From: Harrison, Lauren <Lauren.Harrison@balfourbeatty.com>
Sent: 18 September 2023 15:47
To: Brookes, Emily (Leaver) <Emily.Brookes@herefordshire.gov.uk>; Planning Enquiries <planning_enquiries@herefordshire.gov.uk>
Cc: Hockenhull, Joel <Joel.Hockenhull@balfourbeatty.com>
Subject: {Disarmed} FW: 230680 - Parkway House

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Good afternoon,

Please see the below (and attached) correspondence I have received from the Applicant/Agent for the above site.

Under the Highways Act, there are no facilities for a private connection to a highways asset, as currently proposed. Although we note the response regarding the proposed cesspool, our comments included in the below email dated 10th August still stand.

Kind regards,
Lauren

Lauren Harrison

Assistant Drainage Engineer | Balfour Beatty | Services | Living Places | Herefordshire Public Realm

(Seconded to BBLP from Waterman Aspen)

M: 07972 491164 | E: Lauren.Harrison@balfourbeatty.com

Balfour Beatty Living Places | Unit 3, Thorn Business Park | Rotherwas | Hereford | HR2 6JT

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From: Andy Powick <andy@zestaplanning.co.uk>
Sent: Thursday, September 14, 2023 4:59 PM
To: Harrison, Lauren <Lauren.Harrison@balfourbeatty.com>
Cc: Hockenhull, Joel <Joel.Hockenhull@balfourbeatty.com>; David Patterson <david.patterson@rappor.co.uk>; James Griffin <james@zestaplanning.co.uk>
Subject: Re: 230680 - Parkway House

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Hi Lauren,

Have you had a chance to consider my below email?

Kind regards,

Andy

Andy Powick MSc
Senior Planner
t: 01242 896 569

ZESTA

The Site, 24 Chosen View Road, Cheltenham, GL51 9LT

www.zestaplanning.co.uk

From: Andy Powick <andy@zestaplanning.co.uk>
Date: Tuesday, 5 September 2023 at 10:52
To: "Lauren.Harrison@balfourbeatty.com" <Lauren.Harrison@balfourbeatty.com>
Cc: "Joel.Hockenhull@balfourbeatty.com" <Joel.Hockenhull@balfourbeatty.com>, David Patterson <david.patterson@rappor.co.uk>, James Griffin <james@zestaplanning.co.uk>
Subject: Re: 230680 - Parkway House

Good morning Lauren,

Following your below email to Emily Brookes, please find attached a formal response from our drainage consultant David Patterson at Rappor.

The response ultimately sets out that both the proposed foul and surface water drainage strategies put forward are on the drainage hierarchy as set out by the Governments Planning Practice Guidance and are therefore reasonable and accepted methods of drainage given the constraints of the site.

In respect of the proposed location of the cesspool, this would be located within the ownership of the Applicant and can be controlled via Grampian condition.

I would welcome your comments on this.

Kind regards,

Andy

Andy Powick MSc
Senior Planner
t: 01242 896 569

ZESTA

The Site, 24 Chosen View Road, Cheltenham, GL51 9LT

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From: "Brookes, Emily" <Emily.Brookes@herefordshire.gov.uk>
Date: Friday, 11 August 2023 at 10:03
To: Andy Powick <andy@zestaplanning.co.uk>
Subject: FW: 230680 - Parkway House

Hello Andy,

Please see below response from our land drainage team.

Kind regards,

Emily

Herefordshire.gov.uk

Emily Brookes BSc MSc
Senior Planning Officer | North Team
Development Management | Economy and Environment | Herefordshire Council

@ Emily.Brookes@herefordshire.gov.uk
Tel 01432 261825

Main Council Switchboard:
01432 260000
General Planning Enquiries:
planning_enquiries@herefordshire.gov.uk

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From: Harrison, Lauren <Lauren.Harrison@balfourbeatty.com>
Sent: 10 August 2023 16:53
To: Brookes, Emily <Emily.Brookes@herefordshire.gov.uk>
Cc: Hockenhull, Joel <Joel.Hockenhull@balfourbeatty.com>
Subject: RE: 230680 - Parkway House

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Hi Emily,

With reference to Policy SD4, cesspools can only be considered a foul water drainage option in exceptional circumstances. We would require additional details regarding the regularity of emptying and destination for the effluent. We must make you aware that we have previously encountered objections for other sites from residents regarding the associated tanker movements. We would also like to highlight that the proposed cesspool location is outside the red line site boundary.

Our own review suggests that there are no sections of culverted watercourses that now form part of the highway drainage network within close proximity of the site. We have consistently objected to surface water discharges to the highway drainage network as the downstream conditions of the highway assets are unknown. Therefore, additional discharges would present a risk to the highways authority.

Kind regards,
Lauren

Lauren Harrison

Graduate Drainage Engineer | Balfour Beatty | Services | Living Places | Herefordshire Public Realm

(Seconded to BBLP from Waterman Aspen)

M: 07972 491164 | E: Lauren.Harrison@balfourbeatty.com

Balfour Beatty Living Places | Unit 3, Thorn Business Park | Rotherwas | Hereford | HR2 6JT

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From: Brookes, Emily <Emily.Brookes@herefordshire.gov.uk>
Sent: Tuesday, August 1, 2023 12:07 PM
To: Harrison, Lauren <Lauren.Harrison@balfourbeatty.com>
Subject: FW: 230680 - Parkway House

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Hi Lauren,

Can you please provide further detail as set out below?

Kind regards,

Emily

Herefordshire.gov.uk

Emily Brookes BSc MSc
Senior Planning Officer | North Team
Development Management | Economy and Environment | Herefordshire Council

@ Emily.Brookes@herefordshire.gov.uk
Tel 01432 261825

Main Council Switchboard:
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From: Andy Powick <andy@zestaplanning.co.uk>
Sent: 01 August 2023 11:44
To: Brookes, Emily <Emily.Brookes@herefordshire.gov.uk>

Cc: James Griffin <james@zestaplanning.co.uk>
Subject: Re: 230680 - Parkway House

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Hi Emily,

Thank you for making me aware of the drainage response.

Their response is clearly disappointing and fails to evidence their position in any meaningful detail. Our drainage consultant has put forward a credible solution and, in my view, the drainage response has failed to properly consider this. It would be really appreciated if you could go back to the drainage engineer and seek a detailed response on why they believe the scheme to be unacceptable. To just say that the proposal is not acceptable is not enough.

In the meantime, we will raise this with the applicant and our drainage consultant and come back to you shortly once we have decided on our position.

In addition, I need to understand your view on the latest Malvern Hills AONB comments (set out in my attached email) as well as understanding the Highways Team's view on the proposal. Can you please provide an update on this?

Kind regards,

Andy

Andy Powick MSc
Senior Planner
t: 01242 896 569

ZESTA

The Site, 24 Chosen View Road, Cheltenham, GL51 9LT

www.zestaplanning.co.uk

From: "Brookes, Emily" <Emily.Brookes@herefordshire.gov.uk>
Date: Tuesday, 1 August 2023 at 11:02
To: Andy Powick <andy@zestaplanning.co.uk>
Subject: FW: 230680 - Parkway House

Dear Andy,

Please see response from our land drainage team. It appears that there is no viable option for land drainage at the site and as such there is no way forward. How would you like for us

to proceed? Would you rather a decision is made or would you like to withdraw the application?

