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PLANNING DESIGN AND ACCESS SUPPORT STATEMENT

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ON BEHALF OF MR KEITH AUSTIN
NOVEMBER 2023

CASE: PROPOSED CHANGE OF USE FROM GRAZING LAND
TO ERECTION OF 5NO.HOLIDAY PODS
WITH ASSOCIATED CAR PARKING AND LANDSCAPING

LOCATION: LAND AT WESTLANDS FARM
OSMOTHERLEY
NORTHALLERTON
DL6 3AR

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1. INTRODUCTION

Total Planning Solutions (the 'Agent') have prepared this Planning Statement on behalf of Mr Keith Austin (the 'Applicant') to support the detailed planning application for change of use of grazing land and erection of 5no. holiday pods with associated access, parking and landscaping on land at Westland Farm, Osmotherley, Northallerton, DL6 3AR.

This document provides an assessment of the planning policy context and assesses the planning balance. This document should be read in conjunction with other validation documents and plans, outlined in the list below. The purpose of this statement is to support the proposal by setting out the context of the proposed development; outlining the policy framework relevant to the consideration of the planning application; and considering those matters relevant to land use planning and material to the consideration and determination of the subject planning application.

In support of this application are a suite of supporting documents, which comprises the following:

- Planning drawings
- CGI images
- Planning Design and Access statement
- Ecology Report
- Arboricultural tree survey and method statement
- Landscape Appraisal and Planting plan

This Statement will set out the context of the weighted planning balance by considering the Development Plan and any material considerations which are relevant to this determination.

2. BACKGROUND

The application site is in close proximity to Osmotherley village and within walking distance to public right of way and rambling paths to Osmotherley Moor which makes the proposed site perfect location for a new tourist accommodation development as it will be able to attract visitors from the surrounding area and further afield who wish to visit this area and the unique and beautiful attractions which are present within it.

The applicant will aim to attract customers through a company website and advertising to attract people to the development to ensure the sites success. The potential increase in tourism in the area will have an economic benefit with kick start the present economy downfall during this epidemic.

Following the Covid-19 outbreak, it has proven that UK residents have decided to take local holidays in the UK rather than travel abroad due to the high risk and restrictions being imposed on the travel industry.

This epidemic has resulted in a dramatic increase in local economy revenue for the tourism industry within the UK, as it is considered that this development will provide an important 'staycation' option for people within the UK. The proof is already out there with local holiday parks being overwhelmed and being booked well into 2024 season.

Furthermore, the adopted local plan under P29. paragraph 2.32 states '*Tourism and Recreation*

2.32 The North York Moors is a very popular destination for visitors and tourists. Tourism and recreation plays a very important role in the economy of the National Park and its hinterland, supporting 10,923 jobs and creating £647 million a year in income¹⁷. With increased tourism however comes pressure on services and the demand for new facilities such as car parking. One of the key issues for the Local Plan will be how it strikes the right balance between encouraging tourism without impacting adversely on local communities and maintaining the special qualities of the National Park that draw people to it.

Challenge: *Tourism and recreation is the largest component of employment and income within the National Park and will remain key to future prosperity. Policies need to respond to an evolving and expanding tourism market whilst conserving and enhancing the very assets that lead to its popularity as a place to visit.'*

This reaffirms that the proposed development will have an unquestioning positive impact upon the local economy, with additional generated tourism/walkers will greatly assist the following local Osmotherley businesses; the Village Corner Shop, local Fish and Chip Shop, 3 Village Pubs supplying meals and beverages, the corner Cafe offering tea, coffee and homemade cakes, all of which are located in the centre of the village of Osmotherley, just a small 10-minute walk away from the proposed development.

3. PLANNING HISTORY

In terms of relevant planning history, as set out in section 1, the site was recently subject to a withdrawn application relating to the same scheme, thus making this application a re-submission of 22/02628/FUL

Ref: NYM/2013/0347/NM – Non-material amendment to planning approval NYM/2009/0479/FL to allow the workshop/garage/store to be part stone/part rendered- Approved

Ref: NYM/2011/0826/FL - Alterations and extensions to existing farmhouse and erection of workshop/garage/store (revised scheme to NYM/2009/0479/FL) - Approved

Ref: NYM/2010/0369/CVC - Verification check of conditions 3, 5, 8, 9, 10 and 11 of planning approval NYM/2009/0479/FL- CVC Decided

Ref: NYM/2009/0479/FL- Alterations and extensions to existing farmhouse and erection of workshop/garage/store - Approved

4. SITE DESCRIPTION AND SURROUNDING AREA

The proposed development is located at the existing Westlands Farm within the village of Osmotherley. The site is surrounded by open fields to the east, south and west with residential development further afield.

The site currently comprises the existing Westfield Farmhouse, detached garage and numerous agricultural structures associated with the farmland.

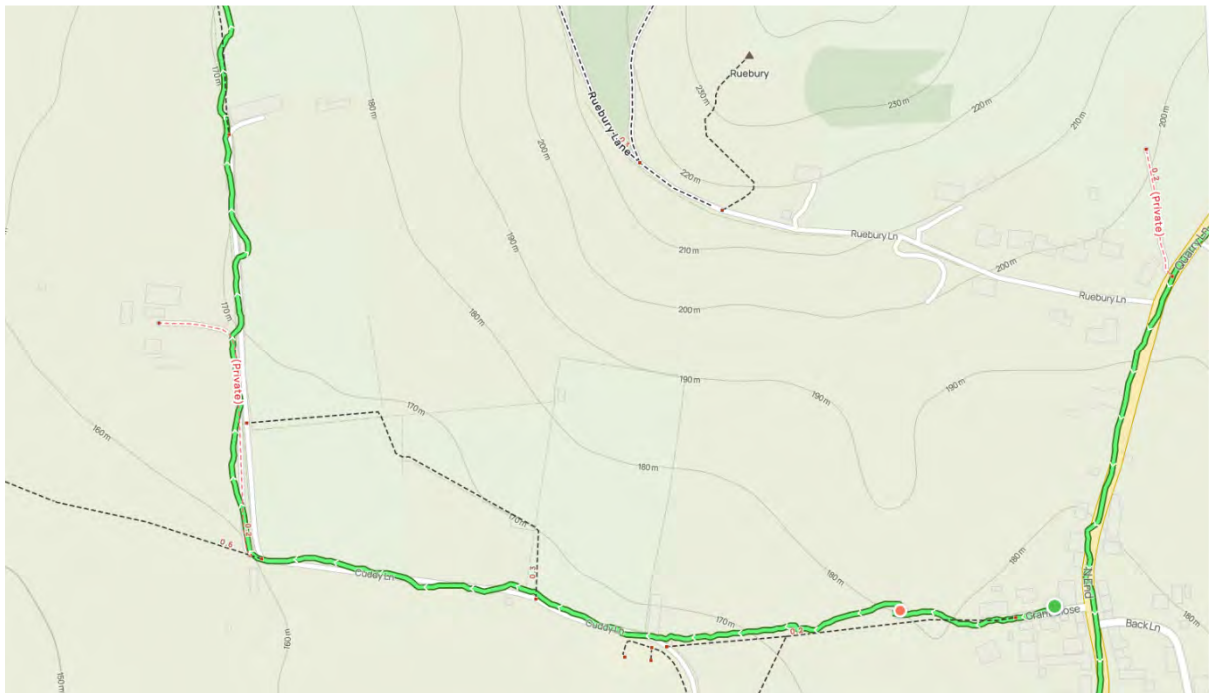
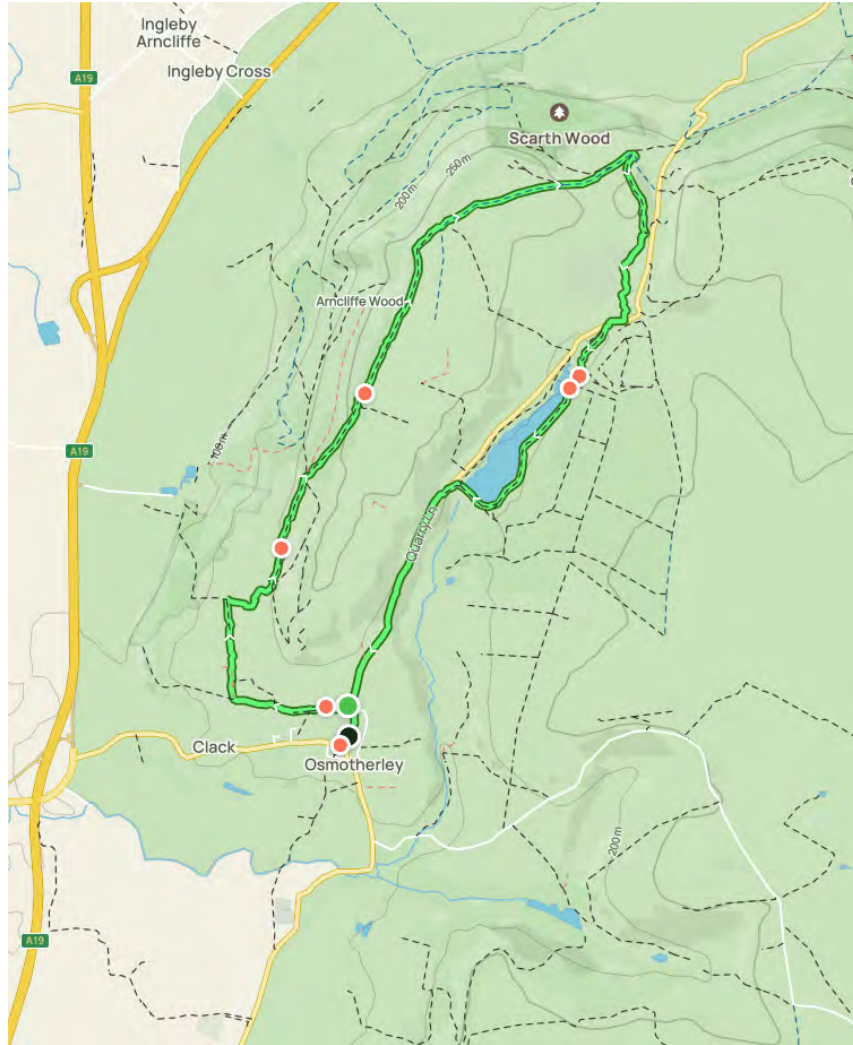
The main road of Clack Lane leads from A19 to the west connecting to Osmotherley village, which connects to Cuddy Lane leading to a private track to the application site. This access road is heavily screened by existing mature hedgerows and trees.



Map 1: North Yorkshire PROW (Public Rights of Way)

The above map illustrates the sites PROW's prominent location in terms of popular walking routes through Osmotherley, including the start/finish of the famous Lyke Wake Walk, crossing of the Coast-to-Coast Walk, along the Cleveland Way Walk and along the Cuddy Lane Circular Walk. The area therefore sees many transit walkers which need accommodation such as that proposed at Westlands Farm.

As mentioned above, the application site lies directly adjacent to a popular walk known as 'Cuddy Circular Trail' (<https://www.alltrails.com/en-gb/explore/recording/cuddy-lane-circular-walk-1b9f382>) which is a great excursion, setting out from the village of Osmotherley, heading to the northwest across open fields leading to the summit of Beacon Hill landscape and finally reaching across the moor to reach the shores of Cod Beck Reservoir and with the trail continuing southwest back to Osmotherley.



Maps 2: Map illustrating Cuddy Lane Circular trail directly adjacent to application site

It is to be duly noted that the application site is not visible from the main highway of Clack Lane (south) nor Cuddy Lane (east) due to the topography of the site and being heavily screened by mature hedge and tree planting, which are illustrated from the Ariel image and site photographs taken from key viewpoints within and out with the application site.





This application site reaffirms that the proposed development will have an unquestioning positive impact upon the local economy, with additional generated tourism/walkers will greatly assist the following local Osmotherley businesses; the Village Corner Shop, local Fish and Chip Shop, 3 Village Pubs supplying meals and beverages, the corner Cafe offering tea, coffee and homemade cakes, all of which are located in the centre of the village of Osmotherley, just a small 10-minute walk away from the proposed development.

5. PROPOSED DEVELOPMENT

The proposed development comprises the erection of 5no. holiday cabins on grazing land adjacent to the farmstead of Westlands Farm, Osmotherley with associated parking for 5no. vehicles and additional soft and hard landscaping.

The site will be accessed from a private track linked to Cuddy Lane, which leads from Clack Lane to the south. As stated in the background and site and surrounding sections of this statement, there are several PROW directly adjacent to the application site.

The proposed development will retain existing hedgerows and trees whilst also providing additional tree and shrub planting and amenity wildflower/grass, ensuring that the proposed development is adequately landscaped and screened from key visual viewpoints. The proposed planting and amenity grass ensure that the development appears largely as green space, retaining the open green field nature of the development site where possible.

HOLIDAY CABIN SITE

The proposed development of holiday cabins will consist of modular timber holiday cabins occupy land on the southern part of the farmstead and adjacent to existing hedgerow which runs alongside the private access track leading into the application site.

The new internal access road will consist of Compacted Limestone Drive in accordance with Arboricultural tree protection method within the root zone of existing trees; this road will connect to an area of hardstanding consisting of Cell system with gravel infill access for 5no. car parking spaces and Visitor parking with the remaining footpath to each cabin consisting of Loose gravel (see landscape planting scheme and assessment).

A Sewerage treatment plant will be installed within the land along with a surface water drainage system with a small area of hardstanding for refuse collection point will be provided within the site.

The proposed chalets are to consist of Larch timber cladding (medium stain colour) sited 6m apart from each other and are to meet Council Licencing legislation in this respect and each measure 3.4m high from ground level and 7m long with a width of 3.2m, which overall can be described as less intrusive or overbearing development in this rural setting.

These five holiday cabins each contain a lounge area, 2 bedrooms, kitchen, bathroom and timber decking area with glazed balustrades with a maximum occupancy level of 2-3 no persons.

The proposed business will be run by the applicant's family members from the Westlands Farm and aim to employ approximately three to five local people in relation to services such as gardeners, cleaners and an onsite maintenance person to support the day to day operations when required to ensure 100 percent occupancy all year round and excellence service to customers to ensure repeat visits to the holiday business.

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ACCESS

Access to the development proposal will be from the existing private track which runs alongside Cuddy Lane and two passing laybys will be created within the applicant's curtilage to allow sufficient passing distance from oncoming and egressing vehicular movements.

The service management plan as detailed below will ensure that visitors to the cabins will be booked and vacated at different times from each occupant to avoid congestion along the private track and Cuddy Lane respectively.

Sheffield Cycle stands will be provided to each cabin for sustainable transport provision and for the cyclist enthusiasts.

SERVICE MANAGEMENT PLAN

The proposed development aims to target family visitors rather than group of individuals given the small tight knit nature of the site and to be more attractive for this regard.

This business model will be controlled by a service management plan by the landowner for the perpetuity of the development if approve.

1. Bookings for each holiday cabin will ensure that each visitor arrives separate times and days along with vacating the site to avoid any highway congestion on the private track.
2. The site will be managed by the landowner by use of CCTV surveillance and regular site visits during the day and evening.

3. Contact details for landowner will be provided to local neighbours and parish Council to advise of any noise/disturbance issues if arisen for investigation and immediate action.
4. The management plan will state that the maximum occupancy of the holiday cabins shall be 3no. persons
5. No groups of individual parties will be allowed.
6. No Loud Music is to be played on the site.
7. No Anti-social behaviour will be tolerated, and immediate eviction will be enforced by landowner.
8. All light fittings shall be dusk till dawn and fitted with shielding to avoid light spillage onto adjacent highway and neighbouring properties and in accordance with Dark Skies SPD

DRAINAGE

As per the attached specification documentation under Appendix 1 with this application; the applicant proposes an Otto Graf GmbH, Carl-Zeiss-Str. 2-6, Germany, Packaged domestic wastewater treatment plant, for treatment of domestic wastewater for 3-18 inhabitants.

This is to be sited within the application site to the southern point of the site, away from the chalets in accordance with legislation and accessible for maintenance vehicles. The surface water run off from the SPTP will be connected to a sustainable land drainage system as detailed in the sections below



6. PLANNING POLICY CONTEXT – DEVELOPMENT PLAN

Section 38(6) of the Planning and Compulsory Purchase Act 2004, is relevant in determining planning applications and states that:

“If regard is to be had to the development plan for the purpose of any determination to be made under the planning Acts the determination must be made in accordance with the plan unless material considerations indicate otherwise”.

The above legal requirement is also reiterated within the National Planning Policy Framework (2023). This section therefore examines the policies contained within the “Development Plan” which comprises the following:

The Statutory Development Plan for this site comprises the policies contained within the North York Moors Local Plan (adopted 2020). The following policies contained within the Local Plan are considered to be of relevance to the proposed development:

- Strategic Policy A - Achieving National Park Purposes and Sustainable Development
- Strategic Policy B – The Spatial Strategy
- Strategic Policy C – Quality and Design of Development
- Strategic Policy G - Landscape
- Strategic Policy H - Habitats, Wildlife, Biodiversity and Geodiversity
- Strategic Policy J – Tourism and Recreation
- Strategic Policy K – The Rural Economy
- Policy CO2 – Highways
- Policy ENV2 - Tranquillity
- Policy ENV4 – Dark Night Skies
- Policy ENV5 - Flood Risk
- Policy UE1 – Location of Tourism and Recreation Development
- Policy UE2 – Camping, Glamping, Caravans and Cabins
- Policy UE4 – New Holiday Accommodation Within Residential Curtilages

Supplementary Planning Documents (SPDs)

Also, of relevance to this development site is the Design Guide SPD which will be considered as part of this application.

7. NATIONAL PLANNING POLICY FRAMEWORK (2023), PLANNING POLICY GUIDANCE (PPG) AND OTHER MATERIAL CONSIDERATIONS

The NPPF was revised in 2023 and provides the national planning guidance against which this application will be determined and is a material consideration in the determination of this application. The NPPF is the most significant of material considerations and significant weight is given to this policy document.

The NPPF provides direction for decision making in planning applications stating that the both plans and decisions should apply a presumption in favour of sustainable development, meaning for decision makers (paragraph 11):

- approving development proposals that accord with an up-to-date development plan without delay; or

- where there are no relevant development plan policies, or the policies which are most important for determining the application are out-of-date, granting permission unless:

- i. the application of policies in this Framework that protect areas or assets of particular importance provides a clear reason for refusing the development proposed; or
- ii. any adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies in this Framework taken as a whole.

The Presumption in Favour of Sustainable Development

The NPPF at paragraph 10 reaffirms the presumption in favour of sustainable development, reaffirming the three overarching objectives as follows (paragraph 8):

- a) **an economic objective** – to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure.
- b) **a social objective** – to support strong, vibrant, and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering a well-designed and safe built environment, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being; and
- c) **an environmental objective** – to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.

These three objectives are considered to be interdependent and are to be pursued in mutually supportive ways to secure net gains across each of the objectives. We consider that the proposed development represents a sustainable development and accords with paragraph 8 of the NPPF in the following ways:

AN ECONOMIC OBJECTIVE

The proposed development would be a small part of diversification of the existing agricultural use at Westland Farm and would support their economic viability/future.

The provision of this facility will attract internal visitors, those travelling within the North York Moors National Park, but also external visitors, those travelling into the county therefore boosting the tourism/visitor economy within the North York Moors National Park.

There will be economic benefits associated with the proposed development for a new holiday cabin development in terms of attracting tourism to the local area which in turn will increase local expenditure supporting the retention of existing local services and facilities in the area such as the Village Corner Shop, local Fish and Chip Shop, 3

Village Pubs supplying meals and beverages, the corner Cafe offering tea, coffee and home made cakes, all of which are located in the centre of the village of Osmotherley, just a small 10-minute walk away from the proposed development.

There would be additional economic benefits in the form of expenditure related to construction phase of the development and post operational maintenance works along with job creation and retention support.

Moreover, it is noted that the proposed development is sought to help support the retention of this existing business whilst also capitalising on the new demand for 'staycation' holidays in the UK because of Covid-19 epidemic fallout, which the economy remains to be at downfall.

A SOCIAL OBJECTIVE

The proposed development would provide tourist accommodation within Osmotherley which would increase interest/visitors to the locality and increase the overall footfall in the area. This would provide increased numbers which would serve as a wider boost for local surrounding businesses.

The increase in tourists in the area will also have social benefits in regard to opportunities for walking, cycling and general being in the open countryside. This will have a positive impact to the health and wellbeing of a range of occupiers at the site.

