Offers issued after 6th June 2016 and available at http://www.water.ie/help-centre/connections)

(ii) (ii) All works shall comply with the Irish Water Standard Details for WasteWater Infrastructure, (mandatory for all Irish Water Connection Agreement Offers issued after 6th June 2016 and available at http://www.water.ie/help-centre/connections)Reason: In the interest of public health and to ensure adequate water facilities. Reason: In the interest of public health and to ensure adequate water / waste water facilities.

Response:

It is noted that all works where applicable will generally be in compliance with the standard details set out in the Irish Water Code of Practice. All the drainage that will be installed will be private drainage, and the subject site will outfall via the existing connection to the Irish Water infrastructure.

Compliance Item 4(d): Minimise Air Blown Dust

(d) Minimise Air Blown Dust. During the construction and or demolition phase of the development, Best Practicable Means shall be employed to minimise air blown dust being emitted from the site. This shall include covering skips and slack-heaps, netting of scaffolding, daily washing down of pavements or other public areas, and any other precautions necessary to prevent dust nuisances. The applicant/developer shall comply with British Standard B.S. 5228 Noise Control on Construction and Open sites and British Standard B.S. 6187 Code of Practice for demolition.

REASON: In the interest of public health and to uphold the Council's policies set out in the South Dublin County Council Development Plan.

Response:

Dust and fine particle generation from construction activities on the site can be substantially reduced through carefully selected mitigation techniques and effective management. Once particles are airborne it is very difficult to prevent them from dispersing into the surrounding area. The most effective technique is to control dust at source and prevent it from becoming air borne.

The following are typical mitigation measures which the contractor will implement:

1. The access road to the site are surfaced and no dust is anticipated arising from unsealed surfaces.

2. Footpaths immediately around the site will be cleaned by hand as required, with damping as necessary.

3. Netting will be provided to enclose scaffolding in order to mitigate escape of air borne dust from the existing and new buildings.

4. Stockpiles of materials will be kept to a minimum and if necessary, they will be kept away from sensitive receptors such as public residential areas etc.

5. Stockpiles were necessary, should be sheeted or watered down.

Compliance Item 4(e): Construction Noise and Hours

(e) Construction Noise and Hours. To control, limit and prevent the generation of unacceptable levels of Environmental Noise Pollution from occurring during construction activity, Equipment or Machinery (to include pneumatic drills, on-site construction vehicles, generators, etc.) that could give rise to unacceptable levels of noise pollution as set out generally for evening and night-time in S.I. No. 140/2006 - Environmental Noise Regulations 2006 shall only be operated on the site between 7.00 hours and 19.00 hours weekdays and between 9.00 hours and 13.00 hours on Saturdays. No works shall take place at any time on Sundays, Bank Holidays or Public Holidays. Any construction work outside these hours that could give rise to unacceptable levels of noise pollution shall only be permitted following a written request to the Planning Authority and the subsequent receipt of the written consent of the Planning Authority, having regard to the reasonable justification and circumstances and a commitment to minimise as far as practicable any unacceptable noise outside the hours stated above. In this respect, the applicant or developer shall also comply with BS 5228:2009 Noise and Vibration Control on Construction and Open Sites, and have regard to the World Health Organisation (WHO) – Guidelines for Community Noise (1999). The applicant or developer shall also endeavour to engage in local consultation in respect of any noise sensitive location within 30 metres of the development as approved prior to construction activity commencing on site. Such noise sensitive locations should be provided with the following:

- Schedule of works to include approximate timeframes

- Name and contact details of contractor responsible for managing noise complaints

- Hours of operation- including any scheduled times for the use of equipment likely to be the source of significant noise.

REASON: In the interest of public health by the prevention of unacceptable levels of noise pollution which could interfere with normal sleep and rest patterns and/or when people could reasonably expect a level of quietness, the proper planning and sustainable development of the area and to uphold the Council's amenity policies set out in the South Dublin County Council Development Plan.

Response:

The working hours will generally be from 07:30 – 17h00 on weekdays. At all times, all plant will be maintained in good working order to ensure noise production is kept to a minimum.

The Contractor will endeavor to position noise plant, where possible, away from sensitive receptors such as the residential houses surrounding the site and will be mindful of these houses in arrangement of site set up.

Idle plant will be switched off or throttled down to both save energy and reduce noise emissions.

In the event that The Contractor get a complaint about noise from a neighbour, he will act immediately to remedy the situation.

Appendix A – SDCC Drainage Correspondence

andy@borustructures.ie

From: Ronan Toft <rtoft@SDUBLINCOCO.ie>
Sent: Tuesday 5 April 2022 10:08
To: andy@borustructures.ie
Cc: 'Bart Borowiak'; Brian Harkin
Subject: RE: 129A Rockfield Avenue, Perrystown, Dublin 12_Planning Compliance SD21B/0536

Hi Andy,

Brian referred your query to me.

Your report suggests that there may be some (Albeit small) infiltration on site and that a high level overflow should be connected to the surface water drainage network. This would be an acceptable approach along with the inclusion of water butts. Can you submit the report and revised drainage plans to the planning dept under this condition showing this?

Please ensure surface water run off is connected into the surface water drainage network and not the foul/combined drainage network. Drawings must demonstrate this.

Regards,
Ronan

Ronan Toft
Assistant Engineer
Environment, Water and Climate Change
South Dublin County Council
County Hall, Tallaght, Dublin 24 D24 YNN5
| T: +353 1 414 9000 | Ext: 4333
| M: +353 86 065 5367 |
| email rtoft@sdublincoco.ie |

Comhairle Contae
Átha Cliath Theas
South Dublin County Council

From: andy@borustructures.ie <andy@borustructures.ie>
Sent: Tuesday 5 April 2022 07:43
To: Brian Harkin <bharkin@SDUBLINCOCO.ie>
Cc: Ronan Toft <rtoft@SDUBLINCOCO.ie>; 'Bart Borowiak' <bart@borustructures.ie>
Subject: 129A Rockfield Avenue, Perrystown, Dublin 12_Planning Compliance SD21B/0536

Dear Brian,

I trust that you are well?

I am writing to you with regards to the above-mentioned planning compliance for a private dwelling located on 129A Rockfield Avenue, Perrystown, Dublin 12. The planning Reg. Ref. is SD21B/0536 (Compliance Item No. 3 – Drainage-Surface Water).

As part of the planning application, it was initially intended to outfall the c. 30m2 hardstanding area of the proposed extension into a soakaway, however, upon further investigation and site-specific infiltration tests to BRE Digest 365, the soil yielded a very low infiltration value (*f*=8.60x10-7) and it is therefor not considered to be a feasible mechanism to outfall into.
I further note that all of the downpipes will be fitted with water butts, from where the surface water will now be conveyed through the existing outfall.

Please feel free to contact me or share any comments.
I trust that the above will be in order,

Andy Kotze
Civil Engineer BEng MIEI
BoruStructures
P: +353 (0)87 639 2387
W: www.borustructures.ie