Kind regards,

Emily

Herefordshire.gov.uk

Emily Brookes BSc MSc
Senior Planning Officer | North Team
Development Management | Economy and Environment | Herefordshire Council

@ Emily.Brookes@herefordshire.gov.uk
Tel 01432 261825

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From: Harrison, Lauren <Lauren.Harrison@balfourbeatty.com>
Sent: 28 July 2023 14:36
To: Brookes, Emily <Emily.Brookes@herefordshire.gov.uk>
Subject: RE: 230680 - Parkway House

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Hi Emily,

Despite our previous response, the Applicant is still proposing a surface water discharge to the highway drain, which is not acceptable.

We object to the use of cesspits as they are not an acceptable foul water drainage option. As Land Drainage were not consulted on the associated Outline application, we were not given an opportunity to provide advice for this site. It appears that there are no viable foul water or surface water drainage options for the site.

Kind regards,
Lauren

Lauren Harrison

Graduate Drainage Engineer | Balfour Beatty | Services | Living Places | Herefordshire Public Realm

(Seconded to BBLP from Waterman Aspen)

M: 07972 491164 | E: Lauren.Harrison@balfourbeatty.com

Balfour Beatty Living Places | Unit 3, Thorn Business Park | Rotherwas | Hereford | HR2 6JT

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From: Brookes, Emily <Emily.Brookes@herefordshire.gov.uk>
Sent: Thursday, June 29, 2023 8:49 AM
To: Harrison, Lauren <Lauren.Harrison@balfourbeatty.com>
Subject: FW: 230680 - Parkway House

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Hi Lauren,

Please see below email and attachment. Should I formally reconsult you or are you happy to respond via email?

Kind regards,

Emily

Herefordshire.gov.uk

Emily Brookes BSc MSc
Senior Planning Officer | North Team
Development Management | Economy and Environment | Herefordshire Council

@ Emily.Brookes@herefordshire.gov.uk
Tel 01432 261825

Main Council Switchboard:

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From: Andy Powick <andy@zestaplanning.co.uk>
Sent: 28 June 2023 11:12
To: Brookes, Emily <Emily.Brookes@herefordshire.gov.uk>
Cc: James Griffin <james@zestaplanning.co.uk>
Subject: Re: 230680 - Parkway House

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Hi Emily,

Further to the below email, Rappor have now reviewed the comments provided by the Council Drainage Officer dated 30th May 2023 and have revised the Drainage Strategy and Technical Note accordingly. To summarise the updates and response to comments are set out below:

The current surface water drainage proposals involve a discharge to an existing highway drain – this discharge is in accordance with the SuDS Hierarchy if all other methods of surface water management are discounted. The hierarchy of discharge is also referenced in the Herefordshire Council SuDS Handbook (2018). Given we have shown all other methods of surface water discharge have been considered and discounted we believe a positive restricted connection to an existing highway drain is viable and compliant. The discharge rate is limited to 1 l/s and caters for all storms up to and including the 1 in 100 year plus a 40% allowance for climate change.

The development foul discharge will be collected in a cess pit and emptied on a regular basis. The strategy noted septic tank which is incorrect and has been revised as attached. There are no land drains, watercourse or non-seasonable ditches within proximity to the site

and a connection to the highways asset is not deemed appropriate. This is the same drainage strategy used by the existing property, Parkway House.

We trust this is now acceptable and await confirmation of this.

Also, in respect of the updated plans/documents sent across on the 16th June, has there been any further update on the acceptability of this?

Kind regards,

Andy

Andy Powick MSc
Senior Planner
t: 01242 896 569

ZESTA

The Site, 24 Chosen View Road, Cheltenham, GL51 9LT

www.zestaplanning.co.uk

From: Andy Powick <andy@zestaplanning.co.uk>
Date: Monday, 19 June 2023 at 16:44
To: "Brookes, Emily" <Emily.Brookes@herefordshire.gov.uk>
Cc: James Griffin <james@zestaplanning.co.uk>
Subject: Re: 230680 - Parkway House

Hi Emily,

Thank you for this. I have asked our Drainage Consultant to review, and I will respond to you shortly.

Also, thank you for chasing up the tree and transport responses, with a positive tree response received today.

Kind regards,

Andy

Andy Powick MSc
Senior Planner
t: 01242 896 569

ZESTA

The Site, 24 Chosen View Road, Cheltenham, GL51 9LT

www.zestaplanning.co.uk

From: "Brookes, Emily" <Emily.Brookes@herefordshire.gov.uk>
Date: Friday, 16 June 2023 at 13:32
To: Andy Powick <andy@zestaplanning.co.uk>
Subject: FW: 230680 - Parkway House

Hello Andy,

Please see below from our Land Drainage specialists. Further information is requested regarding both surface and foul water drainage.

I have also sent another chaser to our tree and transport officers to hopefully get their comments and avoid imposing conditions. I am sorry it is taking so long.

Kind regards,

Emily

Herefordshire.gov.uk

Emily Brookes BSc MSc
Senior Planning Officer | North Team
Development Management | Economy and Environment | Herefordshire Council

@ Emily.Brookes@herefordshire.gov.uk
Tel 01432 261825

Main Council Switchboard:
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From: Harrison, Lauren <Lauren.Harrison@balfourbeatty.com>
Sent: 30 May 2023 16:18
To: Brookes, Emily <Emily.Brookes@herefordshire.gov.uk>
Subject: 230680 - Parkway House

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Hi Emily,

We have reviewed the information provided for the above site. We understand that infiltration and percolation tests undertaken onsite failed to drain, therefore a surface and foul water discharge to ground is not acceptable.

The current surface water drainage proposals involve a discharge to an existing highway drain; this is not acceptable, and an alternative strategy is required. The foul water is proposed to drain to a septic tank but the discharge proposals from this are unclear. Typically, this would involve a drainage field/mound however, as soakage tests failed onsite, this would not be acceptable. Please advise the Applicant of the following guidance; we must be clear that an amended foul water drainage strategy will be required:

If percolation testing results prove soakage is not viable, **outfall to a watercourse or ditch with a non-seasonal constant flow** may be permitted if the site **is not** within:

- 500m of a Special Area of Conservation (SAC), Special Protection Area (SPA), Ramsar site, Biological Site of Special Scientific Interest (SSSI), freshwater pearl mussel population, designated bathing water, or protected shellfish water.
- 200m of an aquatic local nature reserve.
- 50m of a chalk river or aquatic local wildlife site.

Upon the submission of amended surface and foul water drainage strategies, in line with the above advice, we will look to provide a formal consultation response.

Kind regards,
Lauren

Lauren Harrison

Graduate Drainage Engineer | Balfour Beatty | Services | Living Places | Herefordshire Public Realm

(Seconded to BBLP from Waterman Aspen)

M: 07972 491164 | E: Lauren.Harrison@balfourbeatty.com

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From: David Patterson
Sent: Monday, August 21, 2023 11:16 AM
To: 'Andy Powick' <andy@zestaplanning.co.uk>; Nicola Tiley <Nicola.Tiley@Rappor.co.uk>
Cc: Mark Burgess <mark.burgess@rappor.co.uk>; Mike Glaze <mike.glaze@rappor.co.uk>; 'James Griffin' <james@zestaplanning.co.uk>
Subject: RE: 230680 - Parkway House

Afternoon Andy,

Thanks for the call and chat earlier. Please see below the reworked response as discussed.

I am now picking this up and have been reviewing the works and the comments from HCC you have sent over.