AN ENVIRONMENTAL OBJECTIVE

Regarding the environmental benefits of the development it should be noted that sustainable development principles will be adhered to.

The proposed development is for holiday cabins which are temporary structures which can be removed at any point in the future, therefore, limiting any impact on the environment at this location.

It is also recognised that environmental sustainability is also applicable to the construction and design of the development itself. The proposed chalets will consist of larch timber clad modular units and additional soft landscaping with an increase in Bio Net gain diversity with the imposition of wildflower/meadow.

Section 4. Decision-making

Paragraph 38 of the NPPF states that Local planning authorities should approach decisions on proposed development in a positive and creative way. They should use the full range of planning tools available, including brownfield registers and permission in principle, and work proactively with applicants to secure developments that will improve the economic, social and environmental conditions of the area. Decision-makers at every level should seek to approve applications for sustainable development where possible.

Section 6. Building a strong, competitive economy

Paragraph 81 advises that planning policies and decisions should help create the conditions in which businesses can invest, expand and adapt. Significant weight should be placed on the need to support economic growth and productivity, taking into account both local business needs and wider opportunities for development. The

approach taken should allow each area to build on its strengths, counter any weaknesses and address the challenges of the future. This is particularly important **where Britain can be a global leader in driving innovation**⁴², and in areas with high levels of productivity, which should be able to capitalise on their performance and potential.

Under ‘Supporting a prosperous rural economy’ sub paragraph of the NPPF, Paragraph 84 states planning policies and decisions should enable:

- a) the sustainable growth and expansion of all types of business in rural areas, both through conversion of existing buildings and well-designed new buildings.
- b) the development and diversification of agricultural and other land-based rural businesses.
- c) sustainable rural tourism and leisure developments which respect the character of the countryside; and
- d) the retention and development of accessible local services and community facilities, such as local shops, meeting places, sports venues, open space, cultural buildings, public houses and places of worship.

Paragraph 85 also advises that planning policies and decisions should recognise that sites to meet local business and community needs in rural areas may have to be found adjacent to or beyond existing settlements, and in locations that are not well served by public transport. In these circumstances it will be important to ensure that development is sensitive to its surroundings, does not have an unacceptable impact on local roads and exploits any opportunities to make a location more sustainable (for example by improving the scope for access on foot, by cycling or by public transport). The use of previously developed land, and sites that are physically well-related to existing settlements, should be encouraged where suitable opportunities exist.

Section 8. Promoting healthy and safe communities

Paragraph 92 states that Planning policies and decisions should aim to achieve healthy, inclusive and safe places which:

- a) promote social interaction, including opportunities for meetings between people who might not otherwise come into contact with each other – for example through mixed-use developments, strong neighbourhood centres, street layouts that allow for easy pedestrian and cycle connections within and between neighbourhoods, and active street frontages.
- b) are safe and accessible, so that crime and disorder, and the fear of crime, do not undermine the quality of life or community cohesion – for example through the use of attractive, well-designed, clear and legible pedestrian and cycle routes, and high quality public space, which encourage the active and continual use of public areas; and
- c) enable and support healthy lifestyles, especially where this would address identified local health and well-being needs – for example through the provision of safe and accessible green infrastructure, sports facilities, local shops, access to healthier food, allotments and layouts that encourage walking and cycling.

Section 9. Promoting sustainable transport

Paragraph 104 states that transport issues should be considered from the earliest stages of plan-making and development proposals, so that:

- a) the potential impacts of development on transport networks can be addressed.

- b) opportunities from existing or proposed transport infrastructure, and changing transport technology and usage, are realised – for example in relation to the scale, location or density of development that can be accommodated;
- c) opportunities to promote walking, cycling and public transport use are identified and pursued.
- d) the environmental impacts of traffic and transport infrastructure can be identified, assessed and taken into account – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains; and
- e) patterns of movement, streets, parking and other transport considerations are integral to the design of schemes and contribute to making high quality places.

Paragraph 107 of the NPPF states that if setting local parking standards for residential and non-residential development, policies should consider:

- a) the accessibility of the development.
- b) the type, mix and use of development;
- c) the availability of and opportunities for public transport.
- d) local car ownership levels; and
- e) the need to ensure an adequate provision of spaces for charging plug-in and other ultra-low emission vehicles.

Paragraph 111 states that development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe.

Section 11. Making effective use of land

Paragraph 120 states that Planning policies and decisions should:

- a) encourage multiple benefits from both urban and rural land, including through mixed use schemes and taking opportunities to achieve net environmental gains – such as developments that would enable new habitat creation or improve public access to the countryside.
- b) recognise that some undeveloped land can perform many functions, such as for wildlife, recreation, flood risk mitigation, cooling/shading, carbon storage or food production;
- c) give substantial weight to the value of using suitable brownfield land within settlements for homes and other identified needs, and support appropriate opportunities to remediate despoiled, degraded, derelict, contaminated or unstable land.
- d) promote and support the development of under-utilised land and buildings, especially if this would help to meet identified needs for housing where land supply is constrained and available sites could be used more effectively (for example converting space above shops, and building on or above service yards, car parks, lock-ups and railway infrastructure)⁴⁸; and
- e) support opportunities to use the airspace above existing residential and commercial premises for new homes. In particular, they should allow upward extensions where the development would be consistent with the prevailing height and form of neighbouring properties and the overall street scene, is well-designed (including complying with any

local design policies and standards) and can maintain safe access and egress for occupiers.

Section 12. Achieving well-designed places

Paragraph 126 states that the creation of high quality, beautiful and sustainable buildings and places is fundamental to what the planning and development process should achieve. Good design is a key aspect of sustainable development, creates better places in which to live and work and helps make development acceptable to communities. Being clear about design expectations, and how these will be tested, is essential for achieving this. So too is effective engagement between applicants, communities, local planning authorities and other interests throughout the process.

Paragraph 130 states that Planning policies and decisions should ensure that developments:

- a) will function well and add to the overall quality of the area, not just for the short term but over the lifetime of the development.
- b) are visually attractive as a result of good architecture, layout and appropriate and effective landscaping.
- c) are sympathetic to local character and history, including the surrounding built environment and landscape setting, while not preventing or discouraging appropriate innovation or change (such as increased densities);
- d) establish or maintain a strong sense of place, using the arrangement of streets, spaces, building types and materials to create attractive, welcoming and distinctive places to live, work and visit.
- e) optimise the potential of the site to accommodate and sustain an appropriate amount and mix of development (including green and other public space) and support local facilities and transport networks; and
- f) create places that are safe, inclusive, and accessible and which promote health and well-being, with a high standard of amenity for existing and future users⁴⁹; and where crime and disorder, and the fear of crime, do not undermine the quality of life or community cohesion and resilience.

Paragraph 131 states that trees make an important contribution to the character and quality of urban environments and can also help mitigate and adapt to climate change. Planning policies and decisions should ensure that new streets are tree-lined⁵⁰, that opportunities are taken to incorporate trees elsewhere in developments (such as parks and community orchards), that appropriate measures are in place to secure the long-term maintenance of newly-planted trees, and that existing trees are retained wherever possible. Applicants and local planning authorities should work with highways officers and tree officers to ensure that the right trees are planted in the right places, and solutions are found that are compatible with highways standards and the needs of different users.

Section 14. Meeting the challenge of climate change, flooding and coastal change

Paragraph 152 states that The planning system should support the transition to a low carbon future in a changing climate, taking full account of flood risk and coastal change. It should help to: shape places in ways that contribute to radical reductions in greenhouse gas emissions, minimise vulnerability and improve resilience; encourage the reuse of existing resources, including the conversion of existing buildings; and support renewable and low carbon energy and associated infrastructure.

Paragraph 154 states that New development should be planned for in ways that:

- a) avoid increased vulnerability to the range of impacts arising from climate change. When new development is brought forward in areas which are vulnerable, care should be taken to ensure that risks can be managed through suitable adaptation measures, including through the planning of green infrastructure; and
- b) can help to reduce greenhouse gas emissions, such as through its location, orientation and design. Any local requirements for the sustainability of buildings should reflect the Government's policy for national technical standards.

Paragraph 155 states that to help increase the use and supply of renewable and low carbon energy and heat, plans should:

- a) provide a positive strategy for energy from these sources, that maximises the potential for suitable development, while ensuring that adverse impacts are addressed satisfactorily (including cumulative landscape and visual impacts);
- b) consider identifying suitable areas for renewable and low carbon energy sources, and supporting infrastructure, where this would help secure their development; and
- c) identify opportunities for development to draw its energy supply from decentralised, renewable or low carbon energy supply systems and for co-locating potential heat customers and suppliers.

Paragraph 158 states when determining planning applications for renewable and low carbon development, local planning authorities should:

- a) not require applicants to demonstrate the overall need for renewable or low carbon energy, and recognise that even small-scale projects provide a valuable contribution to cutting greenhouse gas emissions.

Under sub section Planning and flood risk

Paragraph 159 states that inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk (whether existing or future). Where development is necessary in such areas, the development should be made safe for its lifetime without increasing flood risk elsewhere.

Paragraph 167 states that when determining any planning applications, local planning authorities should ensure that flood risk is not increased elsewhere. Where appropriate, applications should be supported by a site-specific flood-risk assessment⁵⁵. Development should only be allowed in areas at risk of flooding where, in the light of this assessment (and the sequential and exception tests, as applicable) it can be demonstrated that:

- a) within the site, the most vulnerable development is located in areas of lowest flood risk, unless there are overriding reasons to prefer a different location.
- b) the development is appropriately flood resistant and resilient such that, in the event of a flood, it could be quickly brought back into use without significant refurbishment;
- c) it incorporates sustainable drainage systems, unless there is clear evidence that this would be inappropriate.
- d) any residual risk can be safely managed; and

e) safe access and escape routes are included where appropriate, as part of an agreed emergency plan.

Paragraph 169 states that major developments should incorporate sustainable drainage systems unless there is clear evidence that this would be inappropriate. The systems used should:

- a) take account of advice from the lead local flood authority.
- b) have appropriate proposed minimum operational standards;
- c) have maintenance arrangements in place to ensure an acceptable standard of operation for the lifetime of the development; and
- d) where possible, provide multifunctional benefits.

Section 15. Conserving and enhancing the natural environment.

Paragraph 174 states that Planning policies and decisions should contribute to and enhance the natural and local environment by:

- a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);
- b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;
- c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate;
- d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;
- e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and
- f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate

Under Sub section Habitats and biodiversity

Paragraph 180 states that when determining planning applications, local planning authorities should apply the following principles:

- a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
- b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;

c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons⁶³ and a suitable compensation strategy exists; and
d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.

Planning Practice Guidance (PPG)

The updated national Planning Practice Guide (PPG) supports the NPPF and provides guidance on its interpretation.

8. DESIGN AND ACCESS

The purpose of this section of the Statement is to assess the proposal in respect of the use and amount of development; its scale, layout and appearance; landscaping; and accessibility. In doing so, it comprises the Design and Access Statement required for major development proposals under the Development Management Procedure Order 2015.

The Development

The proposed development is for the creation of holiday accommodation in the form of 5no. holiday timber clad cabins with associated landscaping and other works set within 0.5-hectare site. The site is presently grazing land with a mature landscaping to its perimeters.

The development will introduce a holiday accommodation in the area to boost local tourism and support economic benefits such as local businesses within the Larger village such as Osmotherley.

Use and Amount

The application proposal is for a change of use for part of grazing land (0.5ha) for the siting of 5no. dedicated holiday cabins on the site.

For clarity and as per the service management plan which the landowner seeks to form part of his business model; the proposed cabins constitute a small-scale tourist development to reflect the tranquil nature of the site. It should also be noted that staff will be employed in terms of management of the site and site rules will be issued to all guests prior to check in to ensure there will be no detrimental impact in terms of nuisance at the site.

The amount of accommodation is at an appropriate density for the extent of the site. This reflects the desire of the applicant to provide a degree of exclusivity to the site and equally to devise a scheme that is in keeping with the wider site setting. The proposed scheme, therefore, seeks an appropriate amount of development and recognises the landscape setting will be addressed later and is the focus of the accompanying Landscape character assessment and planting plan.

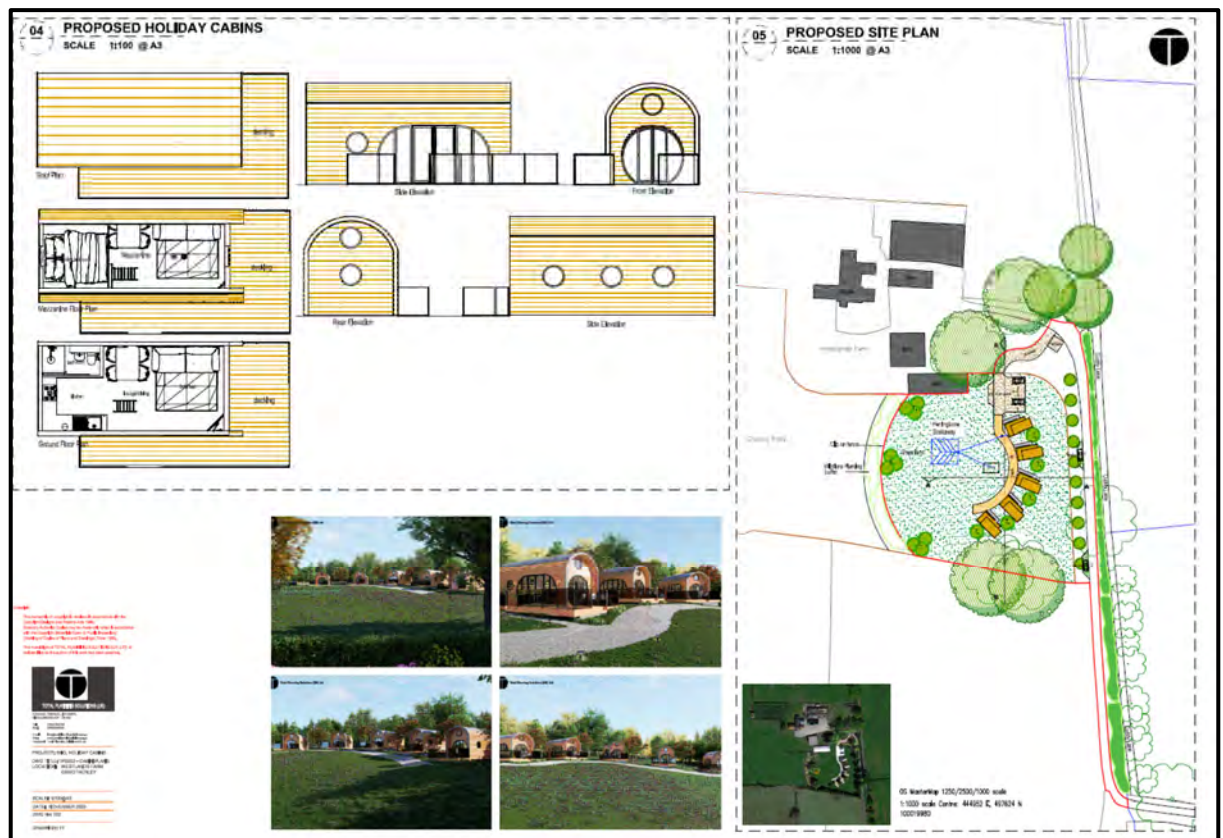
Scale

The proposed accommodation will consist of typical single storey cabin. Each will be constructed of timber larch cladding and the proposed units will not appear unduly large or have an overly dominant upon the local area (individually or cumulatively) or give the impression of are deemed suitable for the context, where they would not comprise an incongruous development, given the existing landscape screening and proposed mature planting proposed.

Layout

The proposed accommodation would be laid out in accordance with the layout plan submitted with the application, with the existing private access used to serve the development. The proposed tree/shrub planting within and out with the development site, would be supplemented and retained.

The buildings are intended for holiday use and are as a result of a single storey and not residential in nature. The layout provides for a minimum of 6 metres between the units and allows for the orientation of external decking areas/aspect to each unit to be to the southwest facing within the site and screened by landscaping details as set out in the submitted landscaping scheme. As aforementioned, the designated car parking area will be located to the northern point of the site. It is therefore considered that the development is of an appropriate layout for the site.



Appearance

The appearance of the cabins with construction in timber cladding are typical of the current design of such buildings (see drawings submitted with the application). The timber materials will minimise visual impact with the proposed layout including landscaping (subject to a reasonably worded planning condition) to break up any perceived monotony of layout which result in the appearance of the development being wholly appropriate.

Landscaping

The siting of the proposed cabins within the existing clearing will be obscured from viewpoints out with the site due to the existing mature tree lines and hedgerows which can be observed from site visit. With the additional landscaping proposed (controlled by way condition), the proposed bolstered planning will ensure screening throughout the whole year.

Accessibility

Access to the development proposal will be from the existing private track which runs alongside Cuddy Lane and two passing laybys will be created within the applicant's curtilage to allow sufficient passing distance from oncoming and egressing vehicular movements.

The service management plan as detailed below will ensure that visitors to the cabins will be booked and vacated at different times from each occupant to avoid congestion along the private track and Cuddy Lane respectively.

Sheffield Cycle stands will be provided to each cabin for sustainable transport provision and for the cyclist enthusiasts.

On this basis and along with the proposed capacity, it is considered that the surrounding highway network can accommodate further vehicular movements in the light of its identified characteristics and the likely nature of traffic generated by the scheme. The predominant number of vehicles accessing the site are main are private cars and there is ample on-site parking.

Heritage

The site does not lie within a protected landscape designation nor are any neighbouring buildings listed or the site sit in a context of possible archaeological interest – equally the nature of the development would not be invasive in this respect in any event. As a consequence, there would be no impact upon any perceived 'heritage asset'.

Design and Access Conclusions

The submitted scheme has evolved from an initial assessment of the wider site context which considers the cumulative impact of the development on the site to an appropriate level of detail. The design and access aspects are considered to not raise any fundamental issues. The proposed accommodation (scale, nature and layout etc) is entirely suitable within the prevailing context and will give rise to a positive addition to the local economy. It is considered that there will limited impact on the local highway network and other users.

9. KEY ISSUES AND PLANNING BALANCE

Based upon the assessment of planning policy and the supporting documentation this section will consider the key issues identified by this and assess the planning balance. The following issues are considered:

- Principle of Development;
- Scale, Layout and Design;
- Landscape Impact;
- Highways and Access;
- Flood Risk and Drainage;
- Nutrient Neutrality;
- Waste and Refuse Collection; and
- Biodiversity.

Principle of Development

Paragraph 83 of the NPPF states that it supports the sustainable growth and expansion of all types of business in rural areas and supports new tourism developments which respect the character of the countryside.

Paragraph 84 of the NPPF states that planning policies and decisions should enable sustainable rural tourism and leisure developments which respect the character of the countryside.

Policy UE1 states that tourism and recreation development will only be permitted where it is located within the main built-up area of one of the villages set out in Policy B.

For clarification policy B sets out that this includes the village of Osmotherley, which is a designated Larger Village.

Policy UE2 sets out that the following criteria will be expected to be met for small scale holiday accommodation:

- a. The accommodation avoids extensive alteration to ground levels and has a low environmental impact through limited foundations to enable the accommodation to be removed without harm to the landscape.
- b. It does not lead to unacceptable harm in terms of noise and activity on the immediate area;
- c. The proposal does not, in combination with existing development detract from the character, tranquillity or visual attractiveness of the area; and
- d. The accommodation is of a high-quality design which complements its surroundings.

The proposed development will consist of erecting and siting the proposed cabins in in line with the topography of the land in terms of following the gradient which decreases in levels from the access point to the last cabin (see section plans).

The proposed development will provide wild flora and tree planting and the laying of a gravel path in terms of alterations to the existing landscape to ensure a low environmental impact.

In regard to noise and activity it should be noted that the development is of a small scale and is not within close proximity to any residential properties other than that at

Westlands Farm. The site has been designed to a low density to ensure a high-quality product of tourist accommodation which will be further secured by a service management plan which has been provided within this application proposal.

As observed by submitted plans, planting plan and CGI, the development is considered to be of a high-quality design which compliments the surroundings.

Policy UE4 states that development of new holiday accommodation within a residential curtilage will only be permitted where:

1. It makes use of an existing building which is of architectural or historic interest and makes a positive contribution to the character of the surrounding area;
2. It would not detract from the character or appearance of the locality;
3. It is of an appropriate scale; and
4. There is no unacceptable harm in terms of noise and activity on the amenity of the neighbourhood.