Land Drainage – There is no current proposal for land drainage provisions on the site. As the site is seen not to offer infiltration the use of land drainage is not favourable and would actively encourage increased flows of water off the site and potentially undermine the boundary embankment and tree/hedgerow to the A417 by increasing hydraulic loading/saturation and creating alternative pathways for water to traverse the site. Furthermore, the proposed surface water management and collection of impermeable areas, into the attenuation and flow restricted discharge, intercepts any existing overland flow paths and will provide a significant betterment to the downstream areas beyond the current "unrestricted" nature.

If required, the site could incorporate a shallow (300x300mm) open top granular grip/French drain along the western boundary which would allow for the interception of any surface flows and permit discharge via evaporation (and nominal infiltration). Please can you confirm if this is a requirement to satisfy this matter?

Discharge to Highways Drain – As per our comments on the 28th June the discharge to the highways drain is in line with HCCs standard documentation and guidance as detailed below.

The following is extracted from HCCs SuDS guidance document section 1.4 and references the National Standards Document which outlines the Hierarchy approach to be used.

1.4 National Standards and Local Standards

The 2015 CIRIA SuDS Manual forms a basis for all SuDS design. DEFRA published 'Sustainable Drainage Systems: Non-statutory Technical Standards for Sustainable Drainage Systems in March 2015 to ensure a consistent approach to the design and enforcement of SuDS across the country. A Best Practice Guidance Document has been published by the Local Authority SuDS Officer Organisation (LASOO) which provides further interpretation and guidance in relation to the National Standards.

Under the LASOO National guidance, which the HCC references as above, the following clearly states the hierarchy of surface water discharges which may be considered and that in the event of all alternative options being exhausted then a connection to a local highway's sewer is permissible.

Runoff Destinations

See the Planning Practice Guidance

This states:

"Generally the aim should be discharge surface runoff as high up the following hierarchy of drainage options as reasonably practicable:

1. **Into the ground (infiltration)**
2. **To a surface water body;**
3. **To a surface water sewer, highway drain or another drainage system;**
4. **To a combined sewer."**

The information previously provided demonstrates that infiltration is not viable on the site based upon ground conditions. There are no watercourse or discharge locations within the site area or proximity which are viable for connection and discharge to. There are no known adoptable sewer networks in the area. Therefore, the proposed discharge is in line with HCC and national standards and is acceptable.

The original Greenfield runoff rate was shown in the Technical Note and based upon a generic 0.3 soil type factor. Based upon the infiltration testing and site conditions this can be updated to 0.5 increasing the greenfield run off. Furthermore, the total site area is 1068m2 which results in a peak run off from the parcel of 1.5l/s for the 1 in 100 yr storm. An updated version of the Greenfield runoff Rates is attached for reference.

It should also be borne in mind that the site currently allows through flow of all the uphill catchment area run off to pass through the site and enter the A417 and the highways sewer network.

Therefore, the proposed development being heavily restricted in its discharge rates (1l/s) up to and including the 1 in 100yr + 40% storm event with attenuation and flow control being provided on site offers betterment of flow rates into the existing highways sewer network. Furthermore, as noted above the site itself will provide significant betterment to the downstream highways network as it will now intercept any surface flows and prevent these being discharge "unrestricted" onto the A417 highways and reducing pressure on the road network and highways sewer network as is currently the case.

It is considered that the development and controlled/managed discharge into the highways sewer offers betterment and is In line with the HCC guidance and National Standards. Please can you confirmation of approval for the discharge connection to the highways sewer.

Cess Pool – The use of a Cess Pool is permitted under building regulations Part H section H2 1.58 to 1.68 and H2-A. As there is no other viable foul water management method the use of a Cess Pool / Pit is permitted. Furthermore, the Herefordshire Drainage Guidance document Section 7.4 states *"The use of cess pits will only be permitted in exceptional circumstances and where it can be demonstrated that sufficient precautionary measures will ensure no adverse effect upon natural drainage water quality objectives".* There is no other viable

alternative for the site to manage the Foul Water discharge and therefore it is considered that the use of a Cess Pool is in line with Building Regulations and HCCs Guidance. We can confirm that the installation, maintenance, and management of the system will be in accordance with the manufacturers details and specifications along with the maintenance details contained in Part H of the building Regulations. We have attached the design and specification information from Klargester who have confirmed that a 34,000L unit would be acceptable and compliant for the flows generated by the proposed dwelling.

Happy to discuss further should you wish to do so.

Kind regards,

David WJ Patterson (Bsc Hons)
Associate Infrastructure Engineer

rappor

Infrastructure / civil engineering • Landscape planning and design
Transport planning • Water and environmental management

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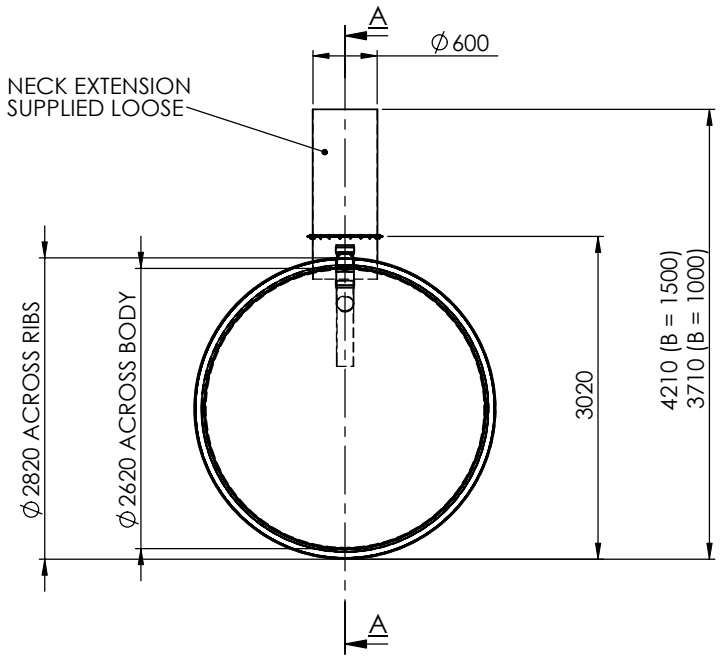

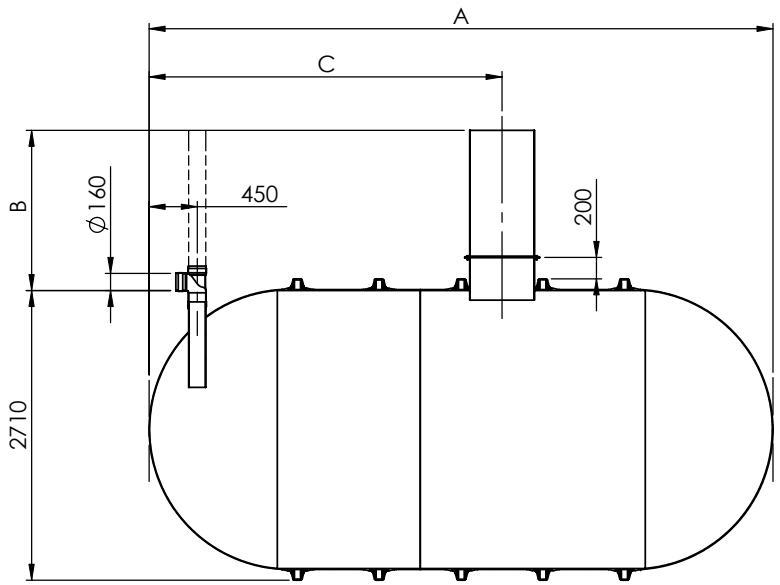

SECTION A-A

Nominal Volume (Litres)	Nominal Volume (Gallons)	Weight (Kg)	Overall Length A	Inlet invert B = 1.5 Metres	Inlet Invert B = 1.0 Metres	Dimension to neck C
18,000	3,960	646	4,317	1,500	1,000	2,547
22,000	4,889	828	5,073	1,500	1,000	3,302
26,000	5,720	981	5,837	1,500	1,000	3,302

NOTES:-

1. CESSPOOLS AND SILAGE TANKS MUST NOT DISCHARGE IN TO THE ENVIRONMENT AND MUST BE EMPTIED WHEN FULL.
2. THE TANK IS FITTED WITH A 160MM INLET SOCKET. PIPE ADAPTORS CAN BE PROVIDED FOR ANALTERNATIVE SIZE OF 110mm. THESE ARE FITTED EXTERNALLY TO THE TANK.
3. THIS DRAWING IS PROVIDED TO SUPPLY DIMENSIONAL INFORMATION ONLY.
4. THE UNIT MUST BE INSTALLED WITH A CONCRETE SURROUND. PLEASE SEE THE DETAILED INSTALLATION PROCEDURE SUPPLIED WITH EACH UNIT.
5. THE UNIT IS SUPPLIED WITH LOOSE, BOLT ON TANK SHAFTS TO SUIT EITHER 1 OR 1.5 METRE INVERT (SPECIFY WITH ORDER). THEY MUST BE FITTED ON SITE AS PART OF THE INSTALLATION AND CAN BE TRIMMED TO SUIT THE EXACT SIZE OF INVERT.
6. THE UNIT IS PROVIDED WITH 1, 2 OR 3 SHAFTS, DEPENDING ON IT'S VOLUME. TO AID DE-SLUDGING IT IS RECOMMENDED THAT 2 SHAFTS ARE SELECTED FOR TANKS WITH CAPACITES OF 34m3 AND ABOVE. 3 SHAFTS SHOULD BE FITTED TO UNITS OF ABOVE 54m3 (SPECIFY WITH ORDER). ADDITIONAL SHAFTS CAN BE FITTED. UNITS SHOULD NOT BE INSTALLED DEEPER THAN NECESSARY, NOR DEEPER THAN THE INVERT SPECIFIED FOR THE UNIT SUPPLIED.
7. PEDESTRIAN DUTY COVER AND FRAMES TO FIT DIAMETER 600mm NECKS, ARE AVAILABLE FOR PURCHASE.
8. THE WEIGHTS GIVEN ARE FOR HANDLING PURPOSES ONLY AND EXCLUDE THE BOLT ON SHAFTS.
9. THE INLET PIPE SHOULD BE EXTENDED TO GROUND LEVEL. DIAMETER 450mm ACCESS COVERS ARE FOR PURCHASE TO ALLOW FOR RODDING ACCESS.
10. SINGLE NECK TANKS SERVING SINGLE PROPERTIES SHOULD BE VENTED, USING THE SOIL STACK. LARGER TANKS SERVING MULTIPLE PROPERTIES SHOULD HAVE A VENT FITTED TO THE NECK TO ENABLE LOCALISED HIGH LEVEL VENTING.
11. WE RECOMMEND THE PURCHASE AND USE OF A HIGH LEVEL ALARM WITH THESE TANKS.

Please Check with Environmental Treatment Systems Limited For The Latest Issue Of This Drawing

Issue	Date	Drawn by	Approved by	Description
001	04.11.08	M.H.		INITIAL ISSUE
002	27.02.09	M.H.		22m³ AND 59m³ TANKS ADDED

Material : Various | Tolerance (unless stated) :
Finish : | Thickness : n/a
Weight : 980.96 Kg | Surface Area : m²
Modelled By : Name

Drawing : DS0963P - Ø2.6 CP - SL

SINGLE NECK CESSPOOL / SILAGE TANK

All Dimensions In mm | Scale: Do Not Scale | Third Angle Projection

R:\Engineering\Drawing Data\02 - Sales Drawings\DS\DS - 09\DS0963P - Ø2.6 CP - SL

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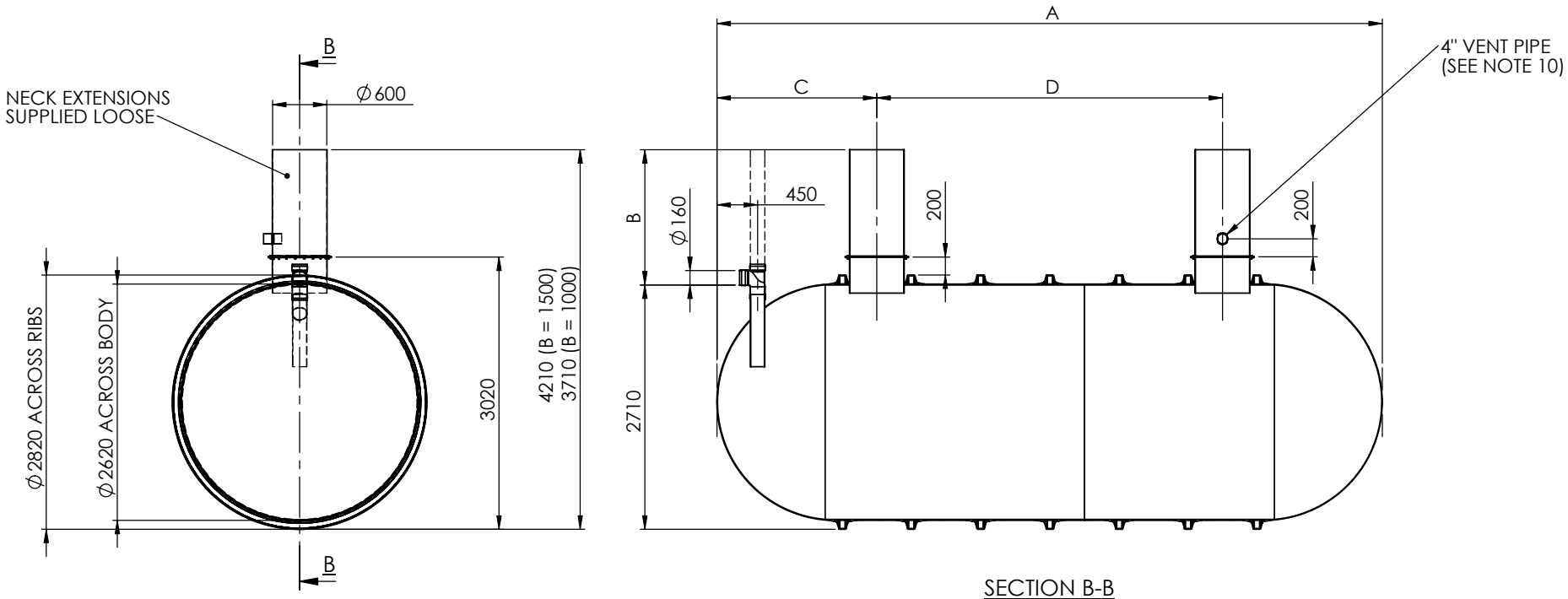