We consider the proposed development to be within the outer edge of the residential curtilage of Westlands Farm and will be located a significant distance from the property, on the adjacent field. It is therefore deemed that there will be no detrimental impact to residential amenity of the existing property in accordance with the aims of policy UE4.

In addition, the proposed development would add a positive contribution to the character of the surrounding area and would not detract from the character or appearance of the locality and is off an appropriate scale in accordance with the criteria of Policy UE4.

Policy J states that Tourism and recreation development will be supported where:

1. It is consistent with the principles of sustainable tourism set out in paragraph 5.4;
2. It does not lead to unacceptable harm to the local landscape character or an ecological or archaeological asset;
3. It provides and protects opportunities for all people to increase their awareness, understanding and enjoyment of the special qualities of the National Park in a manner that will not undermine the enjoyment of those qualities by other visitors or the quality of life of residents;
4. It is of a quality, scale and design that takes into account and reflects the sensitivity of the local landscape;
5. Any accommodation is used only for short term holiday stays;
6. It does not compromise the enjoyment of existing tourism and recreational facilities or Public Rights of Way; and
7. It does not lead to unacceptable harm in terms of noise and activity to the immediate neighbourhood.

It is significant to note that the proposed location is a key factor to any success of a holiday site and in this case, the application site is within the National Park which makes the proposed site perfect location for a new tourist accommodation development as it will be able to attract significant numbers of visitors from the surrounding area and further afield who wish to visit this area and the unique and beautiful attractions which are present within it.

In addition to the location of the site, there is a designated directly adjacent to a Public Right of Way (PRoW) within the site thus enhancing the use of this route. The routes

provide direct access to Mount Grace Priory, Carlton Bank, Hemsley, Sutton Bank and a gateway to the North Yorkshire Moors or The Dales with many more walks. The accessibility to a network of PRowS is a key consideration in determining a development of this nature's use in regard to sustainability.

This can be seen within a recent appeal decision for a site at Newby Farm, Newby (appeal ref: APP/G2713/W/22/3294243) albeit within a neighbouring authority and not North Yorkshire Moor Planning authority, it remains a material consideration in which the inspector deems this rural appeal site location being 'sustainable' as a result of the nearby PRow.

Furthermore, the inspector makes the case that the fact that the proposal would provide a direct connection to a nearby PRow means that it would exploit an opportunity to make its location more sustainable.

In this case and as evidenced within the Background and Site and Surrounding sections of this planning statement, it should also be noted that the site holds a prominent location in terms of popular walking routes through Osmotherley, including the start/finish of the famous Lyke Wake Walk, crossing of the Coast-to-Coast Walk, along the Cleveland Way Walk and along the Cuddy Lane Circular Walk. The area therefore sees many transit walkers which need accommodation such as that proposed at Westlands Farm.

Further to the above, the proposed development is of a scale and design which is appropriate to its location, ensuring it would not harm the character of the surrounding area and would work in conjunction with the existing farming business at the site. It would be sited at considerable separation distances from the existing residential property and neighbouring land uses to negate any perceived harm in terms of living conditions; the occupation will be limited to holiday purposes only, will be sited in close proximity to local services within the larger village of Osmotherley.

Finally, given the nature of the proposed development for tourist accommodation it can be concluded the development would fall in line with all criteria laid out within policy J.

Policy K states that Development that fosters the economic and social well-being of local communities within the National Park will be supported where one or more of the following criteria are met:

2. It helps maintain or increase job opportunities in the agricultural, forestry and tourism sectors which help maintain the land based economy and cultural heritage of the National Park or contribute to National Park purposes;
3. It provides for and supports small and micro business through the provision of flexible start-up businesses;

Tourist accommodation in itself is a widely accepted form of development which offers a contribution to the rural economy. The proposal would make provision for tourist accommodation within Osmotherley and as visitors using the proposed accommodation would be likely to visit other places to eat, drink and utilise leisure and recreation facilities, the proposal would make a positive contribution to the local economy.

The additional generated tourism/walkers will greatly assist the following local Osmotherley businesses; the Village Corner Shop, local Fish and Chip Shop, 3 Village Pubs supplying meals and beverages, the corner Cafe offering tea, coffee and

homemade cakes, all of which are located in the centre of the village of Osmotherley, just a small 10-minute walk away from the proposed development.

It is broadly recognised that additional overnight tourist accommodation would contribute to the wider local economy as a base for visiting both local and regional services, facilities and attractions, such as Historical and Heritage sites, Museums and Galleries, Parks and Gardens, Outdoor Pursuits, Arts and Culture and Landmarks and Viewpoints, which this location provides.

It is also anticipated that a minimum of three to five full time working staff will be required employed to oversee the management/ maintenance of the site on a day-to-day basis which supports policy K which seeks to support the contribution this development would have to the wider local economy in terms of job creation.

Overall, it is clear that the current proposals will result in a significant economic benefit for the rural community albeit on a small scale, as encouraged and actively sought under the policy K of the Local Plan and in addition, to the existing agricultural or grazing use of the site.

In summary, it is considered that the principle of development is confirmed by the sites desirable location within Osmotherley and suitability for tourist accommodation in regard to the existing Westlands Farm, in accordance with policies UE1, UE2, UE4, J and K.

Design, Scale and Layout

Chapter 12 of the NPPF is concerned with 'Achieving well-designed places', stating in paragraph 124 that the 'Creation of high-quality buildings and places is fundamental to what planning and development process should achieve. Good design is a key aspect of sustainable development creates better places in which to live and work and helps to make development acceptable to communities.

Policy C of the local plan sets out design criteria for development within the National Park. The key criteria relevant to this application are as follows:

1. The proposal is of a high quality design that will make a positive contribution to the local environment in accordance with the principles set out in the North York Moors National Park Authority Design Guide;
2. The proposal incorporates good quality construction materials and design details that reflect and complement the architectural character and form of the original building and/or that of the local vernacular;
3. The siting, orientation, layout and density of the proposal complement existing buildings and the form of the settlement, preserving or enhancing views into and out of the site and creating spaces around and between buildings which contribute to the character and quality of the locality;
4. The scale, height, massing and form of the proposal are compatible with surrounding buildings and will not have an adverse impact upon the amenities of adjoining occupiers;

The proposed development comprises low density tourist accommodation within the existing Westlands Farm. To the north of the site is an existing dwelling, detached garage and numerous agricultural barns. It is considered the proposed layout and positioning of the chalets would respect the existing buildings and nature of the farm.

As part of the proposed development there are also landscaping proposals including a wild flora planting buffer and tree planting to provide natural boundaries around the holiday cabins.

To conclude, we consider that the proposed development has been designed to the highest standard to ensure that there will be no detrimental impact on the rural character at this location and that the development will assimilate well within the open countryside location to ensure it respects and enhances this area, in accordance with adopted local and national planning policy.

Landscape Impact Assessment

Strategic Policy G - Landscape of the Local Plan states that the high quality, diverse and distinctive landscapes of the North York Moors will be conserved and enhanced, and great weight will be given to landscape considerations in planning decisions and development will be supported where the location, scale and detailed design of the scheme respects and enhances the local landscape character type as defined in the North York Moors Landscape Assessment.

This application is supported by a comprehensive landscape impact appraisal by competent landscape architect practice 'Leeming associates'.

The appraisal has considered all receptor viewpoints, the existing planting of the application site, which has matured in time to screen the main viewpoint from the adjacent highway and summaries the visual impact with the following extract as below with the assistance of photographs and planting plan;

"9.0 Summary

Landscape Character

9.1 The type and small-scale nature of the development will not detract from the existing character of the area and guidelines for the LCT9 will be followed by adding native hedges and trees.

Planning Policy; Landscape and Environmental Assets

9.3 The proposed five cabins and car park support North York Moors Local Plan (July 2020) Strategic Policies G and J and Policy UE2.

Visual Impact

9.4 The only impact from the development will be minimal from the three PRow in the local area and it will be indistinguishable from the minor road 1km to the east.

10.0 Conclusion

10.1 This appraisal has demonstrated that potential impact of the proposed development is extremely limited. There will be no impact on landscape character and visual impact will be extremely limited and confined to minimal impact from the PRow's in the local area."

Tree/Hedge Protection

The application is supported by a Arboricultural Impact Assessment by Elliot Consultancy and confirms that the development proposed in relation to access road,

construction phase and installation of services/utilities, the development will have minimal impact upon tree roots subject to mitigation measures advised within this report and can be considered reasonable to be controlled by condition.

Based upon the supporting information and assessment which deems the proposal to have minor impact on the landscape character and existing trees of the surrounding area and for these reasons, it is considered to be in line with SP 'G' of the Local Plan. Further details can be found in the submitted reports.

Ecology and Biodiversity

Strategic Policy H - Habitats, Wildlife, Biodiversity and Geodiversity states the following criteria;

"1. The conservation, restoration and enhancement of habitats, wildlife, biodiversity and geodiversity in the North York Moors National Park will be given great weight in decision making.

2. All development and activities will be expected to:

a) Maintain and where appropriate enhance features of ecological value and recognised geodiversity assets; b) Maximise opportunities to strengthen the integrity and resilience of habitats and species within the National Park and provide a net gain in biodiversity; including those species for which the National Park supports a significant proportion of the regional or national populations and those found at the edge of their range. Examples would include nightjar, honey buzzard, goshawk and turtle dove; and c) Maintain and where appropriate enhance existing wildlife connections and landscape features such as water courses, disused railway lines, hedgerows and tree lines for biodiversity as well as for other green infrastructure and recreational uses.

3. Development proposals that are likely to have a harmful impact on protected or valuable sites or species will only be permitted where it can be demonstrated that: 57 a) There are no alternative options that would avoid or reduce the harm to the protected or valuable interest; b) Suitable mitigation measures to avoid or reduce the harm have been incorporated into the proposals and will be maintained in order to retain their biodiversity or geodiversity benefits; c) Any residual harmful impacts have been offset through appropriate habitat enhancement, restoration or creation on site or elsewhere; and d) The wider sustainability benefits of the development outweigh the harm to the protected or valuable interest."

This application is supported by an Ecological Appraisal and Biodiversity Net Gain Assessment by competent consultants for each field by OS ecology.

With regards to Ecology assessment, the consultants have recommended the following mitigating measures which can be secured by planning condition accordingly;

"6. Recommendations

Avoidance Measures

6.2 The following measures should be incorporated into the design of the scheme to avoid impacts on wildlife:

- External lighting that may affect the site's suitability for bats will be avoided. If required this will be limited to low level, avoiding use of high intensity security lighting.*

- Works will not be undertaken during the nesting bird season (March to August inclusive) unless the site is checked by an appropriately experienced ecologist and nests are confirmed to be absent.
- Any excavations left open overnight will have a means of escape for mammals that may become trapped in the form of a ramp at least 300mm in width and angled no greater than 45°.

Mitigation Strategy

6.3 The following is recommended:

- It is recommended that site design minimises impacts to grassland areas where they are to be retained and are protected from disturbance where retained.
- Retained trees and hedgerow around the site boundaries will be protected from damage in line with the recommendations in BS5837:2012.

Compensation Scheme

6.4 The following is recommended:

- Landscape planting shall include berry and fruit bearing species to provide increased foraging opportunities in the local area.
- Areas of grassland retained and enhanced where possible in order to address the grassland lost from the site.
- Areas of the site where greenspace is to be created are designed for wildlife and managed appropriately.
- Bird and bat boxes are recommended for erection within retained trees within the wider landholding of the developer.
- Consideration will be given to achieving a net gain in biodiversity”

Biodiversity Net Gain (BNG)

With respects to Biodiversity Net Gain Assessment, the report confirms that the proposed development provides a net gain of 0.74 units in accordance with SP 'H' policy. Further details can be found in both submitted reports.

Flood Risk and Drainage

Policy ENV5 - Flood Risk of the Local Plan states that new development will only be permitted where: 1. It meets the sequential approach to development in areas of flood risk; and 2. It does not increase the risk of flooding elsewhere.

Paragraph 159 of the NPPF states that inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk

The proposed site is largely located in Flood Zone 1 and therefore at low risk from flooding.

Paragraph 167 of the NPPF states that major developments should incorporate sustainable drainage systems unless there is clear evidence that this would be inappropriate.

The proposed development seeks to install a sewerage treatment plant (STP) in a strategic position and distance from each cabin in terms of legislation and maintenance. As per the attached specification documentation for the STP under Appendix 1; the applicant proposes an Otto Graf GmbH, Carl-Zeiss-Str. 2-6, Germany, Packaged domestic wastewater treatment plant, for treatment of domestic wastewater.

With respects to surface water mitigation, the proposed materials to be used in regards to access road and footpaths are to utilise permeable materials and water from the STP to be connected to a herringbone drainage system within the associated land as

illustrated on submitted plans, which can be agreed to be a sustainable drainage system in accordance with NPPF Para 167.

Highway And access consideration

Paragraph 85 of the NPPF sets out that planning policies and decisions should recognise that sites to meet local business and community needs in rural areas may have to be found adjacent to or beyond existing settlements, and in locations that are not well served by public transport. In these circumstances it will be important to ensure that development is sensitive to its surroundings, does not have an unacceptable impact on local roads and exploits any opportunities to make a location more sustainable.

Paragraph 111 of the NPPF states that development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe.

Policy CO2 of the Local Plan states that new development will only be permitted where:
1. It is of a scale which the adjacent road network has the capacity to serve without detriment to highway safety; 2. The external design and layout and associated surfacing works take into account, as appropriate, the needs of all users

Access to the development proposal will be from the existing private track which runs alongside Cuddy Lane. The proposed development seeks to create two passing laybys within the applicant's curtilage to allow sufficient passing distance from oncoming and egressing vehicular movements.

A service management plan as detailed within this application, will ensure that visitors that register interest with the holiday cabins will be booked and vacated at different times from each occupant to avoid congestion along the private track and Cuddy Lane respectively, which avoid any highway safety issues with trip generation concerns if raised in relation to the adjoining PROW of Cuddy Lane.

In addition to support sustainable transport measures, the applicant will install Sheffield Cycle stands to each cabin for the cyclist enthusiasts.

The proposed development provides access by a number of transport modes which accords with paragraph 103 of the new NPPF. There is a safe means of access to and from the site for all road users is achievable and the traffic impact is negligible (paragraph 110 refers). The highway proposals are considered to be safe and do not result in any severe residual cumulative highway impacts, and therefore comply with paragraph 111. Access for pedestrians and cyclists and all motor vehicles is shown to be safely achieved (paragraph 112) and adequate parking is provided on site, Therefore, the proposals comply with the national policies and Local Policy CO2.

In conclusion, it has been demonstrated that the proposed development can be accommodated on the adjacent highway network without any significant negative impact and there are therefore no highway capacity or safety reasons why this development should not be granted planning approval.

Waste and Refuse collection

The applicant will contract waste and refuse collection to a private company and as detailed on submitted plans, a refuse collection point has been annotated on the proposed site plan to clarify a suitable pick-up point for refuse vehicles to avoid any highway safety issues.



Wastewater Treatment

GRAF Advanced Wastewater Treatment System

Benefits of the Graf system

- Extremely strong & robust injection moulded underground tank
- No concrete required, just gravel base and backfill
- Completely groundwater stable up to the centre line
- CE Certified system to EN 12566-3
- Great effluent quality of 12, 20, 12 guaranteed on a 95 percentile basis up to 50 PE using SBR Technology.
- Integrated sampling chamber at no extra cost
- No moving parts inside the tank, easy to install, easy to maintain.
- Plug in and play system, no wiring required
- 10 year warranty on the tank, 2 years on compressor and parts, German engineered
- Low energy consumption of just 46 kWh per person, per year
- Quiet operation
- Automatic holiday mode with under load detection and flood alert
- Convenience package +K control with larger display and keypad
- Underload detection by a pressure sensor in the control
- Multiple upgrades available including remote transmission, phosphate & nitrogen removal and complete disinfection with UV



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Wastewater Treatment Solutions

WASTEWATER TREATMENT SYSTEMS & SEPTIC TANKS



ADVANCED WASTEWATER TREATMENT SYSTEMS

ONE 2 CLEAN

SEPTIC TANKS

Welcome to Graf UK

By Matthew Rolph, Managing Director, Graf UK



World's largest injection moulding machine

For more than 50 years, the GRAF brand has represented high-quality plastic products. Our Carat wastewater tanks represent the state of the art. Our long-standing partner KLARO, which joined our group of companies in 2014, has grown over the last 10 years to become the European market leader in small SBR treatment systems with airlift technology. Our small wastewater treatment systems are already being used by 240,000 satisfied customers. When you buy a GRAF wastewater treatment system, you benefit from the experience gained from more than 300,000 satisfied wastewater customers and the quality of two established brands in local wastewater disposal.

Quality comes first

GRAF uses state-of-the-art production facilities. This is the only way to guarantee superlative quality at attractive prices. A high standard of quality in production is an essential foundation for unique products. End-to-end quality assurance and a high level of automation guarantee maximum reliability in production. GRAF broke into new ground by using injection embossing to make the Carat wastewater tank. To manufacture this tank, GRAF commissioned the development and construction of the world's largest injection moulding machine.



Blow moulding



Rotational moulding

How to choose a wastewater treatment system

Wastewater solutions for:

e.g. domestic properties



**one2clean
one-tank system** (>> page 6)

Septic tank (>> page 15)

Anaerobix (>> page 15)

Wastewater solutions for:

e.g. villages, office buildings,
campsites, hotels



**one2clean
two-tank system** (>> page 6)

**Advanced wastewater treatment
multi-tank system** (>> page 9)

Wastewater solutions for:

e.g. holiday homes



**Advanced wastewater treatment
multi-tank system** (>> page 9)

Septic tank (>> page 15)

Anaerobix (>> page 15)

The Benefits of injection moulding systems

Plastic – clear advantages

Because of their low weight, plastic tanks can be installed without heavy equipment. This means that they can be easily transported and installed in locations that are difficult to access. Plastic tanks, have smooth inner surfaces that will not corrode.

Sustainability starts with production

GRAF products help to protect the environment, so it goes without saying that they are also manufactured in an environmentally friendly way. Injection-moulding a plastic part usually requires up to 2.7 kilowatt

hours of electricity per kilogram of plastic. GRAF needs just 0.38 to 0.5 kilowatt hours.

The injection moulding process therefore consumes up to **85% less energy** than normal.

The heat generated during manufacturing is processed by a modern heat recovery system and is used to heat the production and logistics buildings.

Durable products: reliable investment

Right from the product development stage, GRAF attaches great importance to durable design. Our decades of experience combined with modern production techniques guarantee that our plastic tanks last for over 50 years. GRAF offers a warranty of up to 25 years for its wastewater tanks. A 2 year warranty is offered for SBR technology. The efficiency of our wastewater treatment systems is regularly monitored by independent institutes. All products manufactured by GRAF are also 100% recyclable.

Benefits of the Carat system

The only wastewater underground tank of it's kind!

Unique manufacturing process

The GRAF Carat underground tank is unlike any other underground tank in the world. It is the largest tank of its kind to be manufactured by injection compression moulding. This technique provides the tank with unbeatable stability and ensures that each component is produced with the highest of accuracy.

Unlike other underground tanks, the wall thickness is equal in all areas of the tank. The production tolerances are kept to a minimum, resulting in a product of the highest quality, which is strong, accurate, reliable and extremely user friendly.

To manufacture the Carat range, one of the worlds largest injection moulding systems had to be developed.



The tank that turns its head for you

The GRAF Carat underground tank has a rotating tank dome. The tank dome can be aligned with the connections independently of the tank - this makes installation much easier! All installation pipes are connected using the five standard lip seals. The Carat telescopic dome shaft connects the system to the ground surface. The height of the tank can be smoothly adjusted to suit the local conditions and it can be tilted by 5°. The whole system is flush with ground level.



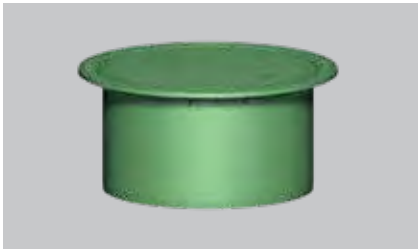
Flush with ground level

The Carat underground tank has numerous seals to efficiently stop dirt getting into the tank. This means that groundwater cannot get into the tank and, thus, dirt particles cannot contaminate the wastewater. The seals are in the intersection between the tank and the tank dome and between the tank dome and the telescopic dome shaft. All supply pipes connected to the tank dome are also sealed with five lip seals as standard.