SECTION B-B

Nominal Volume (Litres)	Nominal Volume (Gallons)	Weight (Kg)	Overall Length A	Inlet Invert B = 1.5 Metres	Inlet Invert B = 1.0 Metres	Dimension to neck C	Dimension between necks D
34,000	7,480	1,315	7,376	1,500	1,000	1,772	3,833
38,000	8,360	1,484	8,150	1,500	1,000	1,772	4,606
46,000	10,120	1,888	9,684	1,500	1,000	2,536	4,612

NOTES:-

1. CESSPOOLS AND SILAGE TANKS MUST NOT DISCHARGE IN TO THE ENVIRONMENT AND MUST BE EMPTIED WHEN FULL.
2. THE TANK IS FITTED WITH A 160MM INLET SOCKET. PIPE ADAPTORS CAN BE PROVIDED FOR ANALTERNATIVE SIZE OF 110mm. THESE ARE FITTED EXTERNALLY TO THE TANK.
3. THIS DRAWING IS PROVIDED TO SUPPLY DIMENSIONAL INFORMATION ONLY.
4. THE UNIT MUST BE INSTALLED WITH A CONCRETE SURROUND. PLEASE SEE THE DETAILED INSTALLATION PROCEDURE SUPPLIED WITH EACH UNIT.
5. THE UNIT IS SUPPLIED WITH LOOSE, BOLT ON TANK SHAFTS TO SUIT EITHER 1 OR 1.5 METRE INVERT (SPECIFY WITH ORDER). THEY MUST BE FITTED ON SITE AS PART OF THE INSTALLATION AND CAN BE TRIMMED TO SUIT THE EXACT SIZE OF INVERT.
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7. PEDESTRIAN DUTY COVER AND FRAMES TO FIT DIAMETER 600mm NECKS, ARE AVAILABLE FOR PURCHASE.
8. THE WEIGHTS GIVEN ARE FOR HANDLING PURPOSES ONLY AND EXCLUDE THE BOLT ON SHAFTS.
9. THE INLET PIPE SHOULD BE EXTENDED TO GROUND LEVEL. DIAMETER 450mm ACCESS COVERS ARE FOR PURCHASE TO ALLOW FOR RODDING ACCESS.
10. SINGLE NECK TANKS SERVING SINGLE PROPERTIES SHOULD BE VENTED, USING THE SOIL STACK. LARGER TANKS SERVING MULTIPLE PROPERTIES SHOULD HAVE A VENT FITTED TO THE NECK TO ENABLE LOCALISED HIGH LEVEL VENTING.
11. WE RECOMMEND THE PURCHASE AND USE OF A HIGH LEVEL ALARM WITH THESE TANKS.

Material : Various	Tolerance (unless stated) :
Finish :	Thickness : n/a
	Surface Area :

Drawing : DS0963P - Ø2.6 CP - SL

TWIN NECK CESSPOOL / SILAGE TANK

All dimensions in mm

Scale: Not to scale

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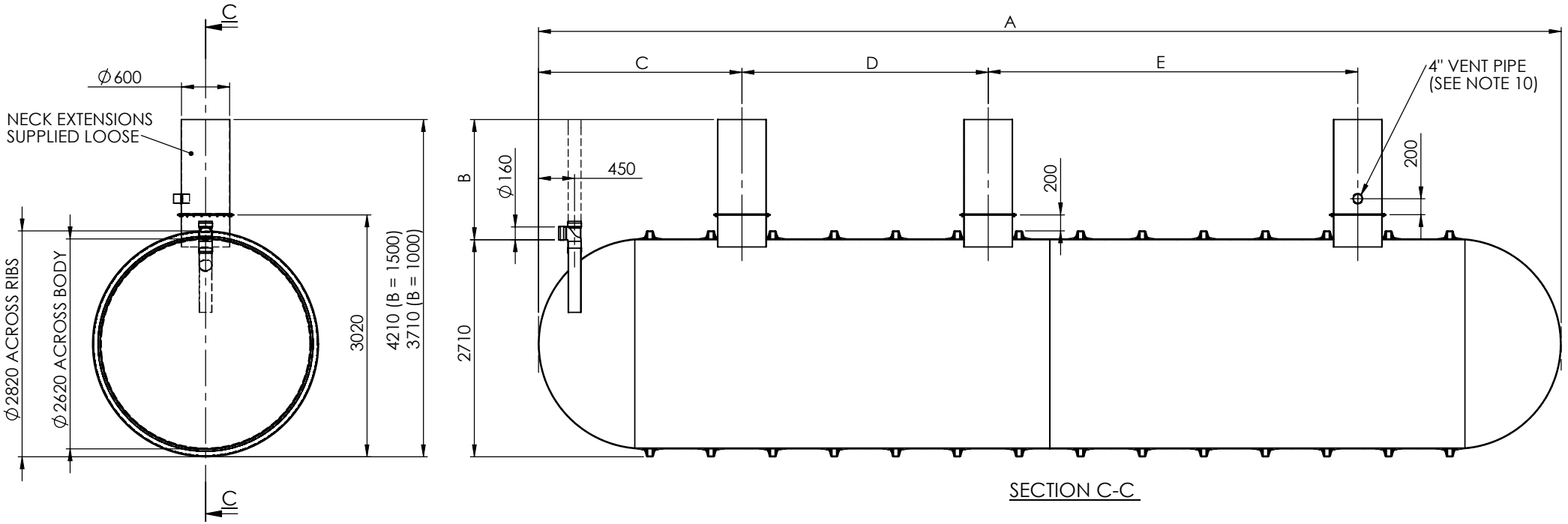

SECTION C-C

Nominal Volume (Litres)	Nominal Volume (Gallons)	Weight (Kg)	Overall Length A	Inlet Invert B = 1.5 Metres	Inlet Invert B = 1.0 Metres	Dimension to neck C	Dimension between necks D	Dimension between necks E
54,000	11,880	2,229	11,222	1,500	1,000	2,538	3,073	3,075
59,000	12,968	2,317	11,991	1,500	1,000	2,538	3,073	3,842
63,000	13,860	2,538	12,760	1,500	1,000	2,538	3,073	4,611
71,000	15,620	2,998	14,295	1,500	1,000	2,538	4,610	4,610
79,000	17,380	3,477	15,833	1,500	1,000	2,538	5,379	5,379

NOTES:-

1. CESSPOOLS AND SILAGE TANKS MUST NOT DISCHARGE IN TO THE ENVIRONMENT AND MUST BE EMPTIED WHEN FULL.
2. THE TANK IS FITTED WITH A 160MM INLET SOCKET. PIPE ADAPTORS CAN BE PROVIDED FOR ANALTERNATIVE SIZE OF 110mm. THESE ARE FITTED EXTERNALLY TO THE TANK.
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7. PEDESTRIAN DUTY COVER AND FRAMES TO FIT DIAMETER 600mm NECKS, ARE AVAILABLE FOR PURCHASE.
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11. WE RECOMMEND THE PURCHASE AND USE OF A HIGH LEVEL ALARM WITH THESE TANKS.

Material : Various	Tolerance (unless stated) :
Finish :	Thickness : n/a
	Surface Area :

Drawing : DS0963P - Ø2.6 CP - SL

TRIPLE NECK CESSPOOL / SILAGE TANK

All dimensions in mm

Scale: Not to scale

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Kingspan Environmental

012512
Septic, Cesspool, Silage
& Settlement Tanks.
18000 - 79000Litres (2.6mø Tanks)
Installation & Operation Guidelines

Kingspan Environmental

Kingspan Environmental Service Contact Numbers:

GB: 0844 846 0500

NI: 028 3025 4077

IRL: 048 3025 4077

Enclosed Documents

Issue	Description	Date
02	CC1087	September 2012

HEALTH & SAFETY

These warnings are provided in the interest of safety. You must read them carefully before installing or using the equipment.

It is important that this document is retained with the equipment for future reference. Should the equipment be transferred to a new owner, always ensure that all relevant documents are supplied in order that the new owner can be acquainted with the functioning of the equipment and the relevant warnings.

Installation should only be carried out by a suitably experienced contractor, following these guidelines.

We recommend the use of a dust mask and gloves when cutting GRP components.

Electrical work should be carried out by a qualified electrician.

Contaminated surface water can contain substances harmful to human health. Any person carrying out maintenance on the equipment should wear suitable protective clothing, including gloves. Good hygiene practice should also be observed.

Access covers should be selected with reference to the location of the unit and traffic loads to be accommodated. These are not (normally) part of the units supply.

When covers are removed precautions must be taken against personnel falling into the unit.

Should you wish to inspect the operation of the equipment, please observe all necessary precautions, including those listed below, which apply to maintenance procedures.

Ensure that you are familiar with the safe working areas and accesses. Ensure that the working area is adequately lit.

Take care to maintain correct posture, particularly when lifting. Use appropriate lifting equipment when necessary. Keep proper footing and balance at all times. Avoid any sharp edges.

ALARM SYSTEMS

High level alarm systems are available for use in Cesspool and Silage tanks.

MAINTENANCE

The correct ongoing maintenance is essential for the proper operation of the equipment. Operators who rely on high level alarms to prompt them to empty the unit run the risk of polluting, should the alarm not work, hence the ongoing maintenance of the alarm systems is fundamental if pollution incidents are to be avoided.

The removal of sludge and liquid from the unit should be carried out by a contractor holding the relevant permits to transport and dispose of such waste. The contractor should refer to the guidelines in this document.

CONTENTS

1.0 Introduction

These Guidelines cover cesspools and silage tanks where no discharge is permitted and Septic tanks where a discharge is permitted to a correctly sized and designed soakaway system. Also Primary & Final Settlement Tanks, which are usually provided for use in conjunction with a biological treatment unit or system (which will be provided with a separate set of installation and operational guidelines describing the full process).

Should you require information regarding soakaway system design and sizing please contact us.
Large capacity septic tanks do require extensive suitable areas of land. In the UK BS: 6297 provides drainage field designs. In Ireland, the single house EPA manual provides design guidance. Percolation test methods to identify soil suitability are slightly different in UK and Ireland.

Equipment selection and application guidance is provided in the UK by the Environment Agency Pollution Prevention Guidelines PPG 4 or in Ireland by the EPA manuals.

You may require permission to install a tank, and permission to discharge. Consult your local authority as the installation may require Planning and Building Control approval. In the UK, you will need to be aware of publication DETR 3/99 (Welsh office 10/99) “Planning requirement in respect to use of non mains sewerage incorporating septic tanks in new development and building regulations H2”. In Ireland, circular letter SP/03 for the protection of groundwater. These documents require detailed site assessments.

Cesspools and Septic tanks are covered within the UK by H2 Building regulations 2000. A building inspector may wish to examine the site before, during or after tank installation and may require site of percolation test results.

In Ireland, Building regulations 1997, Technical guidance document H details the regulations for septic tanks.

Septic tanks shall be of adequate capacity, impermeable to liquids and adequately ventilated.

Tanks should be so sited and constructed that they are not prejudicial to the health of any person, will not contaminate any watercourse, underground water or water supply. They must have adequate means of access for maintenance and emptying.

Septic tanks serving <50 population, i.e. an influent volume of less than 10m3 per day should meet the requirements of EN12566 part 1 or part 4. Larger tanks should meet the relevant requirements of EN 12255.

In England and Wales Cesspools should have a minimum capacity of 18,000 litres for 2 users. This size should be increased by 6,800 litres for each additional user. (Note, some tank capacities included within this manual are of insufficient volume.) Scotland does not permit the use of cesspools.

Buildings which utilise Septic tanks and Cesspools should have a notice affixed within the building. This notice should advise the estimated emptying frequency and the need to use a licensed waste disposal contractor. Details of maintenance requirements and in the case of cesspools, fortnightly checking for overflows are required. The owner is legally responsible for ensuring that the system does not cause pollution, a health hazard or a nuisance.

Silage tanks include a chemically resistant lining, suitable for storing farm silage. For alternative applications, please consult us.

These guidelines represent Best Practice for the installation of the above units. Many years of specialist experience has led to the successful installation of thousands of units it must be noted, however, that these Guidelines are necessarily of a general nature. It is the responsibility of others to verify that they are appropriate for the specific ground conditions and in-service loads of each installation. Similarly, a qualified specialist (e.g. Civil engineering consultant) must verify any information or advice given by employees or agents of the company regarding the design of an installation. Tanks may include internal baffles to control flows and retention times.

These instructions are written to cover all of the above units, so please note that although the text may refer to outlets and discharges; these are <u>not</u> permitted from either Cesspools or Silage tanks.

2.0 Handling & Storage

2.1. Care must be taken to ensure that units are not damaged during delivery and handling on site.

2.2. The design requirements of Our products will frequently mean that the centre of gravity of the unit is "offset". Care must therefore be taken to ensure that the unit is stable when lifting. Rainwater may also collect inside units, particularly if they have been stored on site prior to installation, adding weight and increasing instability. Check units before lifting and pump out any excess water.

2.3. When lifting units, use webbing slings of a suitable specification. DO NOT USE CHAINS.

2.4. A suitable spreader bar should be used to ensure that units are stable and that loads are evenly distributed during lifting. When lifting units, a spreader bar should be used where the slings would otherwise be at an angle > 30 degrees to the vertical.

2.5. Lifting equipment should be selected by taking into account the unit weight, length and the distance of lift required on site.

2.6. We accept no responsibility for the selection of lifting equipment.

2.7. Whenever units are stored or moved on site, ensure that the storage location is free of rock, debris and any sharp objects, which may damage the unit. The units must be placed on ground, which is flat and level to evenly support the base of the unit. Do not roll units.

3.0 Site Planning

The following points should be considered before installation of the equipment:

3.1. The discharge (Septic tanks only) should have the consent of the relevant Environmental Regulator. See Environment Agency Guidelines PPG4.

3.2. The installation should have Planning and Building Control approval. See DETR 3/99 Planning requirement in respect to use of none- mains sewerage incorporating septic Tanks in new development and building regulations H2.

3.3. Position the unit at the maximum distance from habitation. Distances in excess of 15m are usually the minimum acceptable to the planners, but this varies depending on your local authority. The installation must be sited so as not to be prejudicial to health, nor to contaminate water supplies.

3.4. See BS EN 752-4 Drain & sewer systems outside Buildings.

3.5. Consider placing inspection points in the drain line before and after Units

3.6. Tanks and treatment systems installed in series should be set with appropriate falls between them. Allow a minimum of 50mm, if not more. Connecting pipework should never run uphill.

3.7. Consider venting of the unit. Comply with local regulations. Single neck tanks serving single properties should be vented, using the soil stack. Larger tanks serving multiple properties should have a vent fitted to the neck to enable localised high level venting.