Ribbed tank base

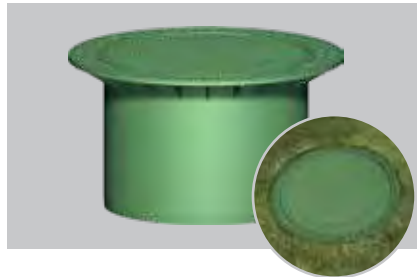
The tank base of the Carat underground tank is extremely stable thanks to the numerous ribs. These enable the Carat to be installed in groundwater up to the middle of the tank. Furthermore, the stable base means the tank is very robust for transportation to site. The tank base has already proven its excellent rigidity in numerous computer simulations during the development process. Please follow our installation instructions for this purpose (can also be downloaded at www.grafuk.co.uk).


Telescopic dome shaft Mini

- With PE cover
- Suitable for pedestrian loading
- Weight 9kg
- Adjustable earth covering across upper tank surface

plus 140mm - 340mm earth covering

Order no. 371010


Telescopic dome shaft Maxi

- With PE cover
- Suitable for pedestrian loading
- Weight 15kg
- Adjustable earth covering across upper tank surface

plus 140mm - 440mm earth covering

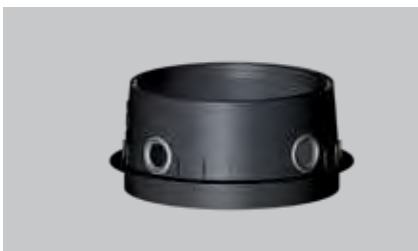
Order no. 371011


Telescopic dome shaft cast iron

- Suitable for vehicle loading - with child-proof cast iron cover up to 3.5t
- Weight 55kg
- Adjustable earth covering across upper tank surface

plus 140mm - 440mm earth covering

Order no. 371020


Tank dome Mini

Tank dome Maxi

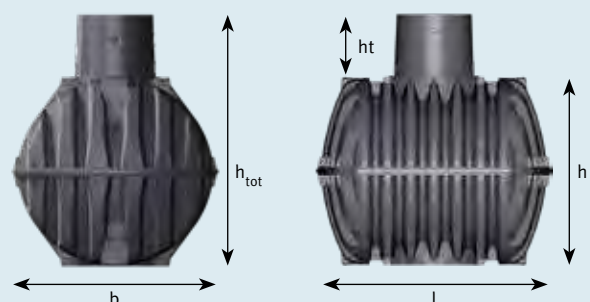
Tank dome Micro

Dimensions

Volume [l]	Width b [mm]	Length l [mm]	Height h [mm]	Height htot [mm]	Height of tank dome ht [mm]	Inner Ø of tank dome [mm]	Weight [kg]	Order no.
2,700 (700 US gal.)	1565 (61.6")	2080 (81.9")	1400 (55.1")	2010 (79.1")	610 (24.0")	650-800 (25.6-31.5")	120 (265 lbs.)	372028
3,750 (1,000 US gal.)	1755 (69.1")	2280 (89.8")	1590 (62.6")	2200 (86.6")	610 (24.0")	650-800 (25.6-31.5")	150 (331 lbs.)	372029
4,800 (1,250 US gal.)	1985 (78.2")	2280 (89.8")	1820 (71.6")	2430 (95.7")	610 (24.0")	650-800 (25.6-31.5")	185 (408 lbs.)	372030
6,500 (1,700 US gal.)	2190 (86.2")	2390 (94.1")	2100 (82.7")	2710 (106.7")	610 (24.0")	650-800 (25.6-31.5")	220 (485 lbs.)	372031

Technical data

Max. earth covering (without groundwater vehicle loading)	1200 mm (47.2")
Max. vehicle weight	Suitable for vehicle loading (3.5 t) Higher loads on request
Earth covering required for vehicle loading	800 - 1200 mm (31.5 - 47.2")
Groundwater stability	up to middle of tank
Earth covering required for groundwater stability	800 - 1000 mm (31.5 - 39.4")
Connection	DN 100 / DN 150 / DN 200 on top



The one2clean system

The only wastewater underground tank of it's kind!

- Only one tank with just one chamber required
- Less energy consumption and less wear
- No mechanical elements in the wastewater
- No pumps in the wastewater
- No electrical components in the wastewater
- Incredibly low volume of sewage sludge



one2clean set-up kit

- Conventional wastewater treatment systems require up to three pumping processes. one2clean only requires one pumping process, which saves energy and extends the lifetime of the air compressor – the core part of the system
- Rugged clear water lifter manufactured in one seamless piece. No connectors or screws necessary
- Simple maintenance via an integrated, self-cleaning sampling container

one2clean system control

- The one2clean has a compact controller
- The microprocessor control system ensures simple operation and maintenance

Wastewater tank

- Telescopic cover
- State-of-the-art manufacturing for maximum stability
- Suitable for vehicle loading in conjunction with telescopic vehicle dome shaft
- 100% watertight and corrosion-resistant
- Can be installed in groundwater up to the middle of the tank

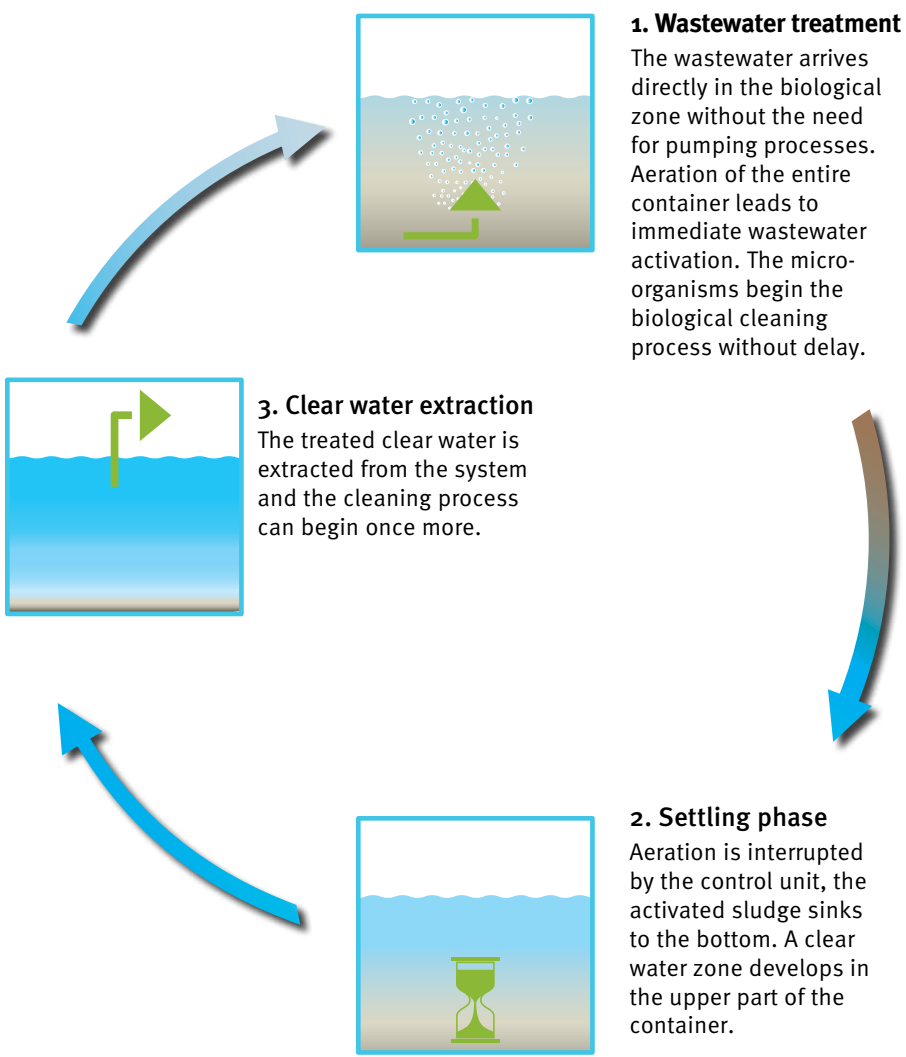
Technical data

System	one2clean
System conformity	EN 12566-3
Purifying technology	fully biological SBR lifting technology
One-tank systems available up to	9 inhabitants 1,350 l/d
Two-tank systems available up to	18 inhabitants 2,700 l/d
Maintenance interval	1 – 2 per year
Warranty for underground tank	10 years
Warranty for purifying technology	2 years
Cleaning performance	7, 14, 0.5
Control	
Holiday mode	Manual
+D Removal of nitrogen	●
+C Carbon infeed	○
Logbook function	●
Operation	4 keys
External control cabinet for installing control unit outdoors	○
Annual power consumption	230 kWh (5 inhabitants 750 l/d)

Parameter	%	mg/l
COD (chemical oxygen demand)	94.2%	43
BOD ₅ (biochemical oxygen demand)	98.0%	7
SS (suspended solids)	96.3%	14
NH ₄ -N	98.3%	0.5
N _{total}	87.0%	7.9

Results of practical testing undertaken by the Prüfinstitut für Abwassertechnik (Testing Institute for Wastewater Technology), Aachen

- Standard equipment
- Available as options
- not available



1. Wastewater treatment

The wastewater arrives directly in the biological zone without the need for pumping processes. Aeration of the entire container leads to immediate wastewater activation. The micro-organisms begin the biological cleaning process without delay.

3. Clear water extraction

The treated clear water is extracted from the system and the cleaning process can begin once more.

2. Settling phase

Aeration is interrupted by the control unit, the activated sludge sinks to the bottom. A clear water zone develops in the upper part of the container.

Incredibly low volume of sewage sludge

- Aeration of the entire wastewater tank
- Immediate wastewater activation
- Minimisation of the sludge
- Less sludge removal
- Cost savings

Conventional wastewater treatment systems



one2clean



Minimum maintenance costs

- Simple construction
- High-quality components
- As much technology as necessary, as little technology as possible.
- Integrated sampling point

Minimum power consumption

- one2clean has only one pumping process, reducing energy consumption and running costs
- Economical motor valve
- Energy-optimised membrane compressor

one2clean only needs 3 steps to produce clear water

The wastewater treatment is carried out in one chamber in just one tank. This eliminates unnecessary pumping processes and sludge return.

one2clean is odourless

The entire volume of wastewater is immediately activated with oxygen using the unique one2clean technology. The final process of the one2clean produces an odourless, clear treated water for extraction to soakaway or waterway.

one2clean already meets the needs of tomorrow

one2clean achieves sustainable discharge values with an efficiency factor of up to 99%! This offers high investment security – even if legal requirements become stricter.

One-tank system

Inhabitants [max.]	Max. daily flow [l/d]	Max. organic load [kg BOD ₅ /d]	Total volume [l]	Volume [l]	Length [mm]	Width [mm]	Height [mm]	Weight [kg]
5	750	0.3	3,750	3,750	2280	1755	1880	150
7	1,050	0.42	4,800	4,800	2280	1985	2110	185
9	1,350	0.54	6,500	6,500	2390	2190	2390	220

Two-tank system

Inhabitants [max.]	Max. daily flow [l/d]	Max. organic load [kg BOD ₅ /d]	Total volume [l]	Volume [l]	Length [mm]	Width [mm]	Height [mm]	Weight [kg]
10	1,500	0.6	7,500	2 x 3,750	5160	1755	1880	300
14	2,100	0.84	9,600	2 x 4,800	5160	1985	2110	370
18	2,700	1.08	13,000	2 x 6,500	5380	2190	2390	440

one2clean accessories

GRAF EPP control cabinet - Easy, flexible application

- Easy access for maintenance
- Function checking is simple as the control unit is located immediately next to the system
- Ideal solution for large distances from the house (>20m)
- Flexible use of the proven GRAF EPP control cabinet in a plastic external column
- Lockable housing in sturdy, weather-resistant plastic
- Integrated double power socket for easy maintenance



GRAF Plastics external control cabinet S for EP control cabinet (size upto 7 inhabitants)



GRAF Plastics external control cabinet M for EP control cabinet (size upto 18 inhabitants)

Carbonator (Carbon dosage)

Sewage treatment plants require a constant inflow of wastewater into the tank in order for them to work correctly. The seasonal occupation of holiday homes is a challenge for wastewater treatment systems that rely on constant inflow to keep the microorganism population stable. Any destabilisation of the microorganisms within the system incurs extra operating costs.

The Carbonator was especially designed to keep wastewater treatment systems with seasonal inflow stable and working correctly. The additional Carbonator module automatically feeds the

systems with nutrients that keep the microorganisms alive when there is no wastewater inflow.

Benefits

- Regardless of system - suitable for other treatment plants (one2clean compatible)
- Individual adjustment of dosage
- Low power consumption
- Fast installation
- Simple operation

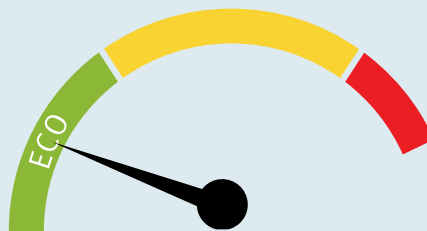
Empty pipe seal DN 100

- Air-tight seal for empty pipe
- No insulating foam required
- Clean, professional solution



Minimum power consumption

- one2clean has only one pumping process, reducing energy consumption and running costs
- Economical motor valve
- Energy-optimised membrane compressor



Only 46 kWh per person and per year!

*Based on a 5PE One2Clean plant

- No live electrical parts in the water
- Low power consumption
- Optional automatic adjustment to living situation (underload detection)
- Optional remote monitoring
- High-quality components mean low maintenance costs



Super-quiet control cabinet

- Extremely low noise thanks to EPP housing and very quiet air compressor
- Battery-free power failure detection
- Very easy installation
- Interchangeable plug-in components

High-tech installation kit

- Integrated self-cleaning sampling container
- Each lifter manufactured as a single piece. No connectors or screws necessary
- Colour-coded and pre-assembled
- Special lifter design prevents sludge from leaking in
- Lifters easy to remove for maintenance without the use of tools

Wastewater tank

- Telescopic cover
- State-of-the-art manufacturing for maximum stability
- Suitable for vehicle loading in conjunction with telescopic vehicle dome shaft
- 100% watertight and corrosion-resistant
- Can be installed in groundwater up to the middle of the tank

Technical data

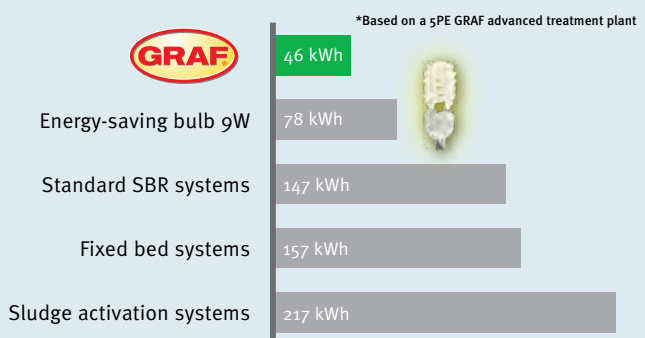
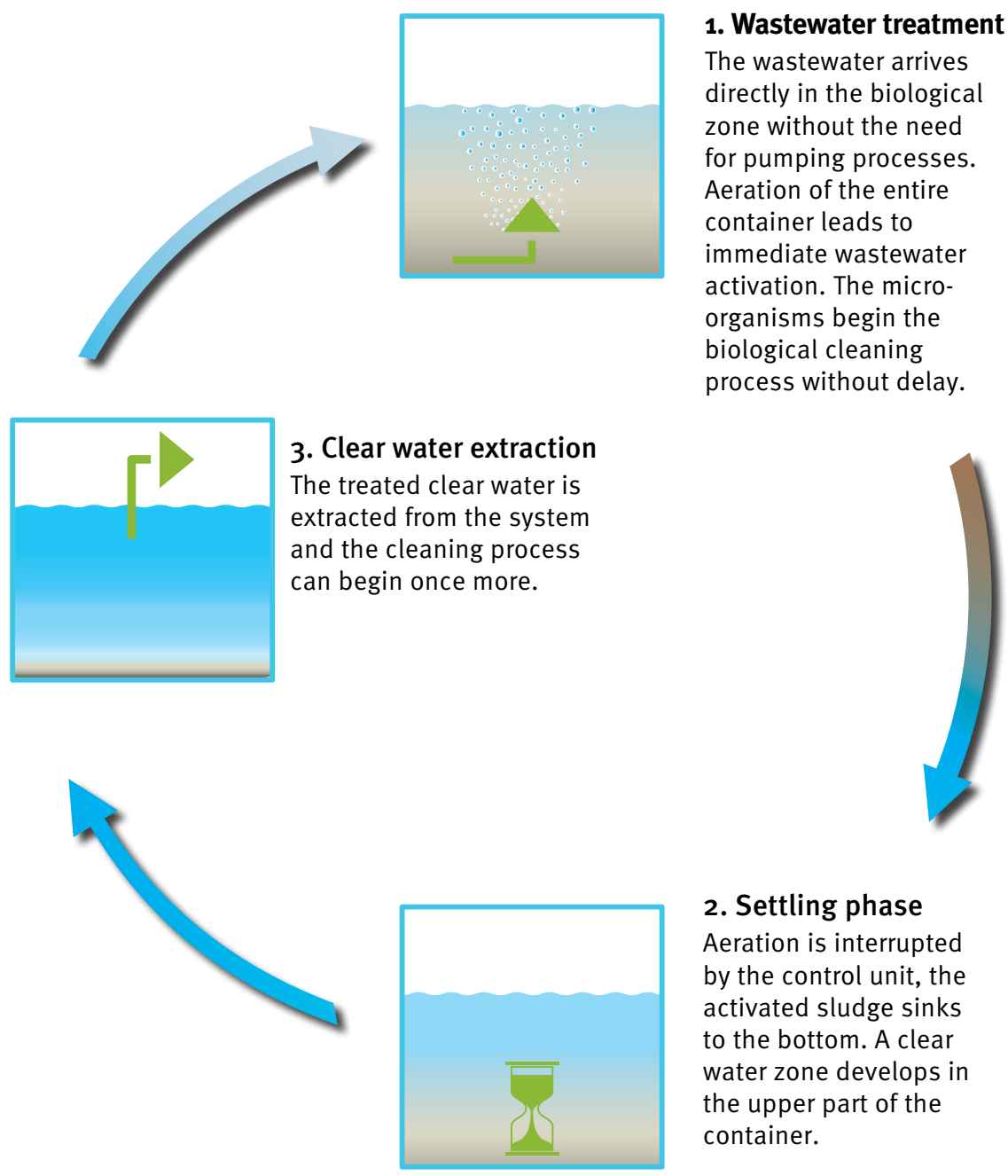
System	Advanced WWT Systems
System conformity	EN 12566-3
Purifying technology	fully biological SBR lifting technology
One-tank systems available up to	9 inhabitants 1,350 l/d
Maintenance interval	1 – 2 per year
Warranty for underground tank	10 years
Warranty for purifying technology	2 years
Cleaning performance	7, 14, 0.5 (5-18PE) / 12, 20, 12 (22-50PE)
Control	KL24plus (+K)
Holiday / economy mode (underload detection)	Automatic
Back pressure monitoring	●
+R Remote transmission (GSM modem)	○
+P Phosphate removal	○
+C Carbon infeed	○
+H Hygiene package (Disinfection)	○
+D Removal of nitrogen	○
Control power failure recognition	●
Temperature sensor to protect against overheating	●
Logbook function	●
Operation	14 keys
Serial interface for software updates	●
External control cabinet for installing control unit outdoors	○

Parameter	%	mg/l
COD (chemical oxygen demand)	94.2 / 91.9%	43/51
BOD ₅ (biochemical oxygen demand)	98.0/95.9%	7/12
SS (suspended solids)	96.3/94.4%	14/20
NH ₄ -N	98.3/65.4%	0.5/12
N _{total}	87.0/57.1%	7.9

Results of practical testing undertaken by the Prüfinstitut für Abwassertechnik (Testing Institute for Wastewater Technology), Aachen

- Standard equipment
- Available as options
- not available

Advanced wastewater treatment systems



Minimal power consumption per inhabitant¹⁾

¹⁾The diagram indicates the annual power consumption of various wastewater treatment systems. Source: "wwt", edition 6/2007 "The wastewater treatment system as a permanent solution", page 15, table 3, practical data; One2Clean: test report by PIA (Prüfinstitut für Abwassertechnik GmbH, Testing Institute for Wastewater Technology), Aachen, test number PIA2014-216B14.01.e



Advanced wastewater treatment one-tank systems

Inhabitants [max.]	Max. daily flow [l/d]	Max. organic load [kg BOD ₅ /d]	Total volume [l]	Volume [l]	Length [mm]	Width [mm]	Height [mm]	Weight [kg]
5	750	0.3	3,750	3,750	2280	1755	1880	150
7	1,050	0.42	4,800	4,800	2280	1985	2110	185
9	1,350	0.54	6,500	6,500	2390	2190	2390	220

Advanced wastewater treatment multitank system

Inhabitants [max.]	Max. daily flow [l/d]	Max. organic load [kg BOD ₅ /d]	Total volume [l]	Volume [l]	Length* [mm]	Width* [mm]	Height [mm]	Weight [kg]
10	1,500	0.6	7,500	2 x 3,750	5160	1755	1880	300
14	2,100	0.84	9,600	2 x 4,800	5160	1985	2110	370
18	2,700	1.08	13,000	2 x 6,500	5380	2190	2390	440
22	3,300	1.68	9,600	2 x 4,800	5160	1985	2250-2450	440
28	4,200	1.92	13,000	2 x 6,500	5380	2190	2530-2730	530
35	5,250	2.10	17,000	2 x 8,500	15500	2040	2515-2715	780
40	6,000	2.40	20,000	2x10,000	15500	2240	2715-2915	930
50	7,500	3.00	26,000	4x 6,500	11360	2190	2850-3050	1060
60	9,000	3.60	26,000	4x 6,500	11360	2190	2850-3050	1060

Advanced wastewater treatment system accessories

Plastic external control cabinet M

for up to 18 inhabitants
Order no. 107773



Plastic external control cabinet L

for up to 22-40 inhabitants



Benefits

- Easy access for maintenance
- Function checking is simple as the control unit is located immediately next to the system
- Ideal solution for large distances from the house (> 20 m)
- Flexible use of the proven GRAF EPP control cabinet in a plastic external column
- Lockable housing in sturdy, weather-resistant plastic
- Integrated double power socket for easy maintenance

Easy, flexible application for the GRAF EPP control cabinet M



EPP control cabinet
Part of the wastewater treatment system



GRAF Plastics external control M cabinet for EP control cabinet (size up to 18 inhabitants)



+K Convenience package

Convenience package: control with larger display and keypad. Underload detection by a pressure sensor in the control.