3.8. Uncontaminated run off such as roof and surface water should be excluded from the unit to avoid over frequent filling. Separate drains must be provided for surface water which must NOT enter the unit.

3.9. Ground conditions and water table level should be assessed. If the water table will be above the base of the unit at any time of the year, adequate concrete backfill must be provided to avoid flotation. In poorly draining ground, consideration should also be given to the likelihood of flotation due to surface water collecting in the backfill, and an appropriate installation method devised to avoid this.

3.10. Septic Tanks & Final Settlement Tanks only. If the discharge is to a soakaway, a porosity test should be carried out as part of the assessment of suitability for sub-soil drainage. UK – See BS6297, Ireland EPA Manual.

3.11. The unit must be installed at a level that will allow connection to the incoming drain and a free discharge at the system outlet.

3.12. Do not install the unit deeper than necessary, ensure that you purchase any necessary neck extension shafts at the same time as the unit purchased. The minimum invert depth of the unit is shown on the relevant equipment drawing. Units installed with an invert greater than 1.0m will require a civil design specific to the installation.

3.13. Sample/Inspection chambers may be required.

3.14. Adequate access to the unit must be provided for routine maintenance. Vehicles should not be permitted within a distance equal to the depth of the unit, unless suitable structural protection is provided to the installation.

3.15. There must be at least 1 metre of clear, level ground all around the access covers to allow for routine maintenance.

3.16. Provide electrical supply for alarm system. (If required)

3.17. Installation should only be carried out by suitably qualified and experienced contractors in accordance with current Health and Safety Regulations. Electrical work should be carried out by a qualified electrician, working to the latest edition of IEE.

3.18. Manhole covers and frames should suit the duty for the intended location.

4.0 Installation – General

4.1. When units are installed in unstable ground conditions where movement of the surrounding material and/or unit may occur, the connecting pipework should be designed to minimise the risk of damage from differential movement of the unit(s) and/or surrounding material.

4.2. For units with burial depths greater than 1000mm from cover level to the top of the unit, specific site conditions should be taken into consideration and the backfill designed to bear any loads which may be applied during and after installation to prevent the tank being subjected to these loads.

4.3. The excavation must be deep enough to provide bedding and cover depth as determined by the type of surface pavement and loading. Asphalt and concrete pads should extend a minimum of 300mm horizontally beyond the unit in all directions.

4.4. In situations where the excavation will not maintain a vertical wall, it will be necessary to shore up the side walls of the excavation with suitable trench sheets and bracing systems to maintain a vertical wall from the bottom to the top of the excavation. DO NOT completely remove the shoring system until the backfilling is complete, but before the concrete fully hardens.

4.5. In areas where the water table is above the bottom of the excavation and/or the excavation is liable to flood, the excavation should be dewatered using suitable pumping equipment and this should continue until the installation is complete.

4.6. During installation care must be taken to ensure that the body of any unit is uniformly supported so that point loads through the unit are avoided.

4.7. The concrete Specification is a *general* specification. It is not a site specific installation design.

GENERAL CONCRETE SPECIFICATION IN ACCORDANCE WITH BS EN 206-1 (BS 8500-1)		
TYPE OF MIX		(DC) DESIGN
PERMITTED TYPE OF CEMENT		BS 12 (OPC): BS 12 (RHPC): BS 4027 (SRPC)
PERMITTED TYPE OF AGGREGATE (coarse & fine)		BS 882
NOMINAL MAXIMUM SIZE OF AGGREGATE		20 mm
GRADES: C25 /30 C25 /30 C16 /20		REINFORCED & ABOVE GROUND WITH HOLDING DOWN BOLTS REINFORCED (EG. FOR HIGH WATER TABLE) UNREINFORCED (NORMAL CONDITIONS)
MINIMUM CEMENT CONTENT	C30 C20	270 - 280 Kg/M^3 220 - 230 Kg/M^3
SLUMP CLASS		S1 (25mm)
RATE OF SAMPLING		READY MIX CONCRETE SHOULD BE SUPPLIED COMPLETE WITH APPROPRIATE DELIVERY TICKET IN ACCORDANCE WITH BS EN 12350-1
NOTE: STANDARD MIXES SHOULD NOT BE USED WHERE SULPHATES OR OTHER AGGRESSIVE CHEMICALS EXIST IN GROUND WATER		

5.0 Unit Installation

5.1. Excavate a hole of sufficient length and width to accommodate the tank and a minimum 225mm concrete surround and to a depth that allows for the burial depth of the unit plus concrete base slab of 300mm.

5.2. Construct a suitable concrete base slab appropriate to site conditions. Ensure that the slab is flat and level.

5.3. When the concrete base slab has set enough to support the installed load, lower the unit onto the slab using suitable webbing slings and lifting equipment. The selection of lifting equipment is the responsibility of the installer considering unit weight, length, height and distance of lift. As units may include baffles the unit weight will not be evenly balanced.

5.4. Pour no more than 300mm depth of clean water into the unit, avoiding shock loads. DO NOT OVERFILL, the unit is not designed to hold water whilst unsupported.

5.5. Place concrete backfill to approximately 300mm depth under and to the sides of the tank ensuring good compaction to remove voids. Concrete backfill must be manually compacted, however we DO NOT recommend the use of vibrating lances. Allow initial concrete set to occur before proceeding. Ensure concrete fills the voids underneath the tank and feet (if fitted).

5.6. Continue adding concrete backfill, simultaneously keeping the internal water level no more than 300mm above the backfill level at all times, until the backfill is just below the underside of the outlet drain, giving sufficient room to connect the inlet and outlet pipework.

5.7. Connect inlet and outlet drains and vent pipes when safe access to the backfill can be gained.

5.8. Extension necks. Temporarily strut the extension neck(s) to avoid distortion during the concrete installation and back filling.

Flanged extension necks are supplied with mastic and bolts. Line up the nicks. Ensure good & even compression of the mastic so as to provide a watertight seal.

Sites with high ground water will require special attention. Consider sealing by GRP lamination (if skilled operatives are available).

Where more than one neck section is required to suit a deep invert, back-fill section by section. If the extension neck is too long, it can be trimmed using a fine-toothed saw. Ensure that the vent socket if cut out, is replaced elsewhere.

5.9. The inlet & outlet pipe (160mmDia) should be extended to ground level. Diameter 450mm Access covers are available for purchase, to allow for rodding access. The tank is fitted with 160mm Inlet and outlet sockets, pipe adaptors can be provided for an alternative pipe size of 110mm, these are fitted externally to the tank.

5.10. The maximum recommended inlet invert is 1500mm.

5.11. Continue backfilling with concrete over the tank body to the required level. Build up a shell of concrete, minimum 225mm thick, around the access shaft(s), inlet/outlet pipe and alarm access tube (as applicable). Temporarily strut the access shaft to avoid distortion.

5.12. Do not install in trafficked areas unless a suitable top slab has been designed and constructed. The top slab should bear on a suitable foundation to prevent superimposed loads being transmitted to the unit and access shafts. Loads applied to covers and frames must bear on the top slab, not the access shaft.

5.13. The unit should be filled with clean water up to the invert level of the outlet pipe. Check that there is a discharge.

5.14. Leave until the concrete is fully cured. Septic tanks are now ready for use. Cesspools and silage tanks should also be left filled. Do not empty any tank until the concrete backfill has cured to an adequate strength (typically 1 - 2 days minimum).