Standard

KL24plus



- SD card slot for easy logbook transfer
- Automatic underload detection
- Suitable for phosphate precipitation and UV module
- Large display and 14 keys for comfortable operation
- Automatic logging
- Battery-free power failure detection
- High-contrast display with blue backlighting
- Durable, gas-tight membrane keypad

+O Outlet with clear water pump

Lift the clear water when the outlet pipe is lower than the water course.

On request



+D Removal of nitrogen

The +D package for denitrification (removal of nitrogen) results in the clarified water quality satisfying very strict requirements. The GRAF systems thereby attain a N_{total} value (total parameters of inorganic nitrogen compounds) of less than 25 mg/l.

Order no. 107520

+P Phosphate removal package

Phosphate in water results in a massive build-up of algae. The GRAF +P package ensures the safe removal of phosphate and therefore great water quality

On request

+C Carbon infeed

Solution for weekend homes

The addition of carbon as a nutrient allows the purification process to continue and prevents the biology from dying off.

On request



+R Remote transmission

Remote monitoring allows error messages to be transmitted to mobile phones and operating data to be queried by text message. Convenient remote wastewater treatment system control by GSM is also possible.

- Greater efficiency
- Greater operating reliability
- Optimised service intervals
- Greater customer benefit thanks to monitoring service
- Low-cost remote diagnosis in the event of a fault without the service fitter having to come on site

Order no. 107117



+H Hygiene package

Disinfection using the +H package satisfies even the most stringent of purity requirements for a GRAF wastewater treatment system. Without the use of chemical substances, it reliably kills off germs and microorganisms. The clarified water therefore complies with the EU Bathing Water Directive.

On request

- Easy to operate
- Maintenance-friendly thanks to easy-to-remove module
- Fitted in downstream shaft



Accessories for small wastewater treatment systems

Sampling point, internal

For two- and multitank systems

Order no. 107170

Empty pipe seal DN 100

- Air-tight seal for empty pipe
- No insulating foam required
- Clean, professional solution

Order no. 107613



Filling granulate for external cabinets

Prevents soil moisture from rising into the external control cabinet. Required amount: 1 bag per external control cabinet for 12 – 28 inhabitants; 50 l bag

Order no. 107607

Voltage transformer

From 110 V – 230 V
Up to 300 W (LA 200)

Order no. 107421

Odour filter

For DN 100 ventilation openings; reliably filters out unpleasant odours; filter insert of multi-layer mesh with impregnated activated carbon

Order no. 104018



Filter insert

For odour filter; replace at least every two years or when odour is perceptible

Order no. 104024



SBR hose package (Advanced)

Includes:

1 x Ø 19 mm and 3 x Ø 13 mm PVC hose; colour-coded for Advanced WWT system

Length: 20 m

Order no. 107192

SBR hose package (One2Clean)

Includes:

1 x Ø 19 mm and 1 x Ø 13 mm PVC hose; colour-coded for One2Clean system

Length: 20 m

Order no. 107668

Large advanced wastewater treatment systems

Special requirements

Systems for more than 50 inhabitants work on the same principle as small wastewater treatment systems and use the SBR process. Because of the special requirements involved, all systems for more than 50 inhabitants are planned as individual projects. Our experienced team of engineers and technicians will help you to plan your project. We take all local circumstances into account from the concept planning phase to implementation.



Options

+D +P +C +H +R

The proven options of the advanced wastewater treatment systems are also available on request for large systems.



Inhab. [max.]	Max. daily flow [l/d]	Max. organic load [kg BOD ₅ /d]	Volume [litres]	Length [mm]	Width [mm]	Product code
75	12,250	3.60	2X 16,000	9900	2500	G50036
90	13,500	5.40	2X 22,000	12900	2500	G50038
100	15,000	7.20	2X 22,000	12900	2500	G50040
150	22,500	9.00	2X 32,000	17700	2500	G50042
200	30,000	10.80	4X 22,000	26400	2500	G50044
250	45,000	15.00	1X 52,000 2X 32,000	13300	8700	G50046
300	45,000	18.00	1X 52,000 2X 32,000	13300	8700	G50048
350	52,500	21.00	3X 22,000 2X 38,000	19900	5600	G50050
400	60,000	24.00	3X 22,000 2X 44,000	21400	5600	G50052
450/500	75,000	27.00/30.00	3X 22,000 4X 32,000	27500	5600	G50054
550/600	90,000	33.00/36.00	3X 26,000 4X 32,000	16200	11800	G50056
650/700	105,000	39.00/42.00	2X 32,000 4X 38,000 1X 38,000	27500	5600	G50058
750/800	120,000	45.00/48.00	3X 22,000 6X 28,000 1X 54,000	26200	8700	G50060
850/900	135,000	51.00/54.00	3X 22,000 6X 34,000 1X 54,000	29100	8700	G50062
950/1000	150,000	57.00/60.00	3X 22,000 6X 38,000	30500	8700	G50064

External control cabinets



L metal external cabinet



XL metal external cabinet



Concrete external cabinet

To plan your system, we need the following information:

- What type of project? (Domestic, hotel, commercial etc.)
- How many people will use the system and what is the water consumption per head?
- What legal requirements apply to wastewater at the location?
- Local power grid

Carat Septic Tank

Two chambers

Floating and removable material is extracted from domestic wastewater in mechanical wastewater tanks. This is purely mechanical cleaning.

Benefits

- Low weight: can also be installed in difficult local conditions without a crane
- Low maintenance: maintenance or cleaning work can be performed through the shafts
- Tanks can be used as rainwater harvesting systems after thorough cleaning

12566-1*

Hydraulic efficiency **99.9%**

*Refer to the installation instructions for CE-compliant Septic tanks



Carat S Septic tank

Inhabitants [max]	Total volume [l]	Capacity [l]	Length [mm]	Width [mm]	Height [mm]	Weight [kg]
4	2,700	2,700	2080	1565	2010	145
11	3,750	3,750	2280	1755	2200	175
18	4,800	4,800	2280	1985	2430	220
30	6,500	6,500	2390	2190	2710	260

One complete system consists of: Carat underground tank with baffle. Also available without baffle as a one-chamber wastewater tank.

Anaerobix – Wastewater Treatment System with Biological Filter

Simple and low-cost

- Anaerobix is the new low-cost anaerobic filter system for wastewater tanks in Graf tanks
- Filled with the carrier material supplied, it increases the cleaning performance of a wastewater tank several times over. The large surface of the recyclable plastic carrier material (141 m²/m³) allows the biofilm responsible for the cleaning process to cover a large area.

The benefits of the Anaerobix system at a glance

- Very good cleaning performance: efficiency over 90%, PIA-certified (Testing Institute for Waste Water Technology)
- No power consumed, no electrical or mechanical components (e.g. pumps or float switch) in tank
- Largely maintenance-free
- Installation in proven Graf tanks
- Easy to install with standard DN 100 pipes
- Very good value for money



Technical data

System	Anaerobix
Purifying technology	Anaerobic system
One-tank systems available up to	3,750 l/d
Maintenance interval	1 – 2 per year
Warranty for underground tank	10 years

Anaerobix single-tank system

Tank volume	2,700 litres	3,750 litres	4,800 litres	6,500 litres
Max. daily flow [l]	1,200	2,250	2,850	3,750



Limit values

BOD ₅ (biochemical oxygen demand)	75 %
SS (suspended solids)	90 %



Warranty clause:

The warranty mentioned in this brochure only refers to the tank in question and not to the accessories. Within the warranty period we grant free replacement of the material. Further benefits are excluded. Pre-condition for warranty benefits are proper handling, assembly and installation according to the mounting guidelines.

N.B. Protect tanks from frost when installed above ground! In case of groundwater installation, please contact us for further information prior to purchase!

For all indications of measurements in this brochure we reserve a tolerance of +/- 3%. The usage volume of the tanks may be up to 10% lower than the tank Volume, depending on the connecting option.

Technical modifications and further development of the various products are subject to change. Errors excepted.

RAINWATER HARVESTING



INFILTRATION



WASTEWATER TREATMENT SOLUTIONS



MULTIPURPOSE CONTAINERS



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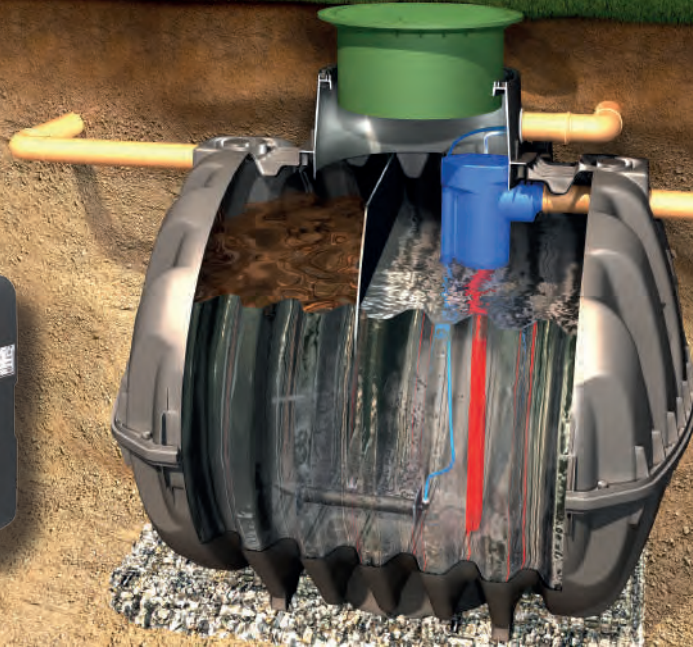
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Your expert specialist dealer:

GRAF Advanced Wastewater Treatment System



COMPRESSOR & CONTROL PANEL



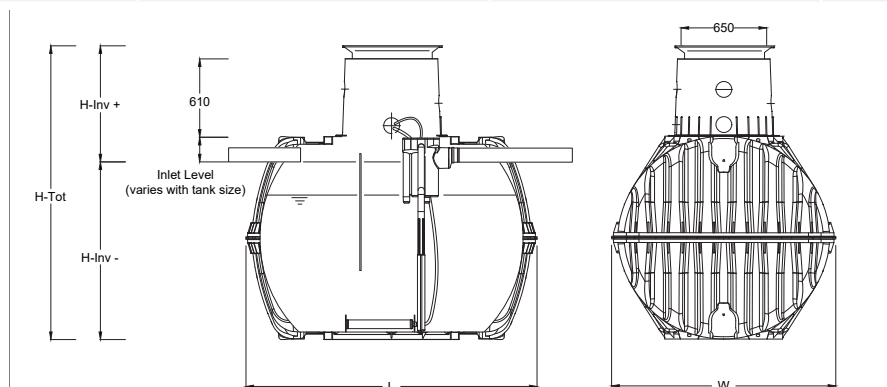
Advanced wastewater treatment system

- Telescopic manhole cover, offers variable invert levels
- Low power consumption
- Self anchoring tank
- No concrete backfill required
- No electrical components inside the tank
- High treatment performance
- Long sludge storage period
- Integrated sampling chamber inside the tank

Scope of supply

- ① GRAF advanced wastewater tank with diffusers, air lifter for clear water extraction and intergrated sampling chamber
- ② Telescopic manhole cover, suitable for either pedestrian or vehicle loading
- ③ 2 number 20m SBR hoses, 19mm used for aeration and 13mm for clear water extraction
- ④ GRAF advanced wastewater treatment control unit with compressor
- ⑤ Optional EPP external housing cabinet for control panel and compressor

Population Equivalent	5 PE	7 PE	9 PE
Tank	3750 litres	4800 litres	6500 litres
Max. Daily inflow	750 l/d	1050 l/d	1350 l/d
Weight with mini tank dome	146kg	181kg	220kg
Weight with maxi tank dome	150kg	185kg	220kg
L	2280mm	2280mm	2390mm
W	1755mm	1985mm	2190mm
H-Inv -	1,370mm	1,600mm	1,840mm
H-Inv +	950 to 1460mm		
H-Tot	2200 to 2790mm	2250 to 3020mm	2530 to 3300mm



How the system works

Untreated waste enters the tank via the inlet on the side of the tank. The wastewater falls directly into the biological zone where the treatment is taking place, this allows the micro-organisms to start the breakdown process without delay.

Compressed air is sent to the treatment plant via the control panel. This air is initially used for aeration through the diffuser. The aeration process is intermittent to achieve the best treatment performance. Aeration

+P Phosphate Removal Package - When would you need it?

Depending on where you live and what watercourse your system is discharging to, your local environment agency may require your wastewater treatment plant to be able to remove phosphates from the effluent.

This is required as too many phosphates can cause irreversible changes to an Eco-system by increasing production of algae, depleting fish stocks and deteriorating the water quality in general. Many UK watercourses have previously had high numbers of untreated septic tanks & treatment plants feed in to them, with no mitigation of the phosphates, and so are now at a critical point where no further untreated

is then stopped to allow for the waste to sink to the bottom of the tank.

Compressed air is then sent to the plant again to extract the cleaned water near the surface, via the red air-lift. This water passes through a sampling chamber before leaving the plant, where samples can be taken to confirm the quality of the effluent. The above process occurs twice per day, each lasting 12 hours.

domestic wastewater can be allowed to enter.

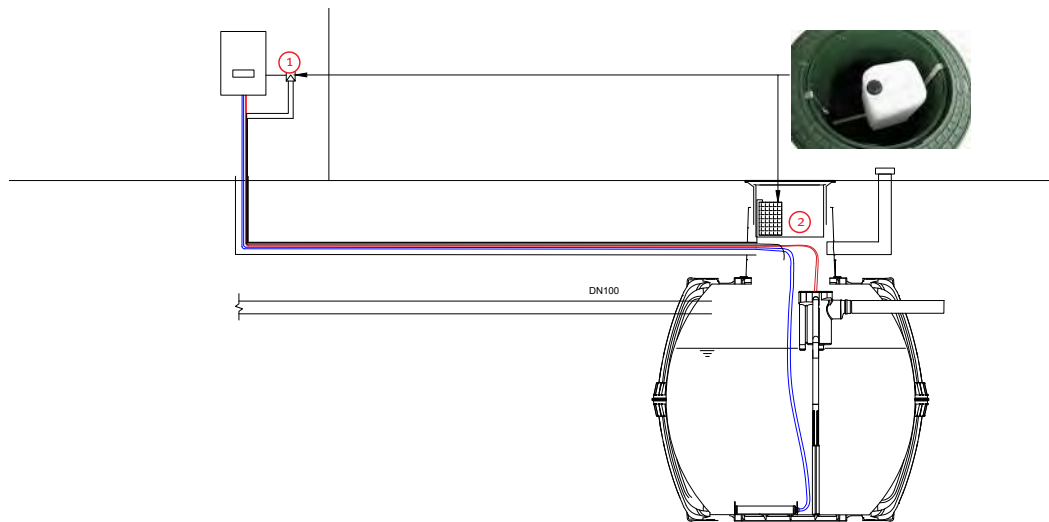
Our system works by adding a polyaluminium chloride solution in to the tank, which is carefully dosed to the correct amounts depending on your system size. This chemical essentially reacts with the phosphates and effectively lowers the levels. The Graf system has been tested independently, and can achieve a market leading phosphate level as low as 0.4 mg/l in the final effluent.

It is important the PAC solution is regularly checked and replaced as necessary to ensure these low levels are maintained

+P Phosphate Removal Package - How does it work?

Systems delivered with the phosphate removal package come with the necessary peristaltic pump in the cabinet. The pump has a suction hose and delivery hose which takes solution from a canister and doses this to the treatment plant. The runtime of the dosing pump is determined by the time set for the pump in the service menu of the treatment plant control panel. The amount of precipitant added is therefore dependent on the set time. The large Compact pump has a potentiometer for

setting delivery rate. In order to start up the precipitant device, the precipitant container must be placed in a frost-proof location. The intake and delivery hoses should also be laid in frost-free areas. The delivery hose is to be routed into the SBR reactor and placed inside the reactor with the outlet located above the reactor basin, ensuring that the precipitant flows directly into the wastewater to be treated and does not dampen any components.



- 1 The control panel is preset to dose the required amount of solution, based on the system's requirements

The +P package provides precipitant dosing for the reduction of phosphates in the effluent, which would otherwise damage the environment.

This system is tested and certified according to EN

- 2 The precipitant solution is housed in a container in the dome of the tank. The dosing pump draws the solution via a small hose before depositing it back into the SBR reactor. Maxi dome required if canister is located in turret on tank

12566-7 by the notified body PIA GmbH. The systems are additional stages of treatment for Graf wastewater treatment systems, which are fitted with a KL24plus or KLplus control unit.

For further information please call us on 01608 661500 or visit our website www.grafuk.co.uk





INSTALLATION MANUAL

ONE2CLEAN TANKS



Safety

The relevant accident prevention regulations must be observed during all work. Particularly when walking on the tanks, a 2nd person is required to secure the tank.

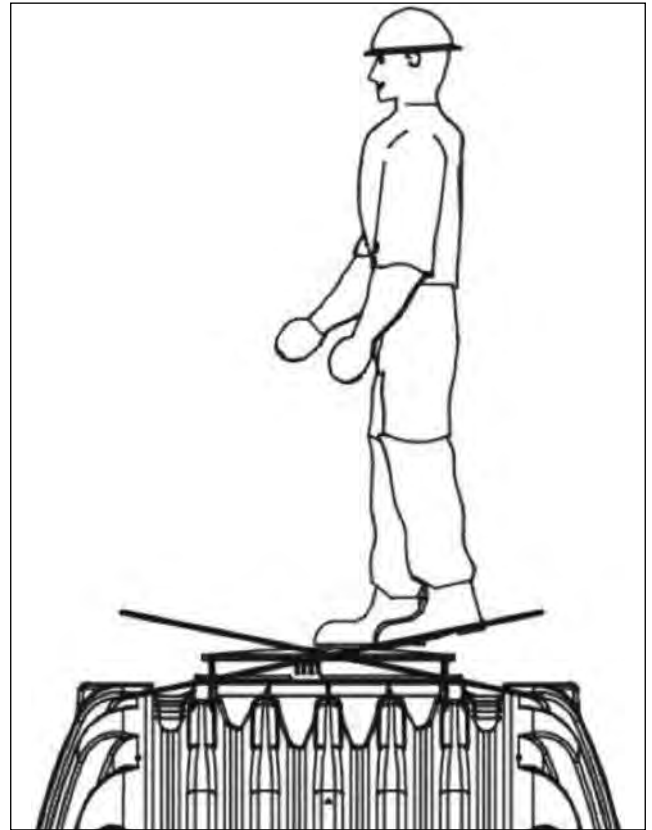
The relevant regulations and standards must additionally be taken into consideration during installation, assembly, servicing, repair, etc.