5.15. Then empty of water and tank may be used as a Cesspools and Silage tank.

6.0 Operation

Cesspools & silage tanks are sized to store a defined volume of liquid. Cesspools and Silage tanks gradually fill with incoming liquid. They must be emptied when full. High level alarms should be fitted to identify when a unit needs emptying.

Septic tanks have both an inlet and outlet. Separated solids both floating and sinking are retained within the tank. Separated liquid discharges through the outlet into a soakaway system.

Septic tanks are sized according to a population equivalent formula. Users should be aware that their sewage enters a septic tank so that they can dispose of their waste considerately. Not everything is suitable for disposal into the tank, for example oils, fats and grease, medications should not be disposed of. We can provide User leaflets with more information for individual householders on request.

In addition, properties should display a notice within the building see section on notices.

Primary tanks precede the biological treatment unit. Their function is to separate primary solids from the incoming wastewater and to allow the separated liquid to transfer into the downstream treatment unit. These units have inlets and outlets and operate under gravity. Tanks are usually compartmented so that most of the solids, both settled and floating are retained in the front compartment. Sludge may be transferred from a final tank for consolidation with the primary solids. Liquid may be transferred into a primary tank to assist with the treatment process and to modify the final effluent quality.

Final tanks follow the biological treatment unit. Their function is to separate biological solids from the treated wastewater and to allow the separated liquid to discharge to the sample chamber or effluent point. The solids produced by the biological process are lighter than primary solids and take longer to settle. These units have inlets and outlets and operate under gravity. Tanks are compartmented so that most of the solids are retained in the front compartment. Sludge may be transferred from the final tank to an upstream primary or balance tank. Treated liquids may be transferred from the final tank to points in the upstream process to assist with treatment or to modify the final effluent quality.

7.0 Maintenance

Septic & settlement tanks accumulate solids and must be emptied periodically. The period between emptying depends up on the population served by the tank or, the amount of use to which the tank is put. Generally the period is at least 3 months, however, tanks which are over utilised may require more frequent emptying. Tanks which are not emptied will release solids which will block the drainage filed and might lead to pollution.

All sludge should be removed when the unit is emptied. Solids should not be allowed to accumulate in more than half the tank as this reduces the retention time and separation efficiency and will detrimentally affect the soakaway system. DO NOT EXTEND THE EMPTYING FREQUENCY, as this can lead to blocked drainage fields/soakaways.

The following calculation can be used to estimate emptying frequency.

Tank volume (in litres) divided by 2 divided by 1.2 = Population x No of days
E.g. 26000 litre tank
26000 / 2 = 13000 / 1.2 =10833
If the population being served by the tank is 30, then the tank needs emptying approx. every 360 days
If the population is 80, then the tank needs to be emptied approx. every 135 days.
Different allowances/calculations should be made for non domestic inputs such as pubs and other commercial premises. Consult us.

Cesspools and silage tanks require emptying when full. A log should be kept recording the frequency of emptying. Alarm probes where fitted, should be removed and inspected to ensure that they are clean and working whenever the waste material is removed from the unit

As the tank size increases, so does the number of necks which provide access for emptying. Please note that many of the tanks contain baffles and solids will settle at the base of each compartment with most solids accumulating at the front end. When the tank is emptied, each neck should be used in turn.

Solids and liquid should be removed from each compartment of a multi compartmented tank, being partially emptied in turn. You should not completely empty one compartment whilst leaving the others full. There should not be more than 300mm difference between the levels in each chamber.

The waste should be removed under the terms of The Waste Management Code of Practice. The Code imposes a duty of care on the waste producer to ensure that the Cleansing contractor is registered with the Environment Agency and that the final disposal of the waste is to a licensed facility. Owners have a responsibility to use licensed waste contractors.

Covers should be replaced.

Our site engineers are available to carry out inspection, service and maintenance visits. We recommend regular maintenance contracts for units with complex operational or electrical requirements. A service to supervise tank emptying is also available. Contact details are provided on the cover sheet.

8.0 Warranty

Taken from 'Kingspan's Terms & Conditions of Sale'

The company will replace or, at its option, properly repair without charge any goods which are found to be defective and which cause failure in normal circumstances of use within a period of twelve months from the date of delivery.

This warranty is conditional upon:

(a) the Buyer notifying the Company of any claim within Seven days of the failure becoming discernible.
(b) the Company being allowed a reasonable opportunity to inspect the goods so as to confirm that they are defective.
(c) the goods not having been modified, mishandled or misused and being used strictly in accordance with any relevant instructions issued by the Company.

The Company's liability under this Clause is limited to the repair or replacement of the defective goods, and does not cover costs of transport, installation or associated site costs, if applicable.

The Company's liability to replace or repair the goods is in lieu of and excludes all other warranties and conditions, and in particular (but without limitation) the Company shall have no liability of any kind for consequential loss or damage.

For any further advice, please contact the Warranty department on 0844 225 2785

A Warranty Form is included in this package, to register your unit for Warranty. Please complete ALL sections of the Form, and return it at your earliest convenience.

Also within this package are Notices, describing the necessary maintenance of the plant in use. This should be fixed within the building.

Our service provider: Kingspan Environmental Services: 0844 846 0500

NOTICES:

KINGSPAN SEPTIC TANK

The foul drainage from this property discharges to a Septic Tank and an irrigation system / soak-away.

The tank requires monthly inspections of the outlet chamber or sample chamber to observe that the effluent is free-flowing and clear. The soak-away should also be inspected regularly.

The septic tank requires emptying at least once every 12 months by a licensed contractor.

THE OWNER OF THE PROPERTY IS LEGALLY RESPONSIBLE FOR ENSURING THAT THE SYSTEM DOES NOT CAUSE POLLUTION, A HEALTH HAZARD OR A NUISANCE.

We recommend that a separate log is kept of all service visits, the log should detail the date and any action taken, e.g. Regular maintenance service, breakdown visit, de-sludge volume removed.

This notice should be fixed by the owner within the building alerting current and future owners to the maintenance requirement. (Building regulation H2 (1.57)

Please contact Kingspan Environmental Services on +44 (0) 844 846 0500 to arrange a maintenance service or to request replacement operating instructions.

KINGSPAN CESSPOOL/SILAGE

The foul drainage from this property is served by a cesspool/Silage Tank.

The system should be emptied when full by a licensed contractor and inspected fortnightly for overflow.

THE OWNER OF THE PROPERTY IS LEGALLY RESPONSIBLE FOR ENSURING THAT THE SYSTEM DOES NOT CAUSE POLLUTION, A HEALTH HAZARD OR A NUISANCE.

We recommend that a separate log is kept of all service visits, the log should detail the date and any action taken, e.g. Emptying volume and frequency.

This notice should be fixed by the owner within the building alerting current and future owners to the maintenance requirement. (Building regulation H2 (1.57)

Please contact Kingspan Environmental Services on +44 (0) 844 846 0500 to arrange a maintenance service or to request replacement operating instructions.

ICP SUDS Mean Annual Flood

Input

Return Period (years) 100 SAAR (mm) 700 Urban 0.000
Area (ha) 0.107 Soil 0.500 Region Number Region 4

Results l/s

QBAR Rural 0.6
QBAR Urban 0.6

Q100 years 1.5

Q1 year 0.5
Q30 years 1.2
Q100 years 1.5

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