The system or individual parts of the system must be installed by qualified specialists.

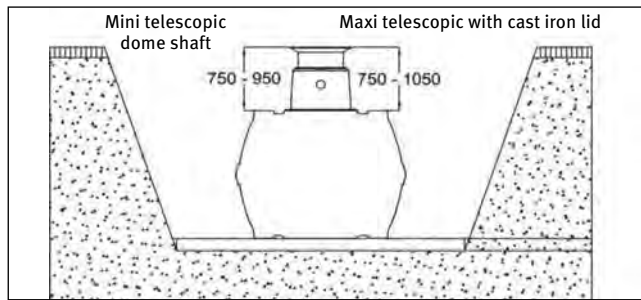
During all work on the system or parts of the system, the entire system must always be rendered inoperable and secured to prevent unauthorised reactivation. Except in the event of work carried out in the tank, the cover of the tank must always be kept sealed, as this otherwise constitutes a maximum risk of accident. Only original GRAF covers or covers approved in writing by GRAF must be used.

GRAF offers an extensive range of accessories, all of which are designed to match each other and which can be extended to form complete systems.

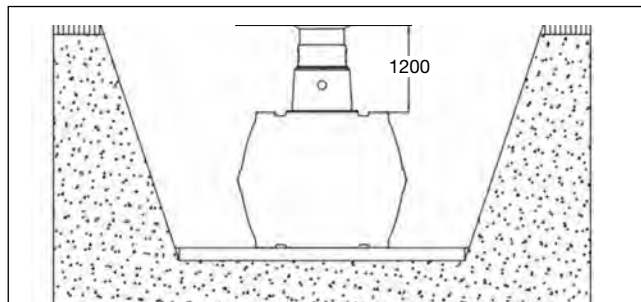
The use of other accessories may lead to impediments to the system's functional capability, therefore invalidating liability for resulting damage.



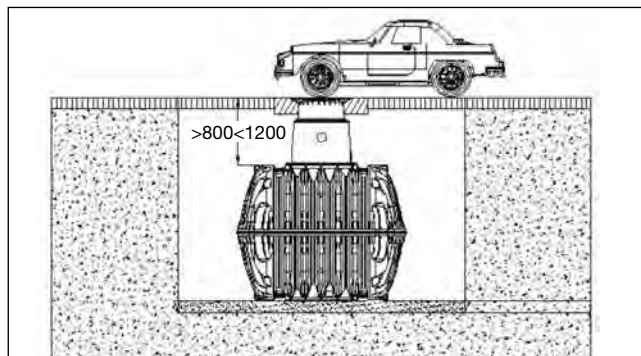
Coverage heights with telescopic dome shaft in green areas.



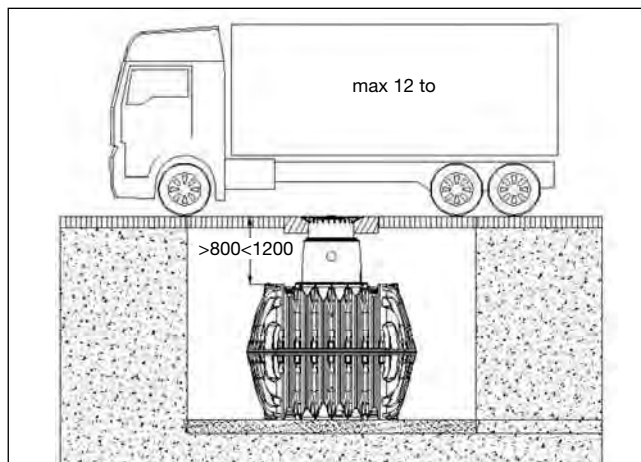
Maximum coverage heights with extensions and telescopic dome shaft.



Covering heights with cast telescopic dome shaft (with class B cast cover) in areas with car traffic (load up to 3.5 t).

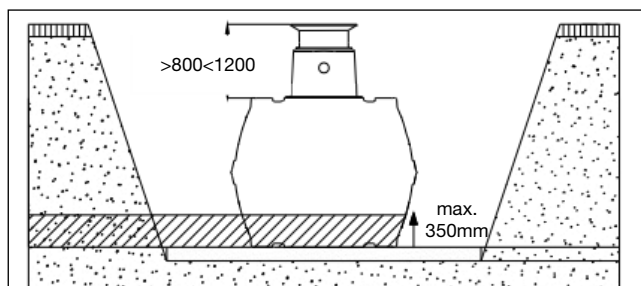


Coverage heights with vehicle loading cover (suitable cover to be provided by others) in areas used by trucks with a max. weight of 12 t.

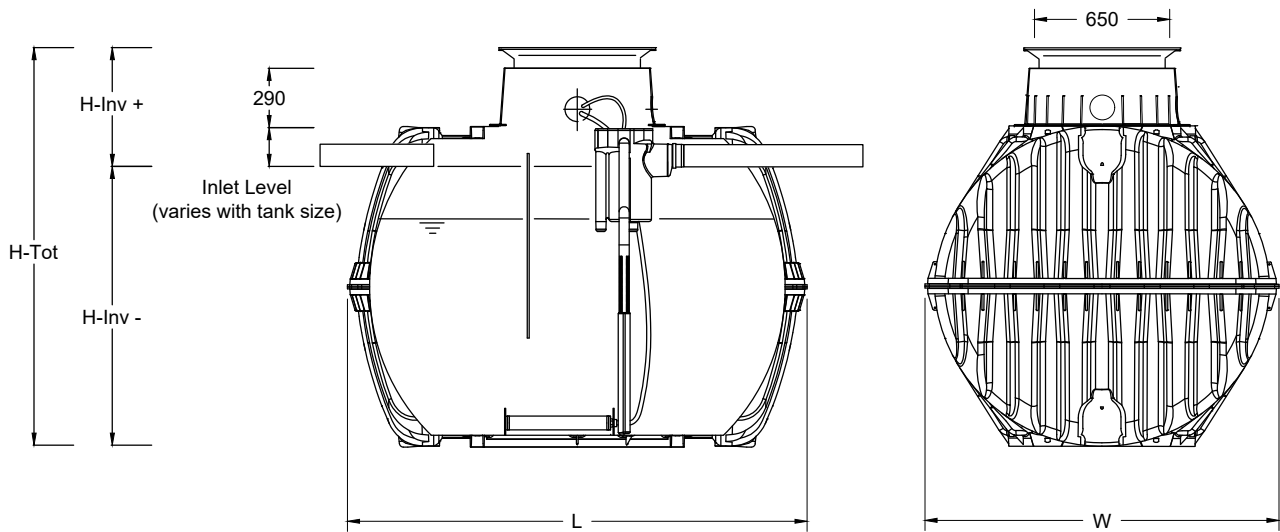


Coverage heights on installation in groundwater the hatched area specifies the permissible immersion depth for the tanks.

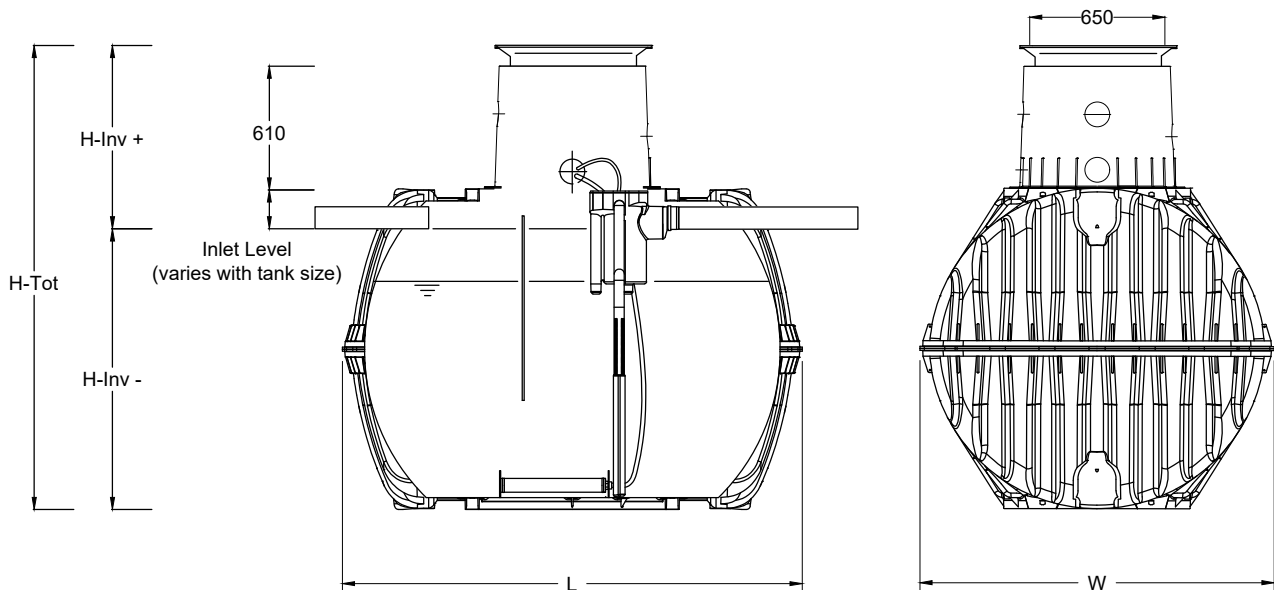
The immersion depth is 350 mm.



With mini tank dome



With maxi tank dome



* Various inlet options available to suit installation. Please specify invert depth required when ordering.

Population Equivalent	5 PE	7 PE	9 PE
Tank	3750 litres	4800 litres	6500 litres
Max. daily inflow	750 l/d	1050 l/d	1350 l/d
Weight with mini tank dome	146kg	181kg	220kg
Weight with maxi tank dome	150kg	185kg	220kg
L	2280mm	2280mm	2390mm
W	1755mm	1985 mm	2190mm
H-Inv -	1390mm	1575mm	1840mm
H-Inv + *	630 to 1460mm		
H-Tot	2020 to 2790mm	2250 to 3020mm	2530 to 3300mm

Trench

To ensure that sufficient space is available for working, the base area of the trench must exceed the dimensions of the tank by 500mm on each side; the distance from solid constructions must be at least 1000mm.

The trench embankment must be designed so that slippage or collapse of the embankment wall is not to be anticipated. The construction site must be horizontal and plane and must guarantee sufficient loadbearing capacity.

The depth of the trench must be dimensioned so that the max. earth coverage (see point 2 installation conditions) above the tank is not exceeded. To use the system throughout the entire year, it is necessary to install the tank and those parts of the system which conduct water in the frost-free area. The frost-free depth is usually approx. 600mm to 800mm; precise information in this regard can be obtained from the responsible authority.

A layer of compacted, round-grain gravel (grain size 10 to 20mm, thickness approx. 150 - 200mm) is applied as the foundation.

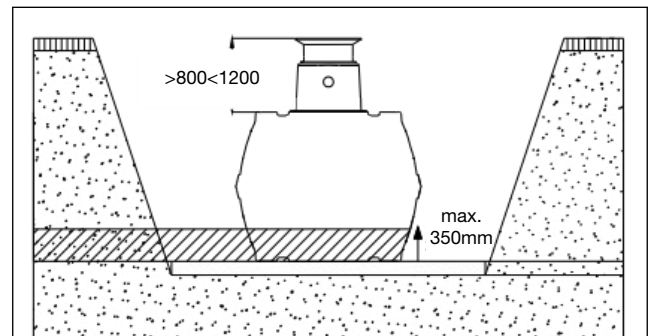
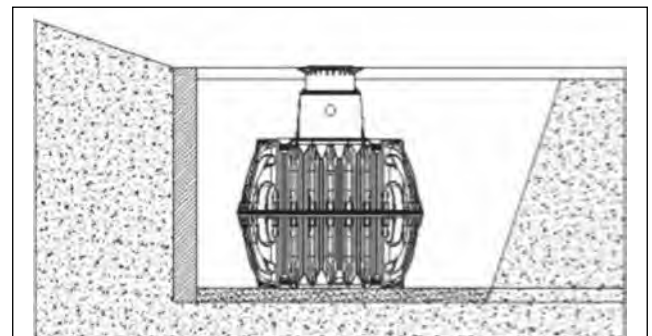
Slope, embankment, etc.

On installation of the tank in the immediate vicinity (< 5m) of a slope, earthen mound or slope, a statically calculated supporting wall must be erected to absorb the soil pressure. The wall must exceed the dimensions of the tank by at least 500mm in all directions, and must be located at least 1000mm away from the tank.

Groundwater and cohesive (water-impermeable) soils (e.g. clay soil)

If it is anticipated that the tanks will be immersed deeper into the groundwater than is shown in the adjacent figure, sufficient dissipation must be ensured. (See table for max. immersion depth).

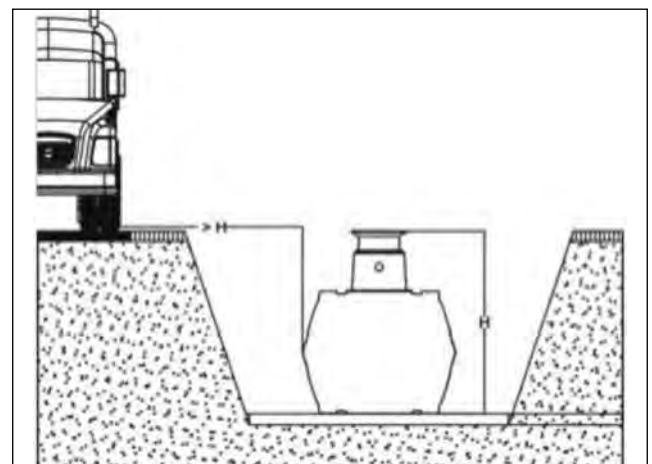
Dissipation of the drainage water (e.g. via an annular drainage system) is recommended in the case of cohesive, water-impermeable soils.



Population Equivalent	5 PE	7 PE	9PE
Tank size	3750	4800 L	6500
Immersion depth	350mm	350mm	350mm

Installation adjacent to surfaces used by vehicles

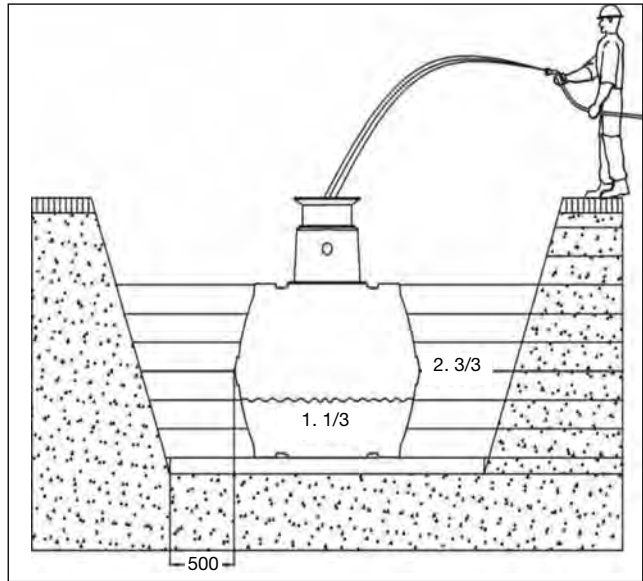
If the underground tanks are installed adjacent to surfaces which are used by vehicles heavier than passenger cars, the minimum distance away from these surfaces is at least the depth of the trench.



Insertion and filling

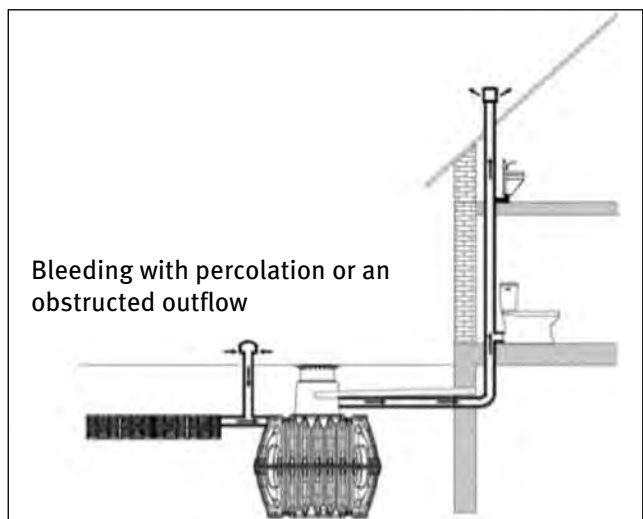
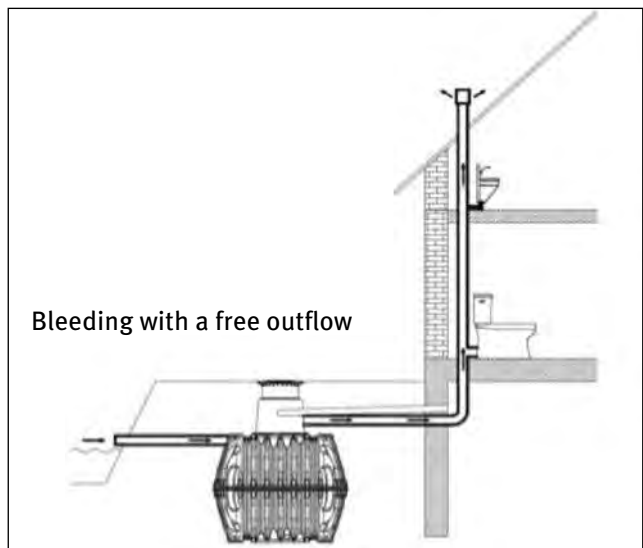
The tanks must be inserted, impact-free, into the prepared trench using suitable equipment. The tank is filled with $\frac{1}{3}$ water before starting to backfill.

Afterwards the surrounding (roundgrain gravel, max. grain size 10 to 20mm) is then filled in layers of max. 30 cm steps and is compacted. The individual layers should be manually tampered to ensure no voids. Damage to the tank must be avoided during compaction. Mechanical compaction machines must not be used under any circumstances. The surrounding must be at least 500mm wide.



Ventilation and bleeding

Poor venting and the lack of a Soil Vent Pipe is the number one cause of smells from treatment plants. All tanks must be ventilated and bled back through the soil vent pipe (chimney effect). Air Admittance Valves (Durgo Valves) must not be used instead of the SVP. These valves are fine for houses connected to mains drainage but NOT for ones with a treatment plant.



Assembling the telescopic dome shaft

The telescopic dome shaft enables infinite adaptation of the tank to given site surfaces with earth coverage of between 750mm and 950mm (Mini telescopic dome shaft) or 750mm and 1050mm (Maxi telescopic dome shaft).

For assembly purposes, the enclosed profile seal (material EPDM) is inserted into the tank dome's sealing groove and is coated generously with soft soap (do not use mineral oil-based lubricants, as these attack the seal). The telescope is then greased, inserted and aligned with the surface of the site.

Telescopic dome shaft on which persons may walk

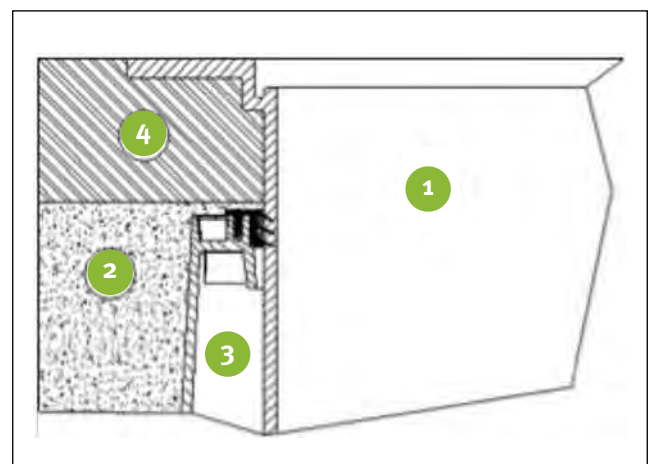
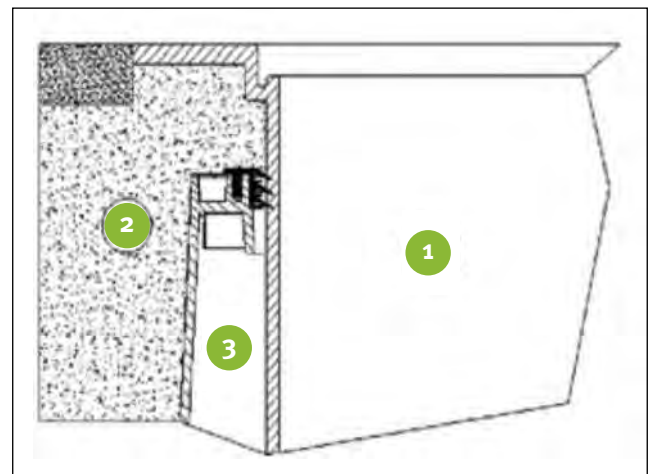
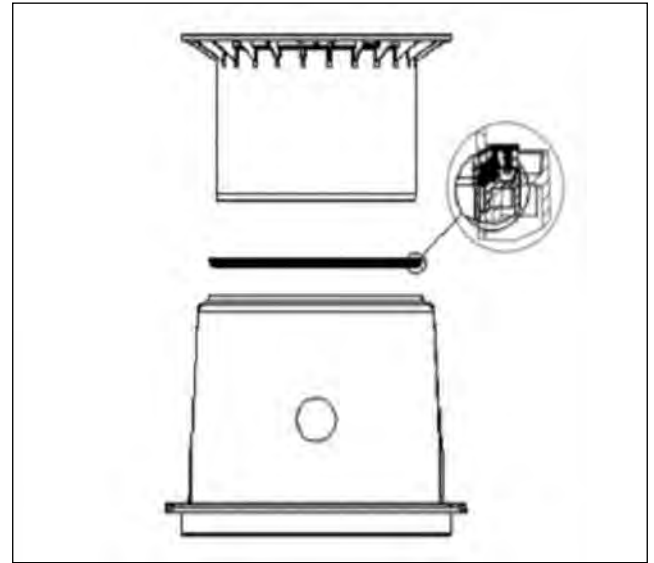
Important: To prevent loads from being transferred onto the tank, round-grain gravel ① (max. grain size 10 to 20mm) is filled in in layers around the telescope ② and is evenly compacted.

Damage to the tank dome ③ and telescope must be avoided during this step. The cover is then positioned and is sealed to prevent entry by children. **Tighten the threaded connection on the cover so tightly that it cannot be opened by a child!**

Telescopic dome shaft over which passenger cars may drive

If the tank is installed under areas used by passenger cars, the collar area of the telescope ① (colour anthracite) must be supported with concrete ④ (load class B25 = 250 kg/m²). The layer of concrete to be installed must be at least 300mm wide and approx. 200 mm high all around. The minimum coverage above the shoulder of the tank is at least 800mm (max. 1050mm with telescope, coverage up to max. 1200mm possible with intermediate section).

Attention: It is essential to use the cast telescopic dome shaft (with class B cast cover).

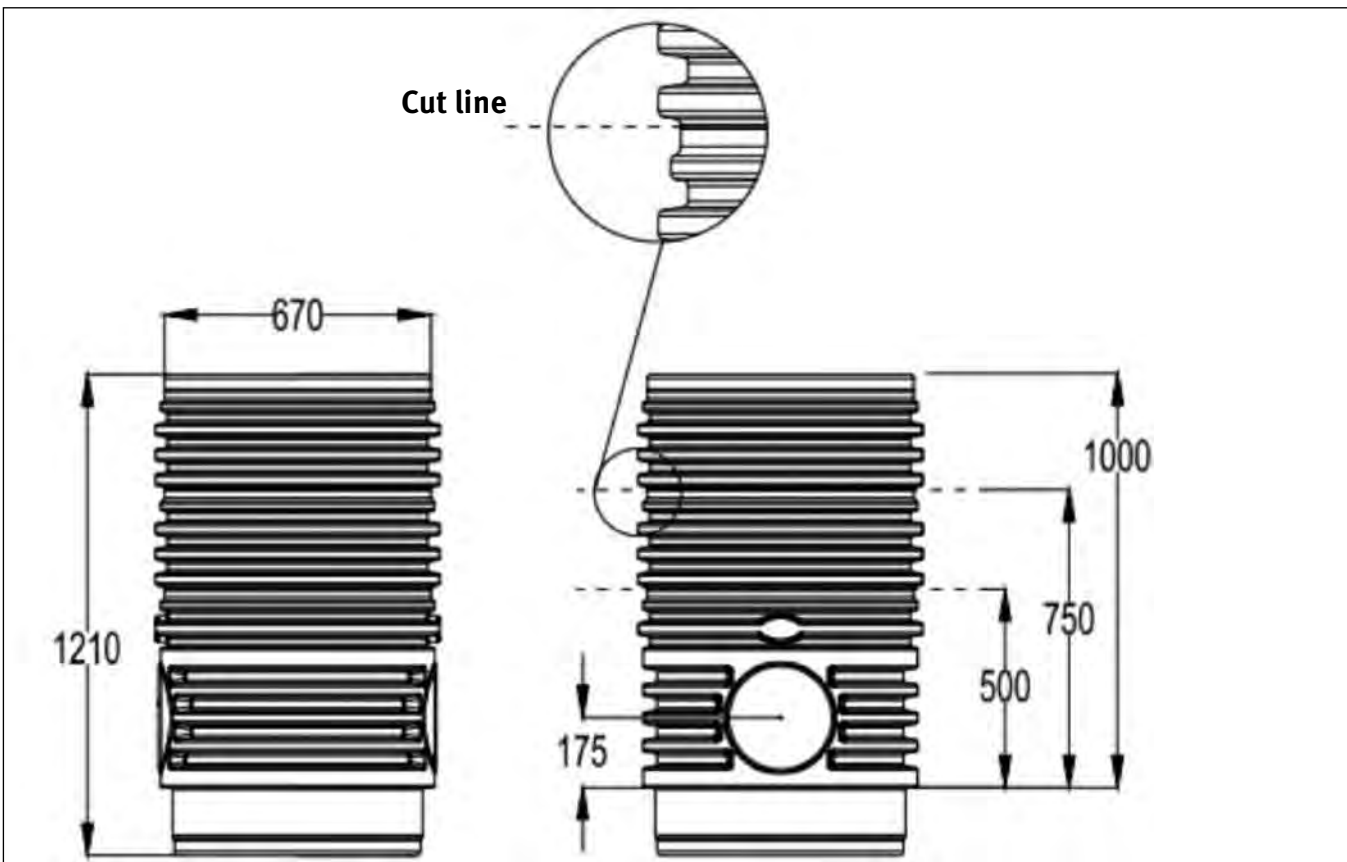
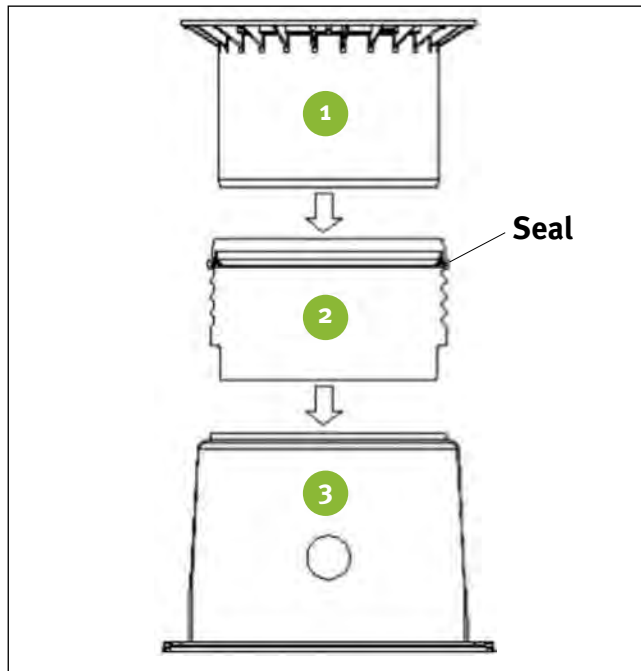


Assembling the extension

For larger coverage heights an extension is needed. To insert the extension into the tank dome, soft soap is needed. Into the highest groove of the extension the profile seal is inserted and greased generously. Afterwards push the telescopic dome shaft into the extension and adapt it to the planned area surface. The extension must not be cut down.

1 Extension = max. earth-cover 1200mm
(in each case in connection with the Maxi telescopic dome shaft)

- ① Telescopic dome shaft (can be inclined by 5°)
- ② Extension
- ③ Tank dome (can be rotated by 360°)



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NOTES:-

PO	FOR GUIDANCE	DS	07.10.20
REV	DESCRIPTION	BY	DATE
ISSUE			



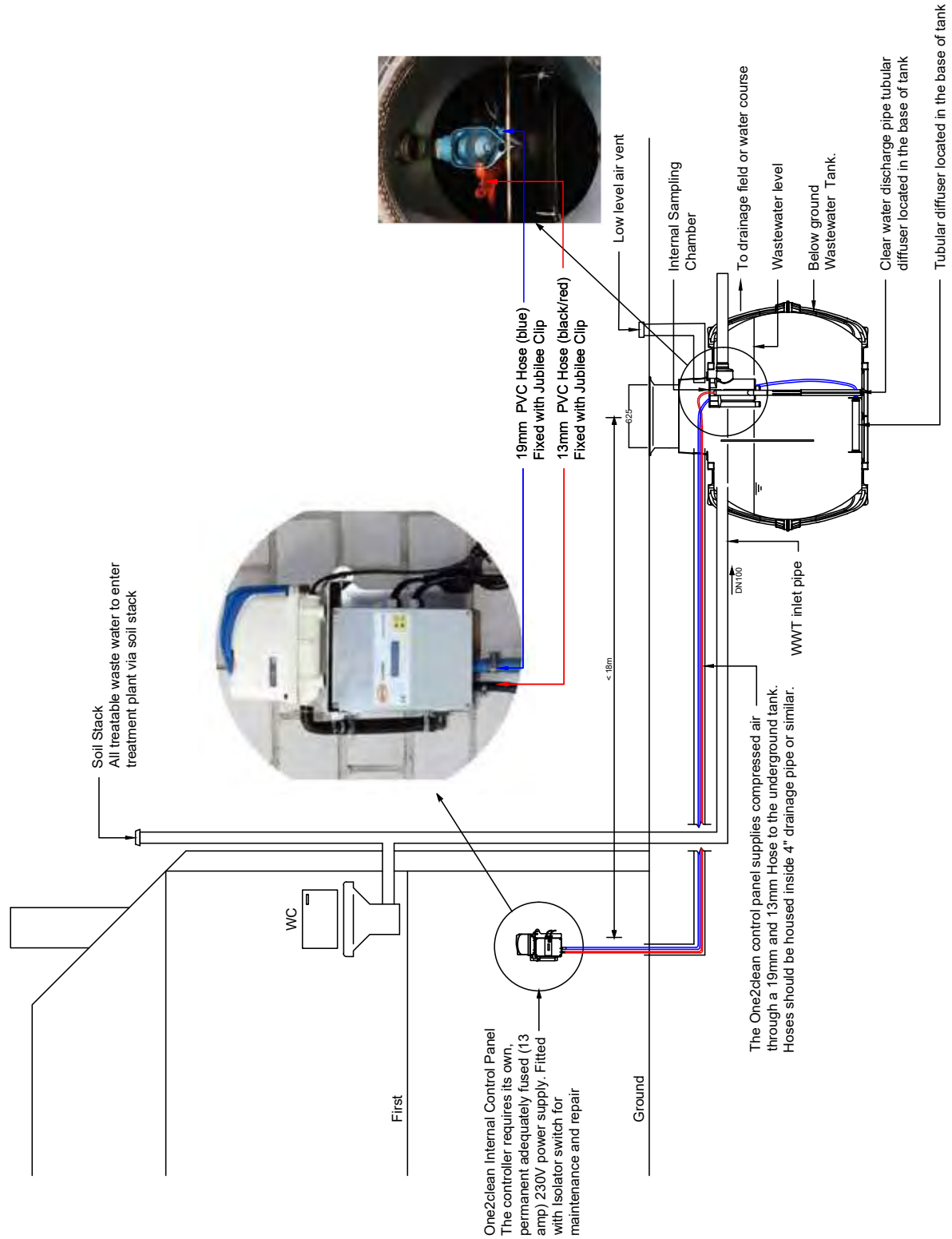
GRAF UK Limited
 Graf UK Limited | Regen House | Beaumont Road | Banbury | OX16 1RH
 T: 01608 661500 F: 01285 211333
 E: info@grafuk.co.uk www.grafuk.co.uk

DRAWN: DS DATE: 07.10.20
 CHECKED: MC SCALE: NTS@A3
 PROJECT

ONE2CLEAN

INTERNAL CABINET

DRAWING NO: ONE2CLEAN_INTERNAL CABINET REV: P0



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P0	FOR GUIDANCE	DS	07.10.20
REV.	DESCRIPTION	BY	DATE

ISSUE

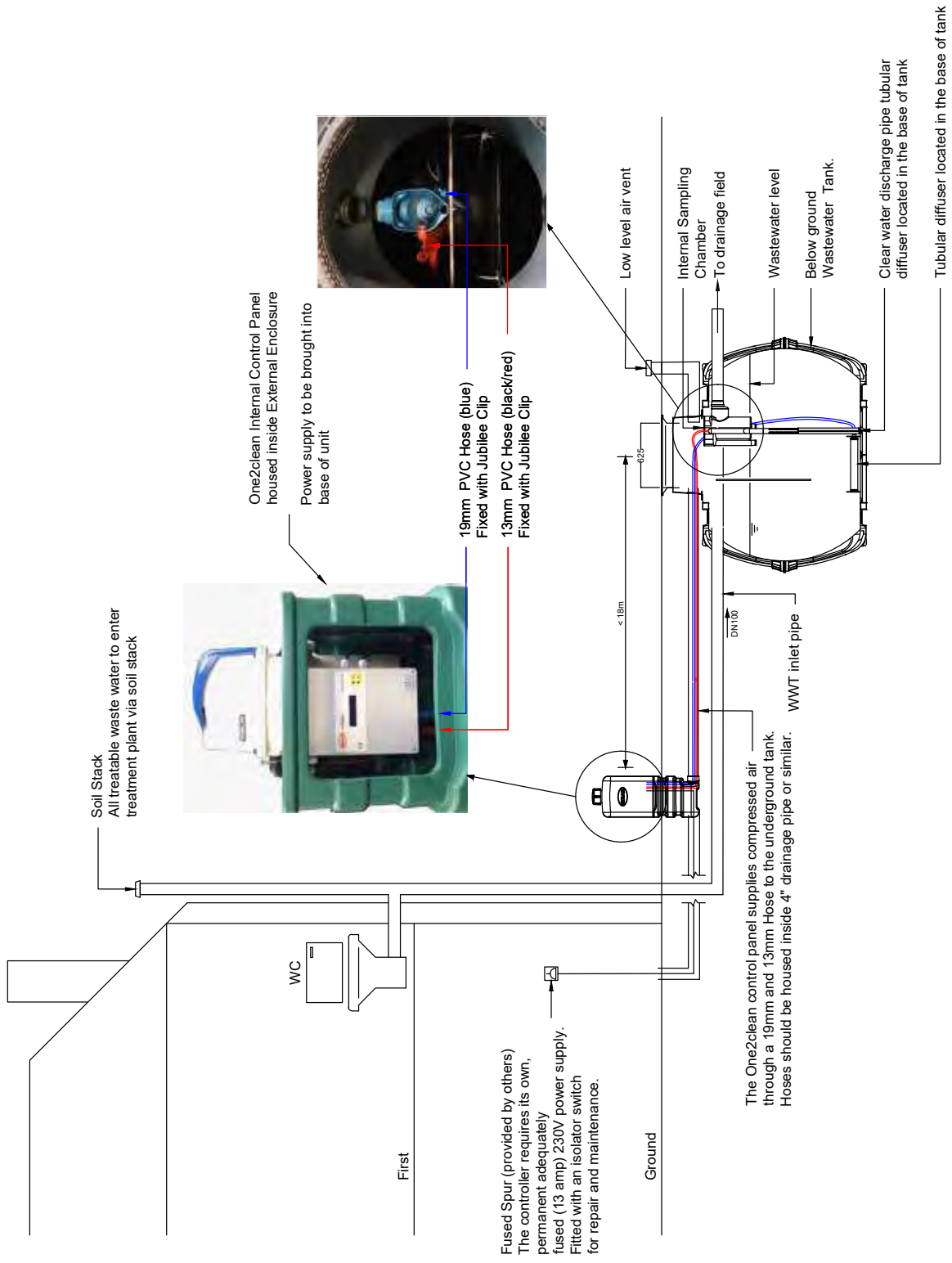


DRAWN: DS
CHECKED: MC
DATE: 07.10.20
SCALE: NTS@A3

PROJECT
ONE2CLEAN

DESCRIPTION
EXTERNAL CABINET

DRAWING NO.
ONE2CLEAN_EXTERNAL_CABINET_P0



6. EXTERNAL CABINET

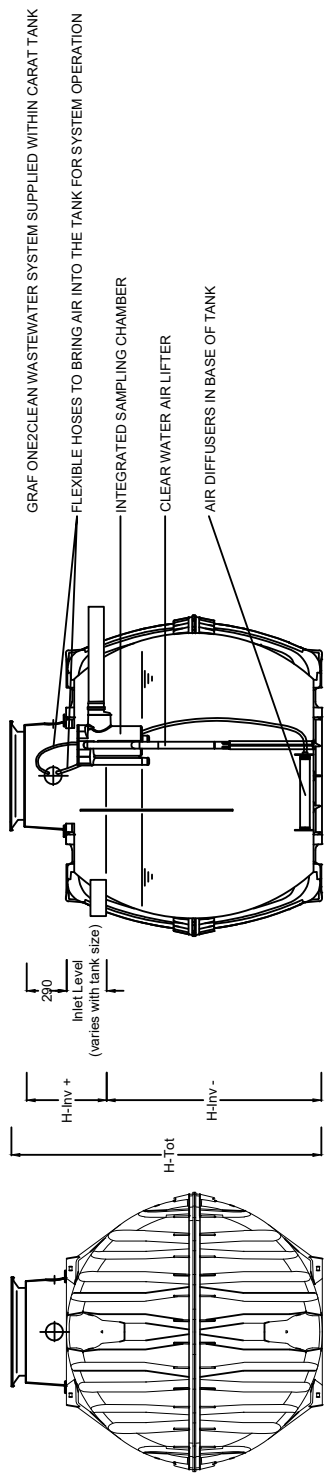
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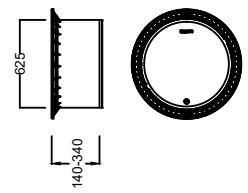
GRAF ONE2CLEAN SYSTEM OPTIONS:
 3750 LITRE CARAT TANK - 5 PE TREATMENT PLANT
 4800 LITRE CARAT TANK - 7 PE TREATMENT PLANT
 6500 LITRE CARAT TANK - 9 PE TREATMENT PLANT

SCOPE OF SUPPLY:
 GRAF ONE2CLEAN WASTEWATER SYSTEM SUPPLIED WITHIN CARAT TANK
 AIR DIFFUSERS IN BASE OF TANK
 CLEAR WATER AIR LIFTER
 INTEGRATED SAMPLING CHAMBER
 TELESCOPIC LID, SUITABLE FOR EITHER PEDESTRIAN OR VEHICLE LOADING REQUIREMENTS
 FLEXIBLE HOSES TO BRING AIR INTO THE TANK FOR SYSTEM OPERATION
 INTERNAL SYSTEM CONTROL PANEL WITH DISPLAY AND OPERATIONAL BUTTONS TO SUPPORT COMPRESSOR

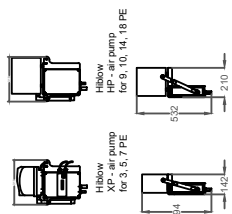
OPTIONAL:
 (EPP) EXTERNAL HOUSING ENCLOSURE FOR INTERNAL SYSTEM CONTROL PANEL



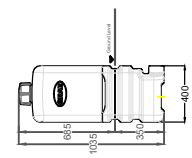
TELESCOPIC LID, SUITABLE FOR EITHER PEDESTRIAN OR VEHICLE LOADING REQUIREMENTS



INTERNAL SYSTEM CONTROL PANEL WITH DISPLAY AND OPERATIONAL BUTTONS TO SUPPORT COMPRESSOR



(EPP) EXTERNAL HOUSING ENCLOSURE FOR INTERNAL SYSTEM CONTROL PANEL



Population	3750 litres	4800 litres	6500 litres
Structure	5 Franchises	7 Franchises	9 Franchises
Weight	44kg	88kg	220kg
Length (L)	220mm	220mm	230mm
Width (W)	175mm	195mm	210mm
H-Hw -	130mm	155mm	180mm
H-Hw +	490mm	530mm	550mm
H-Tot	200-290mm	250-300mm	250-300mm

PO	FOR GUIDANCE	DS	14.08.20
REV	DESCRIPTION	BY	DATE

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 CHECKED: . SCALE: NTS/A3

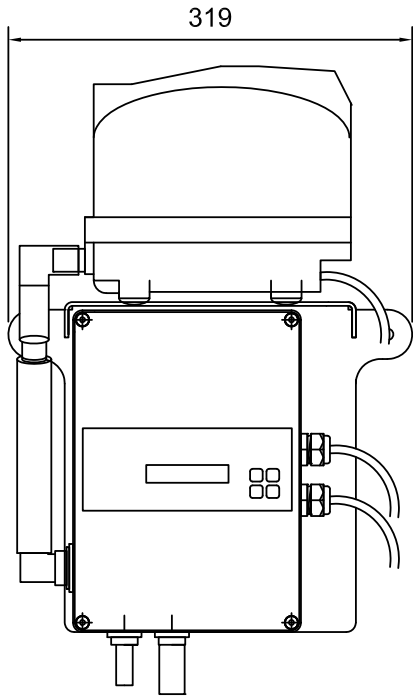
DESCRIPTION

GRAF ONE2CLEAN

REV P0

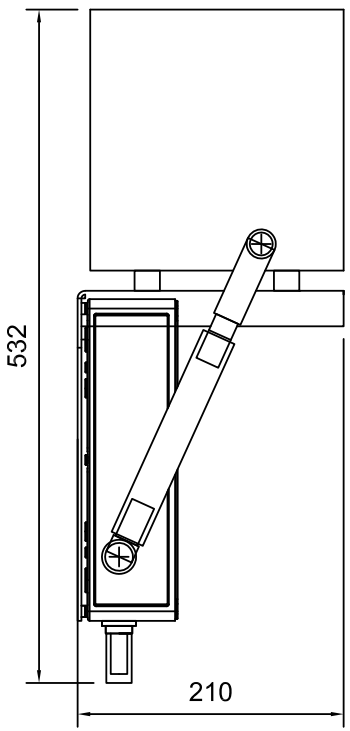
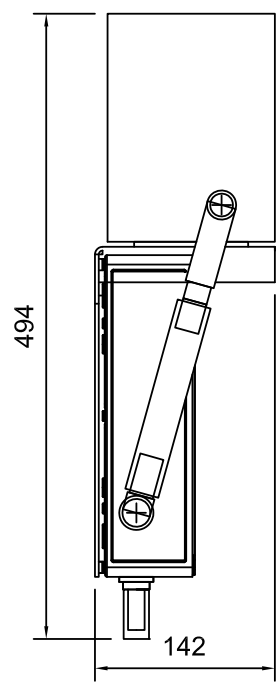


D	Steuerung one2 clean XP und HP Version	Artikel-Nr. article no.
GB	control unit one2clean model XP and HP	FR



Hiblow
XP - air pump
for 3, 5, 7 PE

Hiblow
HP - air pump
for 9, 10, 14, 18 PE



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Otto Graf GmbH Carl-Zeiss-Str. 2-6 DE-79331 Teningen Germany info@graf.info www.graf.info	Zeichnungsinformation drawing information	Artikelinformation article information	Alle Maßangaben in mm all dimension in mm	
	gezeichnet drawn	CSC		Gewicht weight
	Datum date	09.04.2014		
	Toleranz tolerance	+/- 3 %		

9

INSTALLATION OF AIR HOSES AND EXTERNAL CONTROLLER

* Must be installed within 18m of tank. (Air hoses are 20m in length)



1

Connect 13mm hose here

Connect 19mm hose here

Connect hoses as shown (13mm hose to red barbed connector, 19mm hose to blue barbed connector), secure with jubilee clips and then feed hoses through duct to controller ensuring hoses are not kinked.

2

The controller must be installed in a well vented, dry and dust-free interior. Two 8mm holes must be drilled into the wall for assembly.

3

Secure the controller to the wall using the dowels and screws provided.

4

Position the compressor on the controller. Connect the compressor to the unit pipe using the 90-degree hose piece and hose clamps provided. Plug the compressor plug into the control socket.

5

Connect the air hoses to the nozzles on the controller (13mm hose to black nozzle and 19mm hose to blue nozzle) and secure with jubilee clips.

6

The controller requires its own, permanent adequately fused (13 amp) power supply. Fitted with an isolator switch for repair and maintenance.



7



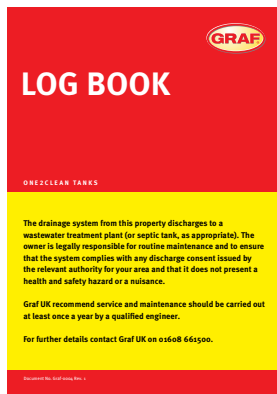
To prevent fumes from the system entering the property via the service duct, please use blanking plug and connect the hoses accordingly.

8



For instructions on how to set the Date & Time, please refer to Document No. Graf-0005 Rev.1

9



For all other information please refer to the One2Clean Log Book.

9

INSTALLATION OF AIR HOSES AND EXTERNAL CONTROLLER

* Must be installed within 18m of tank. (Air hoses are 20m in length)



1

Selecting the location

- The location must be protected from direct sunlight during the summer.
- The rear side of the cabinet must be installed with at least 10cm clearance from the nearest wall to allow for sufficient ventilation.
- The air hoses must be no longer than 20m.
- The cabinet must not be installed in ground water. This also applies to groundwater or backwater that occurs only occasionally.

2

Installing the cabinet in the ground and connecting the service duct

Excavate a hole of sufficient size for the cabinet (installation depth 50cm). Only coarse excavated soil that is free from stones may be used as backfill material is unsuitable, round gravel should be used (size 8-16mm). Make sure the cabinet is stable and is installed vertically in the excavation.

Push the 110mm pipe through the seal in the bottom of the cabinet. Fit a 45 degree bend to the end of the pipe inside the cabinet with the open end facing upwards.

3

Inserting the underground power supply cable

Drill a 20mm diameter hole in the side of the base section of the cabinet at a suitable position for the armoured power cable to feed through. Fit the M10 x 1.5mm cable gland (suitable for a cable diameter of 8-13mm).

4

Electrical connection

The electrical connection must only be carried out by a qualified electrician. An underground armoured cable must be laid to supply power to the cabinet. This cable must be protected by a 13 amp fuse from the building installation and must be fitted with an isolated switch for repair and maintenance. The underground cable is connected to the pre-assembled power socket in the cabinet. This power socket can be removed for easy assembly by unscrewing the two nuts from the holding plate.

5



Prior to installation of the control unit, ensure the spacer has been fitted to the back of the control unit.

6



The control unit should be mounted to the external cabinet with the screws and wing nuts provided.



7



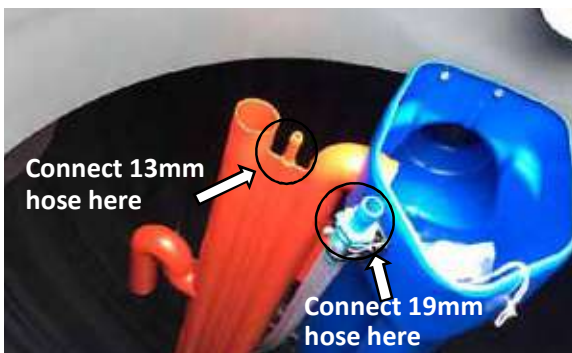
Position the compressor on top of the control unit and connect together using the 90-degree hose piece and hose clamps provided.

8



Connect the air hoses to the nozzles on the controller (13mm hose to black nozzle and 19mm hose to blue nozzle).

9



Connect hoses as shown (13mm hose to red barbed connector, 19mm hose to blue barbed connector), secure with jubilee clips and then feed hoses through duct to controller ensuring hoses are not kinked.

10



Install a 90-degree bend on the inlet to the chamber and feed through the two hoses. Fit barbed connectors to each hose and secure with jubilee clip. Connect to underside of blanking plug.

11



Push blanking plug into end of 90-degree bend. Connect short lengths of hose to connectors on the blanking plug and the connect to appropriate barbed connectors on controller.

12



For instructions on how to set the Date & Time, please refer to Document No. Graf-0005 Rev. 1. For all other information please refer to the One2Clean Log Book.

10 **INSTALLATION OF THE EXTERNAL CONTROL CABINET (S)**

Art. No. 107990



The points described in these instructions are to be respected without fail. If they are not respected, any claim under guarantee will be considered null and void. For all additional articles obtained by way of GRAF, you will be provided with separate installation instructions enclosed in the transport packing.

The components must be examined without fail for any damage before placing the unit in the trench.

Separate instructions will be provided for the operation and maintenance of the installation.

Contents

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1. Scope of supply and accessories

1.1 Scope of supply

The external switch cabinet for EPP consists of the lower part and the cover hood with:

- Lock security pin with installation material
- 2 locking screws, M8, for fitting the one2clean control unit (wing nut and washer enclosed with the one2clean control unit).
- Cable screw connection M20x1.5 for power supply

1.2 Accessories required

The installation of the switch cabinet requires the following items:

- Empty pipe closure element, rated diameter 100 for the gas-tight closure of the technical connection pipe
- KG pipes, rated diameter 110, as technical connection pipe to the clarification system
- Earth contact coupling for the electrical connection of the control unit

2. Choosing the location

When choosing the location for the cabinet, the following points must be borne in mind:

- During the summer months the location should be protected from direct sunshine.
- The rear face of the cabinet must be placed with at least 10 cm of clear space from the nearest wall.
- Operation can be noisy! The air compressor produces a sustained noise of long duration when in operation (comparable to an oil heating fan or a freezer cabinet).
- The air hoses should not be longer than 20 metres.
- The switch cabinet must not be allowed to stand in ground water. This also applies to ground water or backed-up water which only occasionally occurs.
- Power supply is to be via a separately fused power connection (16 Ampere, time-lag). Any additional consuming components on the same fuse can interfere with operations.

The connection of the empty technical supply pipe is effected to the side of the cabinet with the aid of a cable connection socket with rated diameter of 110.

10 INSTALLATION OF THE EXTERNAL CABINET (S)

3. Installing the cabinet in the earth

The black venting outlet is to be fitted onto the cover of the cabinet.

An adequately large trench is to be dug, with the installation depth of the cabinet being 35 cm. The cabinet is then placed in the trench. As backfill material, only cohesive excavated soil may be used, free of any stones. In the event of the excavated material being unsuitable, round grain gravel (maximum granulation 8/16) is to be used.

Care must be taken to ensure that the cabinet is standing firmly and vertically upright in the excavation.

3.1 Connecting the empty technical supply pipe to the clarification system

The empty technical supply pipe is connected via a pipe plug with rated diameter of 110 to the socket provided for this purpose.

3.2 Introducing the earth cable for the power supply

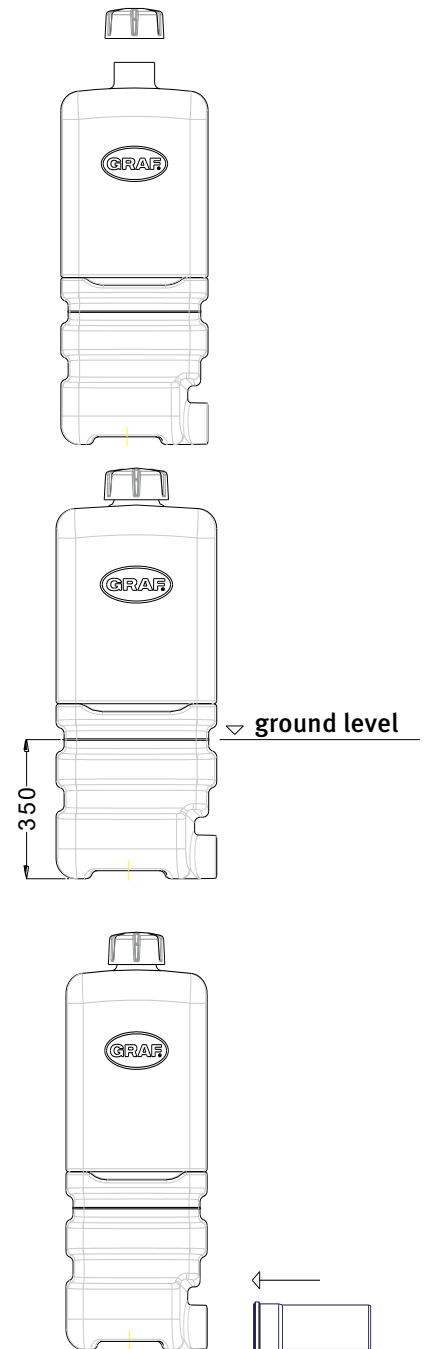
The power cable is to be introduced into the cabinet by way of a M10x1.5 cable screw connection (suitable for cable diameters of 8-13 mm). A drill hole with diameter of 20 mm is to be provided for this purpose.

3.3 Electrical connection

The electrical connection of the switch cabinet may only be carried out by a qualified electrician.

The power supply requires an earth cable to be laid to the cabinet. **This cable must be fused with a 16 Amp fuse via the in-house installation, and must be capable of being isolated from the mains network.**

The connection for the control unit must be provided via a fused contact coupling to be provided by the client.



Provide fuse for the connection

10 INSTALLATION OF THE EXTERNAL CABINET (S)

4. Fitting the closure unit

The lock security pin is to be inserted through the cover from the inside to the outside. Securing is provided with the M4x12 screws.



10 INSTALLATION OF THE EXTERNAL CABINET (S)

5. Fitting the one2clean control unit

5.1 Inserting the one2clean control unit

The one2clean control unit is secured with the locking screws and wing nuts provided. For this purpose the screws are to be introduced from the outside into the interior.

The securing material which is enclosed with the one2clean control unit is not required.



5.2 Connecting the air hoses

The air hoses are conducted via the empty pipe laid in the earth to the planned location of the cabinet. The hoses are to be shortened in such a way that they are not under any tension and cannot be kinked.

The hoses are to be connected to the hose sockets on the control unit. For the fitting we recommend that the ends of the hoses be warmed.



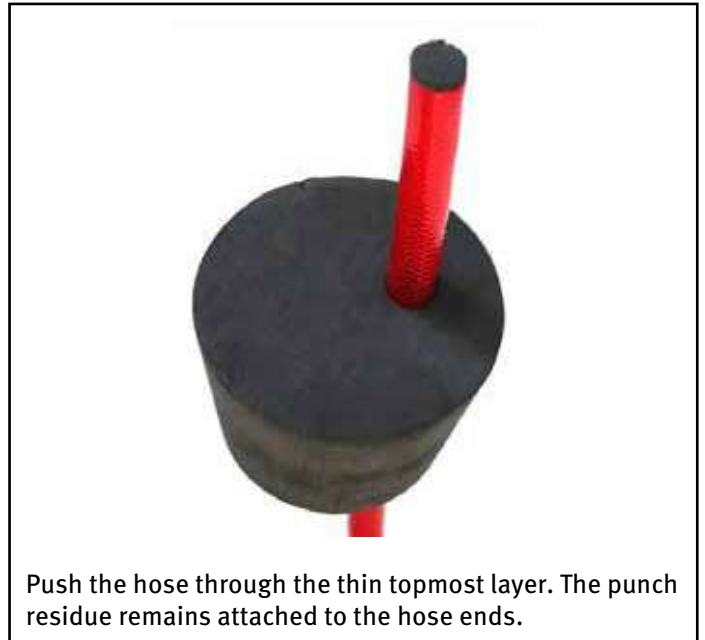
The empty pipe must be closed off at least on the side of the control unit, so that any gas exchange by way of this pipe can be excluded (explosion protection, moisture, odours).

Close off the empty pipe

For this purpose we recommend the GRAF empty pipe connection made of PE foam material (Art. No. 107887).

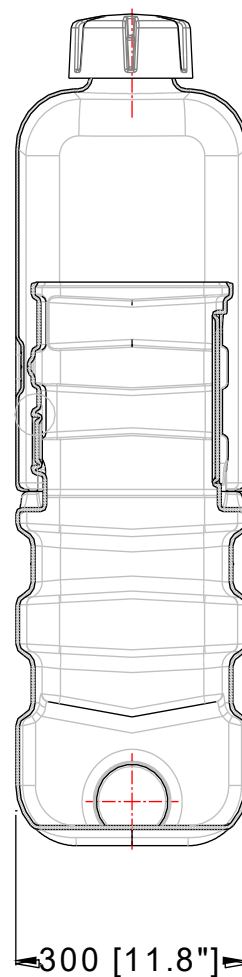
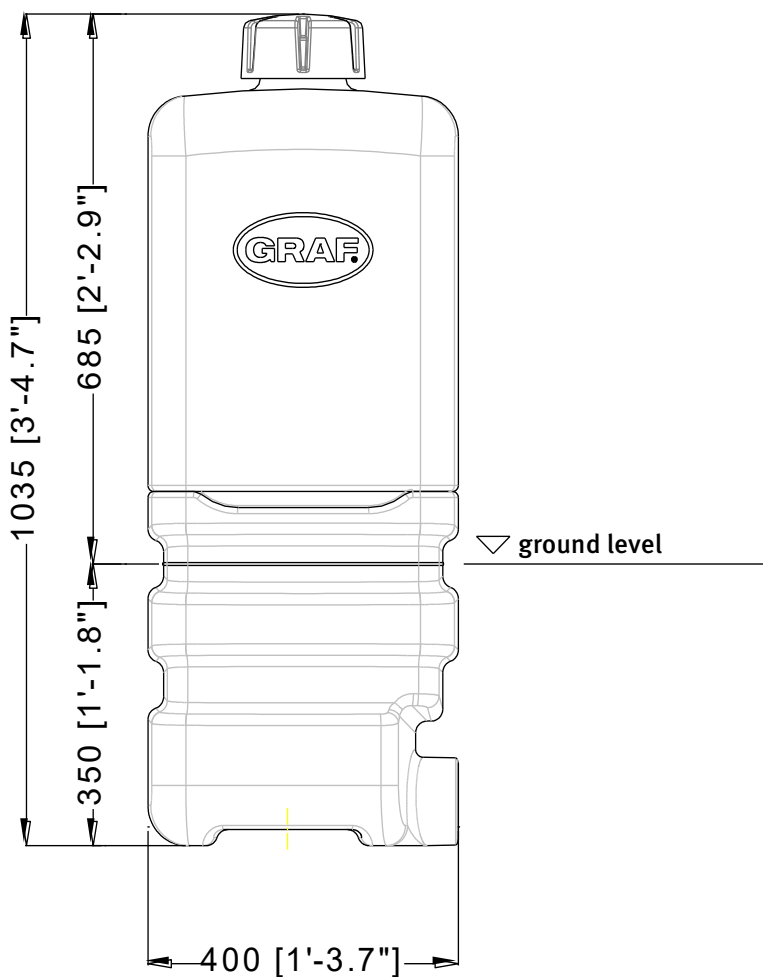
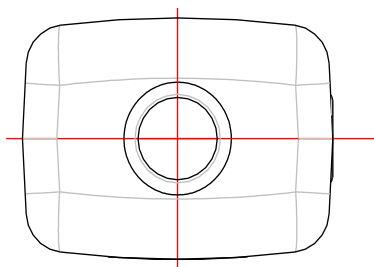
10 INSTALLATION OF THE EXTERNAL CABINET (S)




















5.3 Fitting the GRAF empty pipe closure element made of PE foam material



10 INSTALLATION OF THE EXTERNAL CONTROL CABINET (S)

6. Dimensions



With unit turned on			Cycle pause rest: 684:44min
Press			
Press		X5	19:33:40 2014-05-21 we
Press			1□:33:59 2014-05-21
Press	 	To change hours to correct time	
Press		To move to minutes	09:3□:59 2014-05-21
Press	 	To change minutes to correct time	
Press		To move to date	09:11:59 201□-05-21
Press	 	To change the year	
Press		To move to month	09:11:59 2016:0□:21
Press	 	To change the month	
Press		To move to day	09:11:59 2016-01-2□
Press	 	To change the day	
Press		To store new settings	
Press		To go back to auto mode	



RAINWATER HARVESTING